



Research Article

Stress and Adaptation among Families with HIV/AIDS Persons: A Study in Phuket province, Thailand

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Abstract

Stress and adaptation are challenging for HIV/AIDS persons and their families. What and how does the family and HIV/AIDS person get stress and adaptation? Thus, the descriptive research aimed at exploring stress and adaptation among families with HIV/AIDS persons in Phuket province, Thailand. The sample was calculated and systematic sampling that consisted of 80 persons (40 HIV/AIDS persons/40 family members). The study tools were developed based on the family resiliency theory which comprised of questionnaires and interview guidelines. The quantitative data was analyzed by descriptive statistics. Content analysis was done for the interviewed data. The result showed that most HIV/AIDS persons and families had stress at the medium level (52.5%, 65%) respectively. Personal adaptation was at a high level ($\bar{x} = 3.87$, $SD=0.43$), and family adaptation was at a high level ($\bar{x}=4.17$, $SD=0.67$). The interviewed data displayed the HIV/AIDS persons' stressors were "being gossiped about." For families, the stressor was "seeing a person get sick frequently." The family's vulnerability was poor economic status. They were confused and sad. Their resources comprised only family members and health personnel. They performed healthcare functioning and sought more resources for caring the ill persons. In conclusion, the findings displayed that both families and HIV/AIDS persons were stress. Their stressors were being gossiped about personal illnesses. Most of them were supported by their own families and health personnel. Therefore, the findings should be used to create effective interventions for enhancing personal and family adaptation, especially, increasing resources and supportive system.

Keywords: Stress; Adaptation; Family resiliency; HIV/AIDS

Introduction

Being infected with HIV/AIDS causes impacts on both individual and family levels, especially stress in which efficient coping and adaptation is needed [1]. Such adaptation requires support and benefits resources, particularly in healthcare, and new forms of roles for a family in specific circumstances, for the management

of stress and recurring issues. If families cannot adapt well or efficiently, individuals and families themselves might succumb to the following critical conditions [2-7]. During the first stage when an individual recognizes that he/she has been infected with HIV, stress could accumulate and affect him/her both physically and mentally. This stress emerges simultaneously, affecting the mental health of HIV/AIDS persons, and thus adaptation is needed to cope with every aspect of changes [8-9]. Being infected with HIV/

AIDS affects individuals and people close to them, particularly family members. The impacts vary, especially, fear: fear of being a burden to others, fear of being hated and neglected, as well as fear of death and embarrassment. Stress in HIV/AIDS-infected persons renders the persons weary and hopeless, and therefore do not want to take care of themselves, as they think they are not good people [9-10,14]. Anger and aggression might emerge as the infected persons experience disdain, blame, gossip, and no assistance [14]. This eventually leads to depression, feelings of self-worthlessness and hopelessness, behaviors of anger towards surrounding people, non-compliance to suggestions, anti-society and sarcasm by infecting the virus to others, mental insecurity, the feeling of life uncertainty, fear of negligence, isolation, and loneliness, as well as depression, [9,15] in which the symptoms show in forms of inaction, no self-care, loss of appetite, insomnia, reduced sexual desire, and suicide attempts in some cases [15-16].

For families, when they recognize that family members are infected with HIV/AIDS, various reactions occur, e.g., shock, confusion, fear, guilt, anger, and sorrow. Some might cry and grieve for losses of hope, expectations, and life goals agreed upon by husband and wife, resulting in disharmony, unhealthy relationships, as well as feelings of difference and confusion. Some families express extreme anger, blaming, reprimand, and unforgiveness. Some of them succumb to breakdowns, affecting their children and family lives [17,18]. These conditions might lead to severe depression and self-harm, as they lose the will to live. In families with deprived socio-economic status, problems with care, nursing, and increased burden are commonly found, along with inadequate for patients, as well as feelings of extreme stress. Some families cannot accept the patients, are socially ashamed, mistrust spouses, abandonment of persons infected with HIV/AIDS (husband/wife and children), inability to perform regular roles and responsibilities, rejection, and negligence the patients to suffer alone [7,9,19].

In some cases, family members need to quit their careers to care for the patients and develop concerns about their own infection risks, especially in the case of wives of patients [10,18-19] contributing to the lack of care and response to the needs of patients and other family members. Moreover, there could be conflicts in activities related to the care of patients, as other family members do not possess the necessary knowledge and might not recognize that there is one who has an illness since the others attempt to cover up the issue [18-19]. Some families are found uninterested in the illness of their members, leaving the burden solely on some of them [20-21]. The burden consequently becomes severe, rendering the member deficient in self-care and isolated from external societies [6,9-11, 20-22]. From these caveats, it could be apparently seen that when there has been an individual infected with HIV/AIDS, impacts and stress are poised

on the family holistically. As an individual is part of a family, families, therefore, play significant roles in assisting individuals to overcome stress, provided they could adapt well [2,19-20,22].

Literature review in relation to HIV/AIDS from western and eastern sources on adaptation, coping, as well as emotional and psychosocial adaptation-e.g., anxiety, life uncertainty, and quality of life [18,23-28]. Previous studies employed concepts on family resiliency, which concluded with limitations on the application of the concepts only in small parts, and the inability to describe related components in holistically systemic family adaptation. Moreover, there are contextual differences between the socio-cultural conditions of other countries and Thailand [19]. Adaptation is a dynamic process with numerous factors intertwined with each other to help explain holistically systemic family adaptation [7,29-31]. Such a process could have an abundance of stressors (A), and pile-up caused by existing vulnerabilities (V). Furthermore, an adaptation of individual and family today-where social structures and family function and lifestyles (T:Typology) have undergone dramatic changes, coupled with the fact that most past studies had collected data merely in small parts from infected individuals and personnel assigned to perform care-could not be truly comprehended.

Consequently, this study focused to apply the conceptual frameworks and data collection methods from families holistically. The benefit was to nurses, related health care personnel, and multidisciplinary team could use the findings in the planning of interventions, nursing and health care design, foster, and support efficient adaptation for families, which truly conforms to the health problems and needs. For conceptual frameworks, this study had applied the Resiliency Model of Family by McCubbin & McCubbin [2]. The concept could describe stressors, family vulnerability, situational awareness and perception, support and resources, typology, function, responsibilities, and relationships in a family, coping and problem-solving, and the outcomes of family adaptation by planning and collection of data from individuals and family members who received storied on the illness/infection. The findings could in turn be used in the true comprehension of wholistically family stress and adaptation.

Materials and Methods

Participants

This descriptive study was conducted on samples of families with HIV/AIDS infected persons, who came to receive health care service at Patong Hospital, Phuket Province, southern of Thailand. Data collection was done from January to March 2019, on individuals aged 18 and more who were diagnosed according to specialized physicians to the criteria in diagnosis AIDS patients. These individuals are able to communicate well, be literate in reading, writing, and speaking Thai language; have female or male

family members aged 18 and more; have close relationships and have known about the infection of HIV/AIDS from the persons; have roles within the relationship as a husband, wife, father, mother, older/younger sibling, or cousin/relative, and; are people who take the HIV/AIDS infected people to receive treatment, as well as being literate in Thai reading, writing, and speaking. The sampling method used a systematic sampling technique and calculated sample sizes by using the mean of one population group formula [32-33]. The result of the calculation was 33 families. However, to prevent loss and to better fulfill the data, the researchers added the amount by 20 percent [32-33]. The total amount of samples was therefore 40 families (40 individuals and 40 family members, in a total of 80 people).

Research Instrument

The research tool consisted of questionnaires and interview guideline, which were developed by reviewing the related literature, especially, applying the concepts of the Resiliency Model of Family Adaptation [2,17]. It comprised six parts: general information about the individual and family, the Stress test [34], family coping, individual healthcare adaptation, family healthcare adaptation, including, the 6th last part of the family adaptation interviewing guideline. Quality of research tool was conducted using content validation by 5 experts in areas of psychiatry, psychology, family theory and family nursing, and HIV/AIDS infectious diseases. The results of consideration reveal the content validation index (CVI) as 0.94. The study tool was then tried out with similar samples of 10 families (individuals and families). The scores were calculated to determine the reliability of the questionnaire on coping with HIV/AIDS-infected individuals and families, which consequently resulted in Cronbach's Alpha Coefficient of 0.95 and 0.87, respectively. The questionnaire on individual adaptation in the aspect of healthcare received a reliability score of 0.86, while the questionnaire on the adaptation of family in the healthcare of individuals was 0.89. In addition, the questionnaires and interview guidelines were preliminary used with 10 families and 10 HIV/AIDS-infected persons, which share the same characteristics as the samples, to evaluate feasibility in terms of language and comprehension prior to collecting data.

Data Collection and Analysis

The researchers collected data using questionnaires and interviews, with a duration of between 50 and 70 minutes per family. The collection processes began with individuals and were followed by family members, respectively. The collected data was checked afterward for its completeness before proceeding to the analysis. Part of the data analysis was conducted by utilizing a computer program; SPSS for Window. The quantitative data were analyzed as descriptive statistics-e.g., frequency, percentage, mean, standard deviation, and interpreted the scores according to relevant criteria such as level of stress, and adaptation. Data collected from interviews were analyzed using content analysis, then presented by description, and supported by tables and themes or categories which came up from the analysis process.

Results

Most HIV/AIDS-infected persons were male, with a percentage of 55. The persons who were 40-59 years of age; 45% (\bar{x} =41.25, SD=11.50). People with original hometown in the southern part of Thailand accounted for a percentage of 60; educational level of junior primary school accounts for a percentage of 35; marital status the percentage of 67.5; general employee as a career with a percentage of 55; and lived with a lover or partner/spouse; 62.5%. Most of these people have been aware of HIV/AIDS infection for 6-10 years, which accounted for the percentage of 38. 35% of the participants have received treatment for 6-10 years. The participants who have simultaneously received treatment account for 90%. They also have received services from public services and used their rights to the universal health coverage (UHC) scheme, which accounted for a percentage of 90. Most family members were female (55%); aged 40-59 (57.5%) (\bar{x} =42.75, SD=11.16); were married (80%); worked as general employees (65%); had father, mother, children/ husband, and wife as family members (70%); had roles within relationships mostly as husband/wife (67.5%); had family earnings approximately 10,000-30,000 baht per month (53%); which were enough for monthly expenses (62.5%).

Stress among HIV/AIDS-infected persons were mostly at a medium level, which accounted for a percentage of 52.5. It was followed by the high level (32.5%), and the highest level (7.5%), as the details are shown in Table 1:

Stress Level	Number	Percentage
Low	3	7.5
Medium	21	52.5
High	13	32.5
Highest	3	7.5
Total	40	100.0

Data are presented as interpreted level: Low= 0-23, Medium = 24-41, high = 42-61, Highest 62 and more

Table 1: Number and Percentage of Stress Levels among HIV/AIDS Persons (n=40).

Stress among families with HIV/AIDS persons were identified at a medium level (65%), and followed by a high level (17.5%), as illustrated in Table 2:

Stress Level	Number	Percentage
Low	4	10.0
Medium	26	65.0
High	7	17.5
The highest	3	7.5
Total	40	100.0

Data are presented as interpreted level: Low= 0-23, Medium= 24-41, High=42-61, Highest 62 and more

Table 2: Number and Percentage of Stress Levels among Families with HIV/AIDS Persons (n=40).

Adaptation of HIV/AIDS persons, particularly the aspect of coping when analyzed using factors from the framework on family resiliency, found the coping score at a medium level (\bar{x} =2.93, SD=1.43). The results are shown in Table 3.

Coping Level	\bar{x}	SD	Number	Percentage
High	3.70	1.52	2	5.00
Medium	3.06	1.41	33	82.50
Low	1.81	0.83	5	12.50
Total	2.93	1.43	40	100.00

Data are presented as interpreted level: Low =1-2.33, Medium =2.34-3.66, High= 3.67-5.00

Table 3: Average, Standard Deviation, Number, and Percentage of the Level of Coping among HIV/AIDS Persons (n=40).

For family coping, the average scores were found to be at a medium level as well (\bar{x} =3.04, SD=1.61), as illustrated in Table 4.

Coping Level	\bar{x}	SD	Number	Percentage
High	3.92	1.52	5	12.5
Medium	3.17	1.58	28	70
Low	1.87	1.07	7	17.5
Total	3.04	1.61	40	100.00

Data are presented as interpreted level: Low=1-2.33, Medium =2.34-3.66, High= 3.67-5.00

Table 4: Mean, Standard Deviation, Number, Percentage, and Levels and Coping of Families with HIV/AIDS Persons (n=40).

Adaptation for self-healthcare among persons infected with HIV/AIDS scored a high average (\bar{x} =3.87, SD=0.43). Considering each of the aspects, the highest average was the adaptation in terms of virus antidote adherence (\bar{x} =4.50, SD=.45). The aspect with the lowest average was stress management as medium level (\bar{x} =3.02, SD=1.16). The results are shown in Table 5.

Personal Adaptation	\bar{x}	SD	Level
Virus Antidote Adherence	4.50	.45	High
Exercise and Rest	3.80	.82	High
Food Consumption	3.92	.51	High
Stress Management	3.02	1.16	Medium
Prevention of Virus Transmission	4.13	.83	High
Prevention of Opportunistic Infections	3.88	.97	High
Total	3.87	.43	High
Data are presented as interpreted level: Low=1-2.33, Medium=2.34-3.66, High=3.67-5.00			

Table 5: Mean, Standard Deviation, and Levels of Adaptation for Self-healthcare among HIV/AIDS Persons: Categorized into aspects (n=40).

For family adaptation in their functions to provide healthcare for HIV/AIDS persons, the total mean score in the family adaptation was at a high level (\bar{x} =4.17, SD=0.67). The mean score in the aspect of health care in case of illness was the highest (\bar{x} = 4.59, SD = 0.70), while exercises and rest were scored the lowest (medium level: = 3.58, SD = 1.21). The details are shown in Table 6.

Family Adaptation	\bar{x}	SD	Level
Treatment with Virus Antidote	4.27	.91	High
Exercises and Rests	3.58	1.21	Medium
Providing Food	3.86	.97	High
Stress Management	4.05	.86	High
Prevention of Virus Transmission	4.50	.89	High
Prevention of Opportunistic Infections	4.47	.85	High
Health Care in Case of Illness	4.59	.70	High
Total	4.17	.67	High
Data are presented as interpreted level: Low=1-2.33, Medium=2.34-3.66, High=3.67-5.00			

Table 6: Mean, Standard Deviation, and Levels of Family Adaptation Score in Their Functions to Provide Healthcare for HIV/AIDS Persons: Categorized into aspects (n=40).

Analysis of data collected from interviews regarding *the adaptation of individuals* revealed causes of stress, Almost of them was being known/gossiped about by others. In part of vulnerability, the most common was the poor relationship within own family both cognition, and emotion. In terms of perception and feeling, it was found that the persons were shocked and confused; the most-used ways of coping or problem-solving methods, they had used direct approach to solving problems, consulting family members, and emotion management with inner peace and activities. For supporting system and resources, it was found that all the persons had received care and assistance from their families and health personnel; and for the functioning of the persons, it displayed that they have worked for earnings their owns.

In term of family adaptation: the finding revealed that the most common stressors were seeing the person sick and frequently having to admit to hospitals; vulnerability within a family was insufficient earnings. In terms of family perception and feeling; conditions of shock, helplessness, regret, and disbelief of their own situations, were among the results. The most-used ways of coping and problem-solving among the families were consultation within the family, health personnel, and emotion management by practicing inner peace and making merit. The resources were family members and health personnel among all families. For family typing and functions of the families, family members had increasingly taken roles to care for the persons infected with HIV/AIDS, and planning for simultaneous healthcare of individuals.

The members, moreover, found to be concerned about their own health since they were afraid of complications, especially infections. The current health results among families had been still stressful, concerned, and insecure about their lives and future life.

Discussion

From the findings, stress among most families with persons infected with HIV/AIDS were at a medium level and followed by stress at a high level, despite cognition and admission into treatment with virus antidote for 6-10 years among the studied samples (the persons and families). Stress has been caused by various factors, e.g., being known/gossiped about by others (as they are infected with HIV/AIDS), being a burden to family (finance and healthcare), suffering from illnesses, unexpected news (of HIV/AIDS infection), being diagnosed HIV-positive while the partner has been normal, having to tell people in family for mutual understandings towards treatment, and paranoia towards persons infected with HIV/AIDS. The emotions are negative, as infection and illness often occur from bad behavior, unlike other chronic illnesses [9,11]. Most HIV/AIDS-infected persons have stress which simultaneously impacts them both physically and mentally. The stress, moreover, has been found to be persistent, affecting both the persons, close ones, and family. The emotions associated with stress include; but are not limited to, denial, disbelief of their own infection of HIV/AIDS, fear of being told off, fear of being hated, fear of being a burden to family/others, and fear of being abandoned as they perceive themselves as a bad person. Apart from these, the samples also have possessed anger and aggressiveness as they are hated, blamed, gossiped about, and deprived of assistance, which could eventually result in depression and suicidal tendencies [11,12,15]. This study hence shows that although the persons infected with HIV/AIDS have accessed to health services; stress has been still prevalent ranging from medium to high levels, due to the nature of recognition and definition according to self-value in the societal aspect of the illnesses.

Stress was found to be between medium to high levels for families as well as for people. The cause of this includes seeing family members infected with HIV/AIDS and need to be frequently admitted to hospitals, thinking family has been gossiped about as a member has AIDS, suspicion, and fear of being infected as the illness is unrecoverable and sexually transmissible, as well as being labeled and rejected by society. The effects of stress consequently render the family aggrieved, disavowed, and severely angered. The families also blame/reprimand, have been unable to forgive, and were socially ashamed, which in turn causes ill relationships and conflicts within the family [19,35]. Families with debts particularly suffer, as illnesses of family members increase the burden on care and treatment [6]. They, therefore, have experienced stress constantly and increasingly both on an individual level and in terms of increased responsibilities. Some families have internal conflicts

on approaches to care for the patients/infected persons. They also do not recognize the methods of caring for the patients, do not give adequate attention/ do not recognize the symptoms of the family members with illnesses, and therefore put all the burden of caring on some members alone. This causes highly stressful conditions and reduces or no self-care. In some cases, there is even isolation from external societies due to a high level of stress and inability to adapt well [10]. Recognition of the infection of HIV/AIDS among family members is also a self-affecting situation, especially for a husband or wife who is possibly infected unknowingly. Moreover, this type of illness faces social stigmatization which in turn causes stress for family members, both to the illness of family members as well as to the patient who might experience infection and illness in the future.

Adaptation of HIV/AIDS Infected Individuals: when analyze with the factors composing the concept of family adaptation, it reveals main stressors as being known of/gossiped about by others, being a burden to family both financially and in terms of healthcare, suffering the illness, unexpected recognition of terrible news (of HIV/AIDS infection), being diagnosed as HIV-positive while the partner is not, having to tell family for mutual treatment. The stressors also include AIDS contraction to the partner in the case of husband and wife, which causes infection and untreatable chronic illnesses. When faced with complications, the patients further suffer, burden their families, and face unacceptance from society, as well as stigmatization [23,24,28,35]. Pre-existing vulnerabilities-e.g., ill relationships, dispute, and conflict, violence, risky behavior (sex and illicit drugs), economic recession (low income and debt), and abuse of gender which are mostly found among men who love and have sex with men [36-37]-also contribute to increased stress. Perception/emotion/feeling from stressors include shock, confusion, perplexity, heartbreak, worthlessness, discouragement, hopelessness, failure, sorrow, guilt, fear of HIV-infected offspring, fear of being neglected, anger, embarrassment, and blame of others. Problem coping is done by problem solutions of consultation with family members as they are the most trusted and could help physically and mentally, and consultation with health personnel in the belief that they could provide good treatment. Problem solving and coping is also done with emotion management, e.g., inner peace, exercise, watching movies, listening to music, talking with friends, accepting blood results, denial, brawling, suicide attempts, isolation, asocial behavior, praying to Buddha [9,18,27], Allah, and God [25]. Meditation, relying on Buddhist teachings, believing in merits and sins, concealing blood results, strengthening the mind and body, overthinking, insomnia, silence, being uncommunicative, drowsiness, no clubbing/quitting licentious behavior, and coming back to care for family [18,20,27,35]. Stress coping of individuals reveals to be multiple patterns, and methods, ranging from problem-focused coping and emotional-focused coping [7,38-39,40-41].

For the factors on an exploration of benefits resources or supporting system among individuals, the findings indicated most people consult with or tell members of closed relationships and are trustworthy within a family, as well as health personnel, which amounted to a percentage of 100. This is attributable to when infected with HIV or diagnosed with AIDS, and from the emotion and cognition of being stigmatized, the patients are filled with embarrassment and distrust towards everyone; therefore, selectively consult with some members within the family or individuals who have impacts on their lives and who could keep the secrets for them [21]. In terms of the factors on relationship patterns and role changes of a family, the study displayed most individuals still work for earnings, given the symptoms are not severe, to mitigate the vulnerable financial burden or pre-existing debt within a family, as well as the need to gain earnings for self-care. From these caveats, the results of adaptation in the aspect of self-healthcare among persons infected with HIV/AIDS are therefore at a high or good level, as the infected persons take counsel-i.e., knowledge, suggestions, appropriate conduct, regarding priority ingestion of virus antidote, and comprehensive and continuous ingestion of virus antidote, with which enable the infected persons to live long lives-from health personnel [28,42]. From the studies, most infected persons possess CD4 values of >500 cells/mm³.

Moreover, it is found that self-exploration of knowledge from newspapers, the internet, or the members who are also infected with HIV/AIDS and jointly sharing experiences with one another, enable the infected persons to properly adapt and maintain good health [17]. When analyzing adaptation among families with persons infected with HIV/AIDS with composing factors of the employed frameworks. [2] It was found that stressors of the family were: seeing members who are infected with HIV/AIDS suffer from illnesses and frequently admit to hospitals; family being gossiped of (about HIV/AIDS infection); reduced/inadequate income; doubt and fear of being infected themselves, as this illness is sexually transmissible, and viewed upon by society as caused by ill behavior; and exhaustion.

Vulnerability of a family is found to be mostly associated with inadequate income; the infected persons have long had risked behaviors (sex and illicit drugs); ill relationships within the family (dispute and conflict); divorce/separation; and social abuse as there are family members who are the third gender. Cognition/perception/emotion towards stressors include shock/helplessness/speechlessness, sorrow, crying as they do not believe this situation occurs to their families; anger, embarrassment, frustration, grievance, uncertainty, sympathy, fear of severe illness, guilt from infecting partner/improper care of children, as well as anger from being infected by the partner.

In terms of problem solving and coping, most were found

to be consulting with each other in the family as trust is a key factor [35,38], although only some family members were chosen for counseling and moral support. Apart from this, the family was also found to be conducting activities among all members to divert attention elsewhere and to better relax and reduce anxiety. It was also found that requests for other social sources apart from family were extremely low as the family had perceived and felt embarrassed, which consequently made them conceal the situation from everyone. They also had thought that they were gossiped about and hated by neighbors or the community, enabling some of the families to be isolated and bear a great burden in care and treatment. This study furthermore found that currently 70% of families are single families, and 67.7% live alone with a spouse. Therefore, when a problem arises these families do not feel comfortable consulting with anyone outside and only consult with some of the members of the family (only the member who recognizes the problem). This leaves the member who recognizes the problem a great burden in care and treatment alone.

However, it is found that families choose to consult with health personnel with the percentage of 100, due to trust and the personnel who is informed of the situation of the persons infected with HIV/AIDS, which enables the infected persons to simultaneously receive treatment. Hence, health team personnel should be aware of such issue for their duties in care, assistance, and counseling with greater efficiency and continuity, since families, have few social support sources, with which continuously efficient adaptation will not be sustainable. In the aspect of responsibilities change of family, family members who are informed of the situation are found to be conducting more on healthcare for the infected persons. Some of them are still working to mitigate the financial problems of their families. Moreover, families find other people who are relatives or close friends to help care for the infected persons, although in small numbers such a case. For the results of adaptation among families, the functioning of healthcare for the infected persons is at a high level, which is accounted as good adaptation [19]. Stress, however, is still found at medium to a high level as symptoms, anxiety, and fear of the symptoms remain. Care and assistance in reducing stress are therefore what nurses, health team personnel, and multidisciplinary team should be aware of as well as simultaneously provide care accordingly, as adaptation cannot be certainly anticipated Resiliency Model of Family Adjustment and adaptation [22,43,44]. Evaluation, reinforcement, and care with continuity are needed to create truly well-adapted family systems.

Conclusions

The stress of persons infected with HIV/AIDS and their families was at a medium level, followed by a high level. Vulnerability had included poor relationships and inadequate income. Supportive resources are family members and health

personnel, which influence the adaptation of HIV/AIDS persons and families. The study displayed the adaptation in self-healthcare of the infected persons at a high level, while the adaptation of family regarding functions of healthcare for the infected persons at a high level. The findings of this study should be brought to the planning of assistance for the infected persons and families; to help reduce stress, increasing resources, and enhance adaptation of family systems holistically and simultaneously. Moreover, there should be a long-term study to follow up and provide care/ assistance for families, to further enhance efficient adaptation, and well-being of the whole family system through multidisciplinary working team.

Disclosure

Authors Contributions

Virasiri, S and Senanoi, R.: Review, methodology, validation, collection data, data analysis, writing-original draft preparation, and writing. Virasiri, T: methodology, data collection, writing and translation, and editing with native English person.

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Institutional Review Board Statement

This research was reviewed and approved by the Khon Kaen University Ethics Committee for Human Research (KKUEC) Thailand, No. HE 612313, and conformed to the principles outlined in the Declaration of Helsinki. Prior to data collection, the researcher informed the participants of the objectives, instructions of conduct, risk prevention and data secrecy, and verbal waiver of consent due to the vulnerable group. The participants were free to stop answer any questions without giving reasons for their decision. The researchers also presented the overview of findings and destroy data after the research had been completed.

Data Availability Statement

Data supporting the study results can be provided followed by request sent to the corresponding author's e-mail.

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