CHAPTER V

RESULTS

The findings are presented in this chapter, in section 5.1) shows the nature of extent: issues related to needs, services, accessibility, in section 5.2 shows general characteristics, in section 5.3 shows health needs including deperssion and QoL, in section 5.4 shows accessibility as measure by utilizataion and their determinants, in section 5.5 shows uni variate analysis and multivariate analysis, in section 5.7 shows the advice(s) from stakeholder for reducing gaps, redundancy, fragmentation of services and in section 5.8 presents about partnership: feasibility to process for reducing gaps, redundancy, fragmentation of services to alleviate depression and improving QoL of adolescents.

5.1 Nature and Extent: Issues Related to Needs, Services, Accessibility

This part are presented the results from qualitative study and quantitative study as the following:

5.1.1 Qualitative study

Qualitative study placed an emphasis on providing a comprehensive or holistic understanding of social setting and also seeks to find the meaning of events and behaviors (WHO Geneva 1996). For this study, qualitative study, a community mapping was done for gain more understanding about community and health/ health relegated facilities setting. unstructured observation, focus group discussions and in-depth interviews were formulated to describe and explore the in depth information of the perceptions of adolescents and concerned people towards adolescents' health needs, health services accessibility and the quality of life. Key informants including health officers, NGO (Duang Prateep Foundation) staffs, health volunteers, community leaders, youth leaders Four housewives were purposive selected for the qualitative study, To gain more understanding about the key informants of this study, the Social

Interaction Map was shown the actions and practices of these group of people towards each other (figure 5.1). The Social interactions are the acts, actions, or practices of two or more people mutually oriented towards each other's selves. This means that the parties to the social interaction must be aware of each other have each other's self in mind. http://www.hawaii.edu/powerkills/tch.chap9.htm.

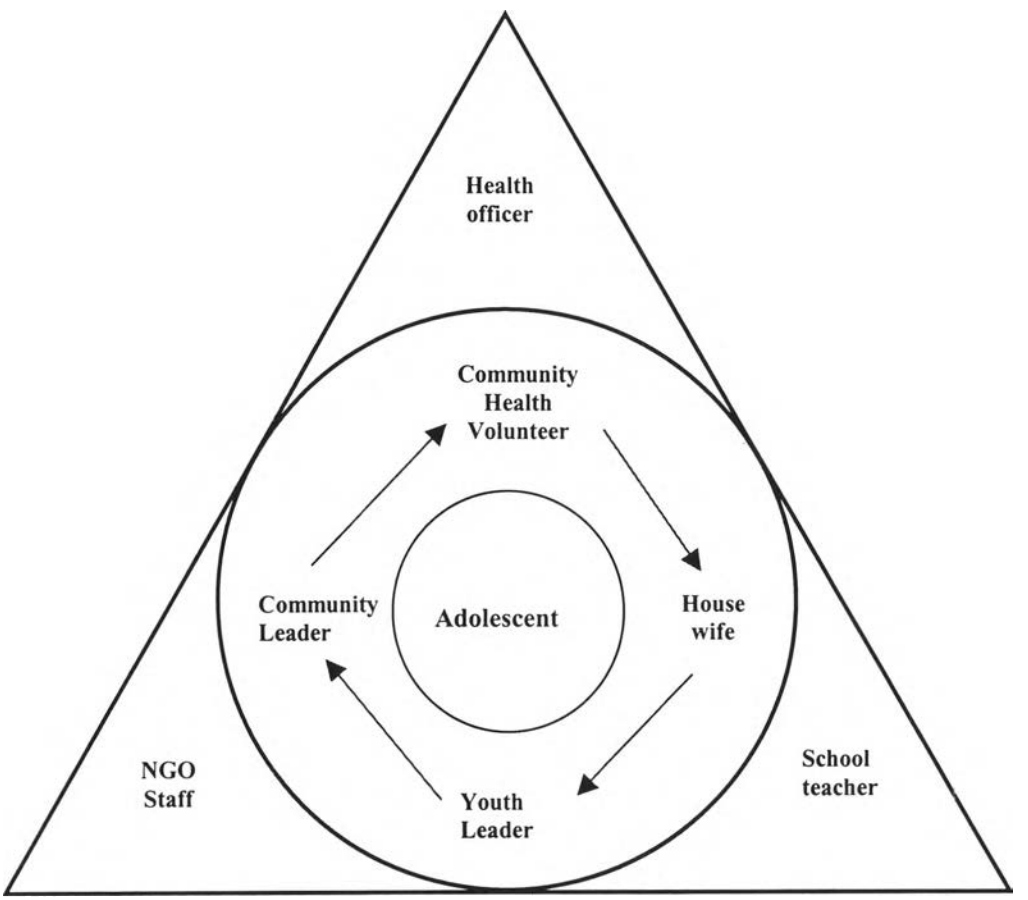


Figure 5.1: Social Interaction Map of Stakeholders

5.1.1.1 Focus group discussions (FGD)

Five focus group discussions were conducted among adolescents who live in the congested area in Klong Toey District Bangkok. The first group of the focus group discussions with both genders was organized on the weekend in the late morning at the school's canteen aimed to gain more understanding about slum adolescent and their health situation. The finding of the first focus group discussion was a useful information to revise the proper guidelines for the next focus group discussions & in-depth interview key informants, in addition, its for development of quantitative

instrument. A few months later, the other 2 groups of in-school adolescents (male and female) were organized on the weekend during in the afternoon at Duang Prateep Foundation (NGO). One month later, the focus group discussions for "not in school adolescent" (male and female groups) were conducted at the same place and the same time as the "in-school adolescent groups".

Procedure

Participants' recruitment

Purposive sampling was employed. The exclusion and inclusion criteria of the focus group discussion participants were explained to the involved people for the participants' recruitment. According to the Act, all Thai children have to enroll for the compulsory education (grade 1 to grade 6). Therefore, it was rare to find adolescents who had never been in school. Consequently, for this study, the "not –in school participants" referred to adolescents who were not in school for at least 1 year or more. Informed consent from both adolescents and their guardians were needed. The staff of Duang Prateep Foundation (NGO) and the members of the voluntary community organization did the participants' recruitment. Finally, there were 35 adolescents from various sub communities who participated in the focus group discussions.

The focus group discussions were undertaken to gain more understanding about adolescents' health needs and health problems including the accessibility of the health care services and QoL. The participants were informed about the processes of the focus group discussion, the duration, and that the interview would be tape-recorded. All participants were assured of the confidentiality to their communication and were given the option to stop the interview at any time they needed. Fortunately, nobody exercised this option. Results of the interviews were reported in the aggregate.

A focus group interview guidelines was developed by the literature review with the consultation with the experts. Then, this instrument was tested with adolescents in a non- target community. Minor revision for the content validity and the proper wordings for using with adolescent were reviewed and revised.

Data collection

Five focus group discussions were organized in the community on the weekend to avoid the time conflict of the participants. The main purposes of each focus group discussion were to understand the perception of adolescents on their health needs, problems, accessibility to health care services, the opinion about potential people/ organization for improving adolescent health in community and, additionally, to define the meaning of quality of life to them.

The themes of the Focus Group Discussion were:

1. Problem (general and health problems) and consultants of adolescents
2. Opinion about existing adolescent health services in the community
3. Health services accessibility (utilization, satisfaction, availability etc.)
4. Opinion about other people or community organizations who might be effective in involvement or improvement in an adolescent health program in the community,
5. Opinion about the needs of adolescent health services in the community
6. Quality of life from their perspective and rating of the over all quality of life

Each focus group discussion lasted approximately 1- 2 hours. The general participants' characteristic was asked for an accurate sense of their background. The moderator had put an effort to create a friendly atmosphere. As there was an age gap among participants and moderator. Creating a rapport with the participants by using the "nick name" during the discussion moreover, there were some snacks available for all participants.

During the Focus Group Discussion, the role of moderator was outlined to participants: "to listen to a range of experiences and perception regarding adolescent health needs, problems, accessibility to health services and quality of life to help the group explore the details of each topics in order to learn and generate new insights. Each session of the focus group discussion of each group began by assuring confidentiality, describing procedures and answering any questions that arose from the previous gathering. An explanation was given of the intention to tape-record the

sessions. Consequently, the participants were willing to share their feelings, opinions and experiences about health problem, needs, accessibility to health services and the QoL.

The procedure of a focus group interview started with the general topic to the specific interest area. As well as being an " ice breaker" the question was to determine the type of language/wording use when discussion experiences. Individual enquires allowed the moderator and group members to gather information about each other. The moderator probed further into responses when necessary and guided the interview to ensure all essential areas of the topic were covered. Additionally, the note taker did the field note.

Data analysis

Each of the tape-recorded of focus group discussion was transcribed. Moreover, the field notes conveying intensity and tone of the discussion were also transferred into the transcripts immediately for highlighting the important points or arguments, factors that caused controversy or consensus. Following the transcription, the researcher reviewed the transcripts while listening to the tapes to make sure that the interview details and contents were completed. Additionally, the field note was reviewed along with the audio–transcript data once again. For confidentiality, fake names were used in the findings.

A qualitative content analysis was used to analyze the data. A content analysis is a research tool used to determine the presence of certain words or concepts within texts or sets of texts. Using this method, the researcher analyzed the presence, meanings and relationships of such words and concepts, and makes inferences about the messages within the texts (Smith, D. 2003). The raw data from both field note and the transcription were reviewed several times to identity explanations or concepts that indicated health needs and problems of adolescents, the reason for use or not use the health services and the perception on quality of life. The initial coding was kept close to the participants' words by use of the short phrases. Patterns were identified in the data as the phrases were reviewed. These pattern identification involved collapsing of

phrases into subcategories. These interpretative phrases recontexualized the data, resulting in the description of health needs, problems, utilization of health services and QoL's perception.

Findings

Of the 35 participants, 16 were males and nineteen were females. The ages ranging from 13 to 22. The average age the "in- school males was 17.1 and females was 15.3. For the " not in school adolescents", the average age for males was 18.8 and 14.1 for females.

Table 5.1 : Focus groups participants distribution by current education status and by Gender

	Male	Female	Total
In- school	11	12	23
Not in school	5	7	12
Total	16	19	35

A series of focus group discussion sessions were conducted as the following:

FGD 1 : Both genders in- school adolescent (6 persons; 2 males + 4 females)

FGD 2 : In- school male adolescents (9 persons)

FGD 3 : In- school female adolescents (8 persons)

FGD 4 : Not in school male adolescents (5 persons)

FGD 5 : Not in school female adolescents (7 persons)

The results of the focus group discussion were presented as the following:

Male adolescents

Of 16 male adolescents, eleven of them currently were in school; five of them were not in school. The ratio of the "in school" and "not -in school" participants was 1 per: 2. It had some difficulties for the recruitment of the not – in school participants, as many of them were current drugs addicts and some did not want to participate in this

study. Of eleven "in-school" adolescents, their aged were 13- 22 years. The average age was 17.1 Most of participants had been studying in the formal school as per their age. Only one of them studied at the informal school. They lived in different blocks (clusters) of the community; however, some of them knew each other. Half of them lived with their parent. Few lived with their relative, and one lived alone, he earned his income as a daily employee. All of them were single.

Mr. Ice (in school): " ...my mom... she had been in school less.., she doesn't understand my problem".

For not in school male adolescents, their ages were 16-22 years. The average age was 18.8 years. One of them stated that he had never been in school; his hometown was in the northeastern. He moved to stay with a friend in this community for 2 years. Most of them were in school until grade 6. Most stopped school due to drug addict problem. All participants had been away from school for 3-7 years. They lived in different blocks (cluster) of the community; however, most of them knew each other as some of them. Three of the participants lived with relative or friend , the other one lived alone. Only one of them lived with parent, he reported that his parent sold the illicit drugs, this was the cause for his drug addict.

Problems and consultants

Most of the in school male adolescents reported that their problems were: insufficient money; grading; school performance. Less than half of them stated that poor environment (pollution) and risky environment (drug abuse). In term of the consultant, half of them identified sibling or friend as their consultants.

Mr.One (in school): " ...when I have problem I talk to friend".

Similarity, most of the not –in school male adolescents reported their major problems were insufficient money. In contrast, the other problems indicated by the sujects including: unemployment, discrimination from the drug addict, stress from low

education and stigmatization. Half of them identified sibling or friend as their consultant, some of them said they had nobody for the consultation.

Mr. Pee (not- in schoot): ".....when I have problem, I never consult father or mother, I prefer consult with friend, particulary drug problem , I consult with friend in my group (drug addiction)".

Health problems and health consultants

Most of the In school male adolescents reported that they were in good health, one faced . All of them had had injury from accident. Moreover, half of them reported they had had road accident. Two third of those subject had been smoked cigarette, of those some, had smoked only sometimes. Few of them (early adolescents) never been smoked. Nobody were drug addicts. Five from nine participants professed they had had sexual intercourse. Of those, the earilest aged for sexual intercourse was 13 . Most of them stated that they didn't use condom as they mostly had had sex with girl friend or friend.

In term of the health consultant, most of them stated that they helped themselves when they faced with health problems by self medication or rest, few (the younger participants) indicated that parents were their health consultants,

All of the not- in school male adolescents reported that they had experienced substance abuses. Of those, most of them used various drugs including heroin, amphetamine, marijuana, glue, tinnier. Only one had smoking. Most of the subjects declared that they currently stopped using drugs. Some of them had been attented the drug therapy program some of them were suceeded with this program, some were not.

Mr. A (not- in school): " ...I had been tried all kind of drugs that available such as heroin, marijuana, amphetaime and so on".

Four from five of participants professed they had had sexual intercourse. Of those, the earilest aged for sexual intercourse was 11. Most of them stated that they

didn't use condom as they mostly had had sex with girl friend, in addition, sometime they used drug then had sex therefore they didn't think about condom used. Most of them reported that they were healthy, few of them stated that sometimes they had headache, fever. By the observation , most of them were slim one of them skinny. All of them had had experiences of motorcycle accident and fighting. Self medication and do nothing were most common practices for mild illness.

Mr Mo (not- in school) : "... if it is not severe sickness, let it get well... sometimes I took medicines, sometime do nothing".

In term of the health consultant, most of the subjects stated that peer and sibling were their health consultant, few of them had been consulted with DPF staff. Most of them stated that they did not visit the health center, the staff were not friendly. They felt that they were worhtless.

Mr. Pee (not- in school) : "..I don' t want to go to the health center, the staff... they are not friendly, they do not pay attention..".

Mr. Mo (not- in school): " I have a bit bad impression with the serivice (at the health center)... they just only gave medicines. Better talk to friend or brother".

Mr. A (not- in school) " I dare not to talk with my mom, for friend we can talk whatever we want".

Opinions toward existing health services

Most of the i*n-school male adolescents* stated health services the available in the community were health center, private clinic, private hospital (it was not located the community), some of them mentioned about school and health center provided sex and health education. Few of them reported that DPF also provided sex education. These showed a fragmentation and redundency of services. Most of them had no idea about adolescent health services in the community. This indicated the gap of services.

Most of the n*ot- in school male adolescents* reported they had no idea about adolescent health services. The health services in the community that they mentioned were: health center, private clinic, private hospital and DPF.

*Mr. Pee (*not- *in school): I have no idea about adolescent health services.. I don't care..".*

Opinions towards accessibility and Utilization of health services of adolescents

Some of the in school adolescents visited health center for mild or severe illness. However, some of them mentioned that the health staff were not friendly. One half of them visited private hospital due to they had covered by the 30 Baht health insurance scheme . They stated that this private hospital (30 minutes by bus) had provided the services for clients with 30 Baht health insurance scheme. Some of them visited government of hospital, particulary for accident. However, more than one half of the subjects had self medication for their illness. Few of them stated that if mild illness they did nothing. Most of them had no idea about adolescent health services in the community. These showed gaps and the under utillizatin of health services.

Mr. Tha (in school): "... when I got mild sick, I took medicine (self medication) if it is not get well, I go to health center, ... doctor is a bit fierce (make him a bit)".

Most of the *not- in school male adolescents* had negative impression about the health center services, they stated that most of health staff there were unfriendly. Some of them stated that they visited private clinic and private hospital when they have severe sickness as they had the 30 Baht health card. For mild illness they stated that they took some rest or did nothing or took some medicines. Few of the participants stated that they had never been visited health center.

Mr. Mo (not- in schools) : "... I don't like to go to health center, doctor and nurse are not friendly sometimes they did not pay attention to me".

Adolescents' health services needs

In term of adolescents' health services needs for not-in school male adolescents, there were vaious opinions in this mattter including:

- friendly health personnel
- adolescent center should be available within community
- having fitness/sport club/exercise instruments in the community
- friendly counselors

Mr. Air (in school) : " if it possible, I like to have the adolescent center within our community with a doctor work in the center".

Pong (in school): " I like to have exercise, sport area for adolescents".

The not- in school male adolescents, their desire on adolescents' health services are as the following:

- Accident and injury services such as a splint, first aids for fracture
- Drug therapeutic program located witnin community with friendly staff

Mr. Mo (not- in school): " I need drug therapeutic program, drug conselling within our community with friendly staff".

Female adolescents

There were 19 females adolescents participated in the focus group discussions; 12 of them were "in school" adolescents, the balance (7) were "not in school" adolescents. The ratio of the "in school" per "not -in school" participants was approximately 1: 2. It had some difficulties for the recruitment of the not – in school participants, as many of them did not want to participate in this study. Consequently, there were only 7 "not- in school" participated in the focus group discussion.

Of twelve in school female adolescents, the ages ranging was 12 –18 years. The average age was 15.3 years. All of the participants currently were studying in formal school as their aged should supposed to be. Among those, the highest current education

status was the first year of the university level, the lowest current education status was 6th grade. All of them declared that they were single. They lived in different sub communities (block), however, some of them know each other by schooling. Most of them studied in government school/university. Only one studied in private school (6th grade).

There was 7 not-in school adolescents, their ages ranging was 13 –21 years. The average age was 14.1 years. All of the participants had stopped school for 1 year or more. Among those, the hightest duration of not in school was 7 years. Some of the subjects know each other by schooling , some did not. Most of them declared they were single. One of them separated, she had had baby since she was 16 year old; moreover, she had been used illicit drugs. Consequently, she was fired from the school. The lowest education background of the participants was the 6th grade and the highest were the diploma level.

More than one half of the i*n school female adolescents* lived with parents. Two of them state that their parents separted , they lived with mother. The other one stated that both parent deceased. The other one lived with friend. Few of them stated that there sometimes had gap among family relationships.

> *Ms. Vee (in school): "my parent has 3 kids, I am the last child, the brother older than me 11 years, there is a gap among my family, sometimes they (my family) do not understand me".*

In contrast, most of the not in school female adolescents had dysfunctional family, of those, they lived with mother; one of them of lived with mother and step father. Only 2 of them lived with parent; among those, one stated that the parent had frequently of quarreled and fighting. One lived with friend.

> *Ms Ann (not- in school): " Father always get drunk, my mom doesn't like, they always quarrel with each other, sometimes I have to ask them to stop quarrel".*

Problem and consultant

Most of the in school female adolescents reported that they had problem with studying and school performance (grading) and having not enough money in family. Less than half of the subjects stated that they faced with poor environment (sanitation problem, noice pollution) and risky environment as there were illegal drugs business near by their houses.

In term of the consultant, half of the in school female adolescents indicated siblings or friends were their consultant. However, for school performance problems, teachers were indentified as their consultants.

New (13years): " when I have problem about my study, I ask my sister, sometimes I ask my friend".

Most of the not- in school female adolescents indicated that they faced with insufficient money. Some also mentioned that they had stress with not enough money for their living expenses. Moreover, few of the subjects reported that they had stress from low education and jobless.

Ms. Add (not- in school): " My parent had no job, my brother works for our family, sometimes we have not enough money, sometimes my mom and dad quarrel with each other, I am sometime stress !".

In term of the consultants, more than half of the not- in school female adolescents indicated that "peer" were their consultant, followed by sibling.

Health problem and health consultant

Most of the *in school female adolescents* reported that they were in good health. However, two of them stated that they had allergic (from dust & weather), the other one of them had asthma. Of those who had health problems, they visited government hospital. For adolescent with asthma she stated that she also visited private clinic and private hosital as well. The other one stated that she had headache quite often, she

mostly had self medication. Regarding to sex actitivities, none had ever have sexual intercourse.

In term of health consultants, most of the adolescents were self help when they faced with health problems by self medication or rest, few indicated that parents were their health consultants.

Ms. Ko (in school): "..... if it is not severe sick I take medicine , if it is not better I go to Chula Hospital".

All of the *not- in school female adolescents* stated that they were healthy, few had mild illness such as common cold, fever, headache. Regarding to sex actitivities, most of the subject decleared that they had never been had sexual intercoure. However, one of them had had first sexual intercourse since she was 15 years old, she also had drug addiction. Presently, she has son 4 years old. She stated that currently she stopped used drugs. By the observation, during the focus group discussion she talked and smile less. In term of health consultant, half of them indicated that peer and sibling were their health consultant, few of the subjects stated that parents were their health consultants.

Existing adolescents' health services

Similarly, most of in school female adolescents reported that health services in the community were: health center, private clinic, private hospital, drugs store. Most of them had no idea about " hot line consultation". Some of them stated that the existing services was less than it should be. Few of them mentioned about school health and health education at school. One indicated that the health services was poor public relation.

Ms. Mo (in school): "..... I don't know what is the hotline?".

Most of the not- in school female adolescents had known health center, some had been used the services for their sickness. However, nobody known about

adolescent health services. Few of the subjects had seen health staff did home visiting , however, they had no idea about the visit.

Ms. (not- in school): " I never known that there are adolescent health services at the health center".

Accessibility and utilization of health services

Most of in school female adolescents visited health center, private hospital for severe illness. One of the participants who had asthma stated that she visited both private and government hospital , however she indicated that she satisfied with the services at private clinic and private hospital than govern.

Ms. Vee (in school): "I often go to hospitals and clinic, I prefer clinic and private hospital, it is quite convenience".

For mild illness, most the participants stated that they visited Drug store or took a rest, Some of them had accessed the services at school.

Ms. Mo (in school): "……counselling, sex education are available at school, I got that from school".

For mild sickness, most of the not- in school female adolescents reported that they took a rest, some of them visited Drug store. For server sickness, they visited Private clinic, few of them visit health center

Ms. Ox (not-in school): " ..when I got sick, usually I bought medicines".

Adolescents' health services needs

Most of the in school female adolescents indicated that the health services should have confidential services. Some suggested that the reproductive health services such as consultation for abortion and sexuality should be available for adolescents. Few of them requested various services for the adolescents including: mental health services

with consultation; drug therapeutic program within community; and fitness center with exercise facilities.

*Ms. Nine (*in school*) " I like to have drug therapeutic center in community for adolescents".*

*Pop (*in school*): " it should has a good program for sex education and sex counseling for adolescents".*

Most of the not- in school female adolescents stated that they need the good services with the confidentiality for drug addict therapeutic in community. Futhermore, some of them requested for the fitness and exercise facilities. Few of them suggested that the family activities should available in the community. The youngest participants asked for the play ground and sport equipments.

Ms. Abb (not- in school): " I think it should has drug treatment and counseling in our community".

The summary of the findings of focus groups discussion are presented in the table 5.2 - 5.3

Table 5.2 : Summary of the findings of the Focus group discussion: *Male adolescents*

Topics	In school (n= 11)	Not in school (n = 5)
1. Demographic data	- the ages ranging was 13 –22, the average age was 17.1 - most of them were studying in formal school as their age should supposed to be, one studied in informal school. - all of them stated that they were single	- the ages ranging was 16 –22, the average age was 18.8 - most of them graduated at grade 6, one of them graduated at grade 12. The other one stated that he had never been in school. Moreover 2 of them couldn't read or write. - most of them were daily laborers, some were motorcyclist taxi. Nobody had permanent job. - most of them declared they were single, one was separated
2. Family Status	- one half lived with parents, a few lived with relative, and other one lived alone	- most of them lived with relative , one of them lived with parent (his parent sold illicit drugs), the other one lived alone
3. Problems (excluded health problem) and consultant	- most of them reported that they had problem with insufficient money, grading, school performance - less than half of them stated that poor environment (pollution) and risky environment (drug abuse) - half of them indicated siblings or friends were their consultant - for school performance problems, teachers were their consultants - some stated that their parents had low education for the consultation	- similarity, most of them had problems as the following - with insufficient money, - unemployment - discrimination from the drug addict - stress from low education and stigmatization - half of them indicated sibling or friend were their consultant, some of them said they were nobody for the consultation
4. Health problems and health consultants	- most of them stated that they were in good health, one faced with asthma - half of them had had injury and road accident - only one third of them were non smoking - most of them were self help when they faced with health problems by self medication or rest, few indicated that parents were their health consultants	- all of them had substance abuse problems, only one had smoking problem, the rest had been faced with various substance abuses including heroin, amphetamine, marijuana, glue, tinnier. Most of them declared that they currently stopped all substance drugs. - most of them stated that friend and sibling were their health consultant, few of them had been consulted with DPF staff - most of them reported that they were healthy, few of them stated that sometimes - they had headache ,fever. By the observation , most of them were slim one of them skinny. - all of them had had experiences of motorcycle accident and fighting - self medication and do nothing were most common practices for mild illness some of them had been treated in the drug therapy program, some of them were successful in this program , some were not.

Table 5.2 : (Cont.) Summary of the findings of the Focus group discussion: *Male adolescents*

Topics	In school (n= 11)	Not in school (n = 5)
5. Existing adolescents health services	- most of them stated that health services in the community were health center, private clinic, private hospital, government hospital (it was not located in the community), they had no idea about adolescent health services - some of them reported that DPF (NGO) worked for sex education	- most of them reported they had no idea about adolescent health services - health services that they knew were: health center, private clinic, private hospital, government hospital
6. Health services accessibility	- some of them visited health center for mild or severe illness - one half visited private hospital due to the 30 Baht health insurance were available there - more than one half had token self medication for their illness - most of them had no idea about adolescent health services in the community.	- most of them had negative impression about the health center services, they stated that most of health staff there were unfriendly. - some visited private clinic and private hospital - most of them know nothing about adolescent health services in the community.
7. Needs of adolescent health services	- adolescent health service within community - sport club, exercise facilities	- accident and injury services (especially splints) - drug therapeutic program located in community

Table 5.3 : Summary of the findings of the Focus group discussion: *Female adolescents*

Topics	In school (n= 12)	Not in school (n = 7)
1. Demographic data	- the ages ranging was 12 –18, the average age was 15.3 - most of them were studying in formal school as their aged should supposed to be, one studied in informal school - all of them declared that they were single.	- the ages ranging was 13 –21, the average age was 14.1 - all of them had leaved school 1 year or more - the lowest education background of the participants were grade 9 and the highest were the diploma level - most of them declared that they were single, only one was separated (she had had baby since aged 16 years old)
2. Family status	- more than one half of them lived with parents, a few lived with relative, and one lived alone	- more than one half of them reported that they had single parent, other two lived with both parent and the other one lived alone
3. Problems (excluded health problems) and consultant	- most of them had problem with insufficient money and the school performance (grading) - less than half of them stated that they faced with poor environment (pollution) and risky environment (illegal drugs business near by their houses)	- most of them faced with insufficient money, some stress from not enough money for their living expenses, some stress from low education , jobless - half of them indicated that peer were their consultant, followed by sibling

Table 5.3 : (Cont.) Summary of the findings of the Focus group discussion: ***Female adolescents***

Topics	In school (n= 12)	Not in school (n = 7)
	- half of them indicated that sibling or friend were their consultant - for school performance problems, teachers were their consultants	
4. Health problems and health consultants	- most of them reported that they were in good health, one faced asthma - most of them were self help when they faced with health problems by self medication or took a rest, few indicated that parents were their health consultants.	- all of them stated that they were healthy, few had mild illness (common cold, fever, headache) - half of them indicated that peer and sibling were their health consultant, few state that parent were their health consultants and self medication for mild illness.
5. Existing adolescents health services	- most of them reported the health services in the community were: health center, private clinic, private hospital,, drugs store; - most of them had no idea about adolescent health services in the community.	- most of them had known health center, some had been used the services for their sickness; - nobody known about adolescent health services, few of them had known that the community health visit program was available in community.
6. Health services accessibility	- for mild illness, they visited Drug store or took a rest, - half of them visited health center, private hospital for severe illness	- for mild sickness, they took a rest , some visited Drug store, - for server sickness, they visited Private clinic, few of them visit health center
7. Needs of adolescent health services	- health services with confidentiality - reproductive health services (consultation for abortion and sexuality) - mental health services - drug therapeutic program in community - fitness and exercise facilities	- good services with confidentiality for drug addict therapeutic in community itness and exercise facilities - family activities - more play ground and sport equipment

5.1.1.2 In-depth interviews

Introduction

In-depth interview was conducted aimed to explore the perception of the stakeholders who working on adolescent health and health related program in the community towards adolescent health needs, accessibility to health services, and the existing services that they have provided. Additionally, the main objective for in-depth interview was to explore the perception of these stakeholders towards the processes and contents of partnerships to use for developing the intervention.

In-depth interviewing entails asking questions, listening to and recording the answers, and then posing additional questions to clarify or expand on a particular issue. Questions are open-ended and respondents are encouraged to express their own perceptions in their own words. There are three basic approaches to in-depth interviewing that differ mainly in the extent to which the interview questions are determined and standardized beforehand: the informal conversational interview; semi-structured interview; and the standardized open-ended interview. Each approach serves a different purpose and has different preparation and instrumentation requirements (The world Bank Group, 2004).

For this study, in-depth interviews had been formulated among various people who involving in adolescent health programs in the community. These were included

- Two health officers
- Two NGO (Duang Prateep Foundation) staffs
- Two health volunteers
- One community leaders
- One youth leaders
- Four housewives

Procedure

The purposive selected of the above participants was conducted. The objective of the study was explained to the participants. For this study, the standardized open-ended interview was employed, its aimed at understanding the perception of respondents towards adolescent health needs/problems, adolescent health services and their opinions for improving adolescent health services in the community. The standardized open-ended interview consists of a set of open-ended questions carefully worded and arranged in advance. For content validity, this instrument was developed under the supervision of the expert.

As mentioned earlier, twelve keys informants were purposive selected, these were two health officers, two NGO (Duang Prateep Foundation) staffs, two health volunteers, one community leaders, one youth leaders and four housewives. The

interviewees were informed about the study objectives, the duration of the interview, and asked the permission for tape recording. They were also given the option to stop the interview at any time they needed. In addition, they were assured of the confidentiality of these information, their name will be kept in secret. The places and time for in-depth interviews depended on the convenience of the participants, the appointments of each participants were arranged by one of Duang Prateep Foundation's staff. The interviewer asked the same questions according to the interview guideline to each respondent with essentially the same words and in the same sequence. This type of interview may be particularly appropriate when the evaluators wanted to minimize the variation in the questions they pose. It is also useful when it was desirable to have the same information from each interviewee at several points in time or when there were time constraints for data collection and analysis (The world Bank Group, 2004). Standardized open-ended interviews allow the evaluator to collect detailed data systematically and facilitate comparability among all respondents. According to the differentiate of socio-economic and educational background among participants, the explanation in the details of some questions were adopted.

Findings

In-depth interview respondents composed of

- Two health officers of the Health Center 41; the director (male physician aged 55 years) and the community health nurse (female aged 47 years)
- Two female staffs (aged 26, 41 years) of Duang Prateep Foundation, the biggest non-government organization who has been worked closely and effectively with people in the community
- Two female community health volunteers (aged 42, 35 years)
- One male community leaders (aged 36 years)
- One youth leader (male aged 22 years)
- Four housewives from housewife group (aged 28, 32, 34, 41 years)

Most of the respondents (excluded physician and nurse) finished compulsory education (grade 6), few gradated at secondary school level (grade 9). Two female NGO staffs had had bachelor degree. In term of the duration of working in the

community, the health officers, NGO staffs have been worked in this community more than 5 years. For community health volunteers, one of them has been worked with this community for 3 years, the other one has been worked here about 1 year. For the community leader he has been in this position for one year. Regarding to youth leader, he has been work in this position for 1 year more. For housewives, most of them have been worked with the housewife group for 1-2 years.

Opinion about adolescents' health needs and accessibility

- Health officers

Health officers indicated that drug addict was a major health problem in this community. Additionally, violence and accident in young people were found quite often. Moreover, unintended pregnancy, unsafe sex and premarital sex were increasing among teen. The hotline counseling was implemented, however, there were a few number of adolescents utilized this kind of services.

Nurse B: ".... Unintended pregnancy rate is raised up since year 1990, moreover age at first sexual intercourse of young people is also earlier than the past".

- NGO (Duang Prateep Foundation) staffs

In her opinion, she mentioned about premarital sex and unsafe sex was the major health needs and health problem in the community.

Ms. O (41 years old) " .... the value change in teen now a day, they (teen) perceive that pre marital sex is a normal life, therefore they start having sex during they are in school, finally they face with unsafe sex and unwanted pregnancy. It's worse that there was no any service to help this group".

In term of health accessibility, she reported that there were several private clinic that teen could visit, they had to pay, some of teen could effort but some could not for the service cost For government health services, there was only one health center that cause to inaccessibility of health services. However, there were some teens who needed

to keep secret about their health problem such as drug addict and HIV infected, they did not visit heath facilities.

- Community leader

He also stated that most of the teen in the community were healthy, however, his concerned was amphetamine addict which some amount of young people had faced with this problem. Regarding to health accessibility, he indicated that teen usually visit health center when they had mind or severe sickness, some their parents bought medicines for them at drug stores.

- Health volunteers

In contrast, the health volunteer stated that adolescent, majority, were healthy.

Mrs. Vee (35 years) "Yong people in this community, the majority are healthy".

- Youth leaders

He reported that drug abuse was the major health problem in the community

Mr. Sak (22 years) " this community easy to get amphetamine, teen in this community are very close to it (amphetamine), therefore, they might easily to be amphetamine addict". In term of health accessibility, he mentioned that the teen could visit health center as it was located in the community.

- Housewives

Most of them stated that most of adolescents in this community were healthy however, amphetamine addicts was mentioned as the and problems of adolescents, followed by unintended pregnancy.

Mrs. Nit (41 years) " one teen near my home had baby when she only 15, she had to stop school".

Existing health services and role of the respondents and their organization towards adolescents' health?

- Health officers

The health centers #41 with 10 bed facility was assigned by the BMA, providing health services in Klong Teoy district. Health officers stated that the existing adolescent health services provided by the health center included preventive, promotional, curative, and rehabilitative services. Due to the limited of budget and manpower, specific programs for adolescents were not functioning well. However, a drug addict rehabilitation center with most of the clients were young people and adults, provided both medical services and psychological rehabilitation was available at this health center. Additional, there was hotline services (a telephone consultation), however, few of adolescents utilized this service.

Dr. A: "...we provide health care in term of preventive, promotional, curative and rehabilitative (especially drugs therapeutic center) for young people in our health center".

- NGO (Duang Prateep Foundation) staffs

The DFP, presently is the biggest NGOs in this community, providing both community development and community health programs. In term of adolescent health projects, there were the "AIDS Control Project", the "Drug Addict Prevention Campaign", the "Children's Art Project", "Educational Sponsorship" and the "New Lives for Boys and Girls". Most of the mentioned projects were preventive and promotive projects. Moreover, the "Children's Art Project" was implemented as a rehabilitation program for children and young people with drug addicts. Several of projects work closely with youth group in the community.

Ms. Su (26 years): " I work on AIDS control project, my work, I go to each block (cluster) of the community for teaching teens about how to prevent AIDS. I also sometimes work with school in this matter".

- Health volunteers

They reported that their works based on voluntary basis under the supervision of Health Center. All of them had been trained by health personnel about basic public health knowledge. Their works were health communicator and health educator. They assisted health center on dissemination of health information (basic). However, less than half of them were actively working. Most of them worked for primary health care especially maternal child health program. adolescents were not really their target.

- Community leaders

The community leaders were selected by people in the community for working as a representatives of the people in the community. Most of them work closely with local government sector, local politicians and related organizations for community development. Many of them were senior and well known in the sub-community (cluster). In terms of adolescent health, they worked closely with police, the health center and people concerned with the drug addict prevention campaign, and the injury and violence campaign.

Mr. Pai (42 Years): "...We, with the support of the BMA, received a budget for a drug prevention program. We brought young people to Lumpini Park for youth campaign activities to get them away from ..yaba (amphetamine), and teens were quite happy to participate in this project".

- Youth leaders

The youth group was established on a voluntary basis. Their activities were targeting children and young people in the community. However, only some were active.

Mr. Sak (22 years): "In some blocks, the youth groups do nothing. For our group, we come here (DPF) to practice music. We play music for some special events, such as Children's Day, New Year's Day. Sometimes we go together in a group for a youth camp".

- Housewives

The housewife group was established targeting income generation. However, some worked with the DPF for educational scholarships for children and young people. They worked as inspectors, monitoring and reporting the progress of the fellows.

Mrs. Noi (34 years): "Most of the fellows behave well. However, one case (15 years old)-- was found that she got pregnant, finally she was expelled by the school, and I have to follow up and report to the DPF".

Mrs. Lai (32 years): ".....most of teen in this community are healthy, but many of them smoke, we try to teach them about the dangerous of smoking".

Are your organization provide the services to serve the needs of adolescent?

- Health officers

Health officers stated that several services were available for adolescents at the health center including health education, health promotion, counseling, school, curative and referral system. Moreover, out reach programs also implemented for chronic cases and follow up cases. However, one of them stated that the services were not cover all the needs of adolescents such as a terminal abortion for unwanted pregnancy this type of services is not available.

- NGO (Duang Prateep Foundation) staffs

For her opinion, she strongly believed that her organization provide services to serve adolescent needs particularly the program for Drug Addict Preventive and Curative Program (New Life Project). However, as the limited budget the services able to serve a limited number of people.

- Health volunteers, community leader and housewives

They reported that most of their work did not focusing on adolescent health. However, the community leader stated that he tired to work with adolescent and relevant people for drug addict problem in this community.

Mr. Pai (36 Years, community leader): "...in Klong teay (Slum), as you may known, amphetamine is the major problem in this community, we are quite concerned our young people, it is risky community, adolescents might easily turn to be a drug addict person".

- Youth leaders

He stated that most of the activities that he involved were small projects with limited budget, these were not serve the needs of adolescents.

- Teachers

As mentioned earlier, there were 7 schools (government and private schools) for young people in this community. Four government and three private schools are located in side the community. Generally, schools work collaboratively with the health center on "school health program" for health screening, preventive and promotive periodically. One school that located in the center of slum community has established the "hotline project" (telephone consultation).

Teacher Yuth (Male, 35 years) "....the hotline is not work well due to we have workload and we have limited place for setting up hotline phone".

This project had been implemented by the school teacher. As per the school report, nineteen hotline calls was recorded in two months (Chumchon Mooban Pattana School Report, 2001). However, the results from the quantitative study showed that a few of adolescents indicated that school was one of health facility.

Summary of findings related to health services

The adolescent health services were categorized into 2 types including public and private sector. The summary of the existing services is as below.

Government Sector

1. Health Center

Bangkok is a local administration. Therefore, the Department of Health, Bangkok Metropolitan Administration (BMA) provide health services for the Bangkokian. As the Klong teay District has a large population, two health centers (# 40, # 41)were assigned by BMA as the health facilities to provide health services in this district. However, a ten bed health center 41 is located in the Klong teay slum community. According to the in depth interview of the health officers and the documentary review, it was found that the adolescent health services provided by health center include preventive, promotive, curative and rehabilitative services. With the limited resources both in term of budget and man power, the specific programs for adolescent were not functioning well. The drug addict rehabilitation center is also located at the health center; staff composed physician who also work for health center, nurses and social worker. Most of the clients were young people and adults (aged 15-35), the services provided both medicines and mental rehabilitation. In term of hotline service, the telephone consultation based at the health center run by trained social worker has been implemented for slum people. It was found that most of the clients were patients and married couples, with few adolescents utilizing this such service. In contrast, most of dolescents reported that visited health center only they did not get well or severe illness. Moreover, many of them stated that they have no idea about adolescent health services and hotline service that available in the community. It shown that there is a gap of services.

2. Government hospital

Most common government hospitals that slum people had been visited were Chulalongkorn Hospital and Police Hospital. Both of them were located close to the slum community, taking less than half an hour from home to the hospitals. The Chulalongkorn Hospital established the adolescent clinic at 11^{th}. Floor, Bhumipol Adulyadeth Bld. Its provides services in official hour on the weekday (Chulaongkorn Hospital 2002). However, the finding from an informal interview slum adolescents indicated that all of them known nothing about this service; anyway most of the adolescents visited the above hospital for serious illness.

3. Fitness park

Lumpinee Park of the BMA is the most famous park for young people in slum community for their recreation and exercise as it pretty close to their home. It takes 15-30 minutes by bus depends on the traffic. Moreover, there are a few play grounds that the local organization reserved for the kids and young people. Per the observation, it found that early adolescents and the younger children preferred the play ground than the older adolescents.

4. School health program

Schools in cooperation with the health center had implemented the school health program for health screening, preventive and promotive. Additionally, one school in community has implemented a "hotline project" (telephone consultation). However, this project was not successful due to limited resources.

Private sector

1. Drug stores

There were drug stores located scattering in the community. These were including the convenient store such as " Seven Eleven, AM & PM" where it was quite popular with teen for shopping; some drugs (paracetamol, anti histamine etc.) including condom were available in these shops. Moreover some glossaries were also sold some drugs such as drug for common cold, anti diarrhea and so on.

2. Private clinic

Five private clinics with general practitioners were in this community (Siritree, 2002). According to the in- depth interview and focus group discussion of adolescents, the stated that when people got sick those who had mid and high income preferred to visit private clinic because it provided faster and more convenient services than government sector.

3. Private hospital

According to the universal health insurance scheme, the many private hospitals participated in this project including some private hospitals nearby Klong teay slum.

Therefore some of adolescents who have had a 30 Baht health insurance card preferred to visit the private hospital when they were faced with health problems. Most of the private hospitals provide curative care for the clients who hold the health insurance card.

4. Non-government organization (NGO)

Surprisingly, very few respondents indicated that NGOs was one of the health facilities in the community.

There were more than 30 non-government organizations worked on the community development and health related issues. The smallest NGO composed of a few staff. Less than 10 NGOs work on health and health related problems. For this study, the biggest NGO, named Duang Prateep Foundation (DFP) was purposive selected as the representative of the NGO's in this study. The DFP was established by the people in this community providing both community development and community health programs. Regarding to adolescent health and health related project, DFP has launched the " AIDS control project", the " Drug addict prevention campaign", the " Children art project", the " educational sponsorship" and the " New life for boy and girl" . Most of the mentioned projects were preventive and promotive projects. The " Children art project", it was the rehabilitation for children and young people with drug addicts.

5. Others (Community organizations)

These included community leaders, youth groups and housewife groups.

5.1 Community leaders

All of community leaders were selected by people in the community. Their role were the representative of people in community working closely with the government sectors and related organization for community development. Most of them were senior and well known in their communities (cluster). In term of adolescent health, they work closely with police, health center and concerned people for drugs addict prevention campaign and injury and violent campaign.

5.2 Community Health Volunteer

This group of people work on voluntary basis under the supervision of Health Center 41. They had been trained for a short period of time for basic public health knowledge. Their role were health communicator and health educator. However, less than half of them were actively working. Most of them work for the maternal child health program, the adolescent is not their really target.

Mrs. Vee (32 years) " I has been work in this job for 2-3 years, I help Dr. (at health center 41) for calling children under 5 for vaccination. Teenage in this community, they are all right .. but .....some are drug addict (amphetamine)".

5.3 Youth group

Youth group was established on voluntary basis. Their activities were targeting the children and young people in the community. However, only some of them were active.

Mr. Sak (22 years): "In some block, youth group do noting. For our group, we come here (DPF) for music practicing, we play music for some special events such as Children day, New Year Day. Sometimes we go together in a group for youth camp".

5.4 Housewife group

The housewife group was established targeting on income generation, however, some of them work with DPF for educational scholarship for children and young people. They worked as an inspector for monitoring and reporting the progress of the fellows.

Mrs. Noi (34 years): "Most of the fellowship behave good. However, I found one case (15 years old), she got pregnant, finally she was fired by school, I have to follow up and report to DPF".

5.5 Traditional healer

As per informal interview of housewife group, it found that the traditional healers in slum community are one of the alternative for health care seeking particularly for elderly. These included traditional massage, herbal healer and shaman. Unfortunately, the number of the above services in this community were not available. From in-depth interview of adolescents, they knew who were the traditional healers but, they had never visited these people for their illness.

Conclusion

The findings indicated that the major adolescents health needs and problems were drug addiction (particularly, amphetamine addiction), pre marital sex, unsafe sex. The existing health services were divided into 2 types including public and private sector. Adolescents preferred private health services than government services, some stated that health staff at public services were not friendly. Additionally, some of adolescents have no idea about adolescent health services in the community. Moreover, some of key informants indicated that the existing services were not met adolescents' needs due to the limited staff, some of them reported that their works did not directly focus on adolescents. It can be said that there were gaps, fragmentation and redundancy of services that lead to poor access to health care.

5.1.2 Quantitative study

In all of the analyses below of Quantitative analysis of study sample, if there are missing responses the number and percentage of missing responses are shown in the tables; in most cases, the proportion of missing responses was less than 5%. Where the proportion of the missing responses is greater than 5%, it is discussed within the appropriate section with possible explanations for the missing values. Most of the differences by gender, and by stage of adolescence (age group) were not significant by Chi-square analysis. Those differences which have a P-value of 0.05 or less will be noted in the text, in contrast, those differences which have a P-value more than 0.05 will be noted in the text as a P-value >.05. For this chapter, the descriptive analysis of study sample mostly are presented by gender. In addition, the differences by gender and by age group (early/ mid/ late adolescents) are also noted. However, most of findings in

descriptive analysis of adolescents distribution by stage of adolescence (age groups) by gender and by other variables are presented in the appendixes.

5.1.2.1 General characteristics

The results of general characteristics of study sample are presented in Table 5.4 as follows.

5.1.2.1.1 Gender and stage of adolescence (age)

There were 871 adolescents in this study. As indicated in table 5.4, there were more female respondents in this study (42.8% vs 57.2%). The age range in the sample was 11 to 22 years, with a mean age of 15.9 (SD = 2.82) and a median age of 15. The sample were divided by stage of adolescence into 3 age-groups: 1) Early adolescent (age 12-13 years); 2) Mid adolescent (age 14-17 years); 3) Late adolescent (age 18–22 years). Most of the adolescents were in the mid adolescent stage. There was a statistical difference in the distribution by stage of adolescence with fewer males in the early adolescent stage (age 12-13) and with more females in the late adolescent (age 18-22); recognizing that a P –value of 0.025 may be of borderline statistical significance (Appendix C, table C.1). However, in the view of this finding, all subsequent analyses are shown by "Gender and Stage of Adolescence (age group)" in the appendixes.

5.1.2.1.2 Marital status

Most of the respondents in both genders were Single/Never married (97.8% in the males and 92.5% in the females). A small percentage of the respondents were Ever Married (married, divorced, separated and widowed), with ever married being more common among females (7.5%) compared to males (2.2%). There were statistical differences in the distribution by Adolescents' Marital Status and Gender (P-value < .001) and by Stage of Adolescence (P-value < .001). The direction of significances shown the distribution by stage of adolescence and marital status increasing from early adolescence to late adolescence, the detail provided in appendix C table C.2.

5.1.2.1.3 Current educational status

Most of the adolescents (95.1%) were currently in school. The balance were "not in school" (including finished schooling with less than grade 6), which was used as proxy for "not in school adolescents"). Among the "not in school adolescents", there were more male respondents (6.5%) than female respondents (3.8%).

5.1.2.1.4 Educational achievement

For educational achievement, males were more likely to have higher missing response rates than females. Most of the respondents (64.9% male vs 60.3% female) were at the secondary school level, grade 7 to 12. An additional 19.7% of males and 26.5% of females respondents were at the diploma/bachelor level or more.

5.1.2.1.5 Working status

Only 18.6% of the subjects had a job (including full time and part time) with more males with a part time and full time job (25.2%) than females (13.7%). There were statistical differences (P-value < 0.001) both in the distribution by gender and adolescents' working status and by the stage of adolescence and by adolescents' working status (Appendix C, table C.3).

5.1.2.1.6 Income

Among those adolescents who had a full time or a part time job, the monthly salary range was between no salary to over 13,000 Baht (325 USD). Most (38.5%) had a salary range between 2,001–5,000 Baht (50–125 USD).

5.1.2.1.7 Home town

For most of the respondents (90.8%), their home town was Bangkok. There was statistical difference in the distribution by stage of adolescence (age) and by hometown (P-value < .001), with an decreasing percentage being Bangkokian with age. The direction of significance shown the distribution by stage of adolescence and hometown increasing from early adolescence to late adolescence, the detail provided in appendix C table C.4.

Table 5.4 : Description of demographic characteristic of adolescents

Characteristics	Male n Early/Mid/late (%)	Female n (%)	Total n (%)	Difference Male vs Female P-value	Difference adolescent P-value
Gender (n = 871)					
Male /Female	373 (42.8)	498 (57.2)	871 (100.0)		
Stage of adolescent [Age group (n = 871)]				.025	>.05
12 -13 years	73	130 (19.6)	203 (26.1)	(23.3)	
14- 17 years	198	222 (53.1)	420 (44.6)	(48.2)	
18-22 years	102	146 (27.3)	248 (29.3)	(28.5)	
Marital status (n =865)				<.001	<.001
Single	362 (97.8)	458 (92.5)	820 (94.8)		
Ever married	8 (2.2)	37 (7.5)	45 (5.2)		
Current education (n =869)				>.05	>.05
Not in school (including completed grade 6 or less)	24 (6.5)	19 (3.8)	43 (4.9)		
In school	347 (93.5)	479 (96.2)	826 (95.1)		
Education achievement (n = 825)				>.05	>.05
Primary school	53 (15.3)	63 (13.2)	116 (14.1)		
Secondary school	225 (65.0)	289 (60.3)	514 (62.3)		
Diploma/Bachelor or more	68 (19.7)	127 (26.5)	195 (23.6)		
Working status (n =865)				<.001	<.001
Working (part time, full time)	93 (25.2)	68 (13.7)	161 (18.6)		
Not working	276 (74.8)	428 (86.3)	704 (81.4)		
Income (working adolescent only) (n =161)				>.05	>.05
≤ 2,000 Baht	34 (37.4)	14 (20.0)	47 (29.2)		
2,001-5,000 Baht	23 (25.3)	39 (55.7)	62 (38.5)		
5,001-10,000 Baht	30 (33.0)	16 (22.9)	46 (28.5)		
≥ 10,001 Baht	4 (4.3)	2 (1.4)	6 (3.8)		
Hometown (n =868)				>.05	<.001
Bangkok	341 (91.7)	447 (90.1)	788 (90.8)		
Non- Bangkok	31 (8.3)	49 (9.9)	80 (9.2)		

5.1.2.2 Family

The results of adolescents and family are presented in Table 5.5 as follows.

5.1.2.2.1 Position in the family

Almost one half of the sample (48.3%) were the first child in the family and 30.8% were the second child. The mean of adolescent's position in family were 1.8 in males and 1.9 in females (SD = 1.12 and 1.17 respectively).

5.1.2.2.2 Number of people living in household

The mean number of people living in household of the sample was 5.2 (SD = 2.47), the range of the number of people living in household was 1 to 29. Most (69.3%) had one to five people in their household.

5.1.2.2.3 Parent's marital status

More than one-half of respondents(57.4%) reported that both father and mother were living in the household, another 29.0% reporting that their parents were separated, and 13.5% reported that either one or both were deceased.

5.1.2.2.4 Guardian

Over one-half of respondents (59.2%) reported living with both or either one of their parents, another 22.3% reporting living with others (including relative and non-relative), and 18.5% were living alone. The proportion of missing values was increased in the late adolescent groups, both male and female.

5.1.2.2.5 Guardian's occupation

In most cases, the proportion of missing responses of this question was less than 5%, except in the late adolescents, where the percentage of missing responses was more than 5% (13.7% in males and 9.5% in females). The respondents reported that 64.4% of their guardian's occupation were sellers, famers and employees, another 13.8% were laborers (daily basis payment), 11.4% were government employee, and 10.4% were unemployed.

5.1.2.2.6 Household Income (monthly income)

One third (34.5%) of the respondents stated that they had no idea about their monthly household income. Females were more likely to know this information than males. There were statistically significant differences in the distribution by stage of adolescence and by gender and knowing about monthly household income (P-value < .001). Not surprising, the late adolescents were more likely to know this information than the other age groups. The direction of significance of stage of adolescence in the distribution by stage of adolescence and knowing about monthly household income increased from early adolescence to late adolescence, the detail provided in appendix C table C.5. In addition, table 2, indicated that 26.2% of the respodents reported that their household monthly income ranged from 5,001 to 10, 000 Baht (125–200 USD), another 14.9% were less than 5,000 Baht (less than 125 USD).

5.1.2.2.7 Household expenses

Almost one fourth (23.6%) of the respondents stated that they had no idea about the household expenses. Not surprising that late adolescent more likely to know about household expenses than other groups. There was a statistical difference in the distribution by stage of adolescent and knowing about household expenses (P-value = .007). The direction of significance of stage of adolescence in the distribution by stage of adolescence and knowing about monthly household expenses increased from early adolescence to late adolescence, the detail provided in appendix C table C.6. An additional, 27.1% of the sample reporting "just enough for their household expenses", another 26.1% reporting "sometime not enough".

Table 5.5 : Quantitative data of study samples and family

Characteristics	Male n (%)	Female n (%)	Total n (%)	Difference Male vs Female P-value	Difference Early/Mid/late adolescent P-value
Position in the family (n =870)				>.05	>.05
First child	188 (50.4)	232 (46.7)	420 (48.3)		
Second child	104 (27.9)	164 (33.0)	268 (30.8)		
Third child or more	81 (21.7)	101 (20.3)	182 (20.9)		
Number of people in the household (n =871)				>.05	>.05
1-5 persons	266 (71.3)	338 (67.9)	604 (69.3)		
6-10 persons	95 (25.5)	140 (28.1)	235 (27.0)		
> 10 persons	12 (3.2)	20 (4.0)	32 (3.7)		
Parent's marital status (n =871)				>.05	>.05
Two parents in household	208 (55.8)	292 (58.6)	500 (57.4)		
Separated	118 (31.6)	135 (27.1)	253 (29.0)		
Either one or both deceased	47 (12.6)	71 (14.3)	118 (13.6)		
Guardian (n =825)				>.05	>.05
Biological parent	203 (58.7)	285 (60.1)	488 (59.2)		
Other people	88 (25.1)	96 (20.3)	184 (22.3)		
Self	60 (17.1)	93 (19.6)	153 (18.5)		
Guardians' occupation (n =839)				>.05	>.05
Labor	39 (11.0)	77 (15.9)	116 (13.8)		
Seller, farmer, employee	242 (68.0)	298 (61.7)	540 (64.4)		
Government employee	43 (12.0)	53 (11.0)	96 (11.4)		
Unemployed	32 (9.0)	55 (11.4)	87 (10.4)		
Household income (n =866)				<.001	<.001
Known	231 (62.5)	336 (67.7)	567 (65.5)		
Don't known	139 (37.6)	160 (32.3)	299 (34.5)		
Known about household income (n = 567)				>.05	>.05
≤ 5,000 Baht	54 (14.6)	75 (15.1)	129 (14.9)		
5,001-10,000 Baht	85 (23.0)	142 (28.9)	227 (26.2)		
10,001-15,000 Baht	61 (16.4)	62 (12.5)	123 (14.4)		
15,001-20,000 Baht	14 (3.8)	23 (4.6)	37 (4.3)		
≥ 20,000 Baht	17 (4.6)	34 (6.9)	51 (5.9)		
Household expense (n =871)				>.05	.007
Known	275 (76.4)	374 (65.1)	649 (74.5)		
Don't known	98 (23.6)	124 (24.9)	222 (25.5)		

2.1.2.2.8 Family relationships

In term of family relationships, there were five questions: A) loving and caring of family; B) getting along with family; C) consult with parent/relative when they had problems; D) having things to do with family; E) quarrel with family. These questions were used as tools for the preliminary assessment of family relationships. The response choice of the family relationship scales range from 0 to 4 (range from not at all, none or less, sometime or occasionally and most of the time). In the view of these findings, all subsequent analyses are shown by "Gender and Stage of Adolescence (age group)" in appendixes C table C.7A-C.7F. However, the results of each question were summarized as the following:

A) Loving and caring of the family

Most of repondents reported that the loving and caring of their family was very high or fair (49.0%, 44.9% respectively). Conversely, only few percentage reporting "none or less".

B) Getting along with family

Most (42.6%) of repondents stated that they had got along with family most of the time. In contrast, only few percentage reporting "not at all".

C) Consult with parent/relative when they had problems

Most of repondents professed that they consulted with parent/relative when they had problem sometime or occationally (36.7%, 31.7% respectively). Conversely, only few percentage reporting "none or less".

D) Having things to do with family

One half of the subjects reported having things to do with family sometime. An additional 13.5% of them indicated that they had done nothing with family.

E) Quarrel with family

One half of the respondents professed that they had quarreled with family somtime. Conversely, only few percentage of subjects reporting "most of the time".

F) Coefficient of Family Relationships

To obtain the level of family relationships scores, the scores on the five above questions were combined. The Mean and the Standard Deviation (mean = 11.0 and ± SD = 2.8) then divided into three levels. The three levels are included 1) Poor level (2-8 scores); 2) Moderate level (9–13 scores); 3) High level (14 scores or more). The results revealed that over one half (59.9%) of respondents indicated having "moderate" family relationships. Females were more likely than males to have good relationships with family. There was no statistical difference in the distribution of the level of family relationships by gender or by stage of adolescence (age). However, there was statistical difference in the distribution of the level of family relationships and by gender within the late adolescent group; P-value = .001. The direction of significance in Late adolescent shown the distribution by stage of adolescence and by family relationship (moderate and high) increasing from early adolescence to late adolescence.

Table 5.6 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (Age), by Gender and the Level of Family Relationships

Family relationships	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Poor	13 (17.7)	39 (9.6)	31 (30.4)	83 (22.3)	26 (20.0)	35 (15.9)	20 (13.7)	81 (16.2)	39 (19.3)	74 (17.6)	51 (20.4)	164 (18.8)
Moderate	49 (67.1)	111 (56.0)	59 (57.8)	219 (58.6)	73 (56.2)	141 (63.6)	89 (61.0)	303 (60.8)	122 (60.1)	252 (60.1)	148 (59.7)	522 (59.9)
High	11 (15.0)	48 (24.2)	12 (11.8)	71 (19.0)	31 (23.8)	46 (20.8)	37 (25.3)	114 (22.8)	42 (20.6)	94 (22.5)	49 (19.7)	185 (21.3)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

Difference: Males vs Females in Late Adolescents P-value = .001

5.1.2.3 Peer

The results related adolescents and peer are presented in table 5.7, 5.8 and 5.9 as follows. Six questions were asked study samples about peers of including: 1) having close boy/girl friend; 2) satisfaction of peer relationships; 3) getting along with friend; 4) consult with friend when they had problem; 5) having things to do with friend; 6) quarrel with friend.

5.1.2.3.1 Having close boy/girl friend

Not surprising, the percetage of having close boy/girl friend increased with age. There was statistical difference in the distribution of having close boy/girl friend and stage of adolescence (age) at a P-value < .001. The direction of significance of stage of adolescence in the distribution by having close boy/girl friend and by stage of adolescence increased from early adolescence to late adolescence, the detail provided in appendix C table C.8.

However, there was no statistical difference in the distribution of having close boy/girl friend by gender and by gender in each age group.

Table 5.7 : Having close boy/girl friend by gender

Characteristics	Male n (%)	Female n (%)	Total n (%)	Difference Male vs Female P-value	Difference Early/Mid/late adolescent P-value
Having close boy/girl friend (n = 871)				>.05	<.001
Yes	121 (32.4)	183 (36.7)	304 (34.9)		
No	252 (67.6)	315 (63.3)	567 (65.1)		

5.1.2.3.2 Peer Relationships

In term of peer relationships, five of six from above questions were used as a tool for preliminary assessment of peer relationships (excluding question regarding to "having close boy/girl friend"). The response choice of the peer relationship scales range from 0 to 4 (range from not at all, none or less, sometime or occasionally and most of the time). In the view of these findings, all subsequent analyses are shown by "Gender and Stage of Adolescence (age group)" in appendixes C table C.9A-C.9F. However, the results of each question were summarized as the following:

A) Satisfaction of peer relationships

Almost one half of the respondents stated that they were satisfied with their peer relationships.

B) Getting Along with Friend

In term of getting along with friend, over one half (55.3%) of repondents reported having get along with friend "most of the time". In contrast, only few percentage reporting "not at all".

C) Consult with friend when they had problem

Most of repondents professed that they had been consulted with friend when they had problems "sometime or occasionally" (37.7% , 33.8% respectively). Females were more likely than males to consult with friend when they had a problem. There was a statistical difference in the distribution of the consultation with friend when they have problems and by gender at a P-value <.001.

D) Having things to do with friend

Most of the respondents reported having things to do with friend sometime or occationally (35.8%, 33.6% respectively). An additional 11.5% of them stated that they had nothing to do with friend at all.

E) Quarrel with friend

One half of the respondents professed that they had quarrel with friend somtime. Conversely, only few percentage reporting "most of the time". Late adolescent group was less likely than younger group to quarrel with friend. There was statistical difference in the distribution of the quarrel with friend and by stage of adolescence at a P-value = .001

F) Coeffecient of Peer Relationships

To obtain an overall peer relationship score, the scores of the following 5 questions: A) satisfaction of peer relationships; B)getting along with friend; C)consult with friend when they had problem; D) having things to do with friend; E) quarrel with friend were combined. The minimum the peer relationship scores was 2.0 and the maximum scores was 18.0. The Mean and the Standard Deviation was 12.0 and 3.0. For the entire, these scores were divided into three level: 1) Poor level (scores = 2-9); 2) Moderate level (scores = 10–14); 3) scores = High level (15 or more).

According to the calculation, most (66.2%) of the respondents indicated their peer relationhips were "moderate". Late adolescents were more likely than early or mid adolescents to have poor relationships with peer. There was a statistical difference in the distribution of the level of peer relationships by stage of adolescence (age) at a P-value <.001. In contrast, there was no satistical difference in the distribution of the level of peer relationships and by gender. However, within the early adolescents group, There was a statistical difference in the distribution of the level of peer relationships by gender at a P-value = .003. (table 5.8)

Table 5.8 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by the Level of Peer Relationships

Peer relationships	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Poor	14 (19.1)	28 (14.1)	28 (27.3)	70 (18.7)	20 (15.3)	25 (11.3)	30 (20.6)	75 (15.0)	34 (16.7)	53 (12.7)	58 (23.4)	145 (16.6)
Moderate	57 (78.1)	131 (66.3)	62 (60.8)	250 (67.0)	84 (64.5)	146 (65.9)	97 (66.5)	327 (65.6)	141 (69.4)	277 (66.0)	159 (64.1)	577 (66.2)
High	2 (2.7)	39 (19.7)	12 (11.8)	53 (14.2)	26 (20.0)	51 (23.0)	19 (13.1)	96 (19.2)	28 (13.8)	90 (21.5)	31 (12.5)	149 (17.2)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

Difference: Early/Mid/Late Adolescents P value < .001

Difference: Males vs Females in Early Adolescents P value = .003

5.1.2.3.3 Family Relationships vs Peer Relationships

There was a statistical difference in the distribution of the level of peer relationships and by family relationships at a P-value < .001.

Table 5.9 : Decriptive Analysis of Adolescents: Distribution by the Level of Peer Relationships and Family Relationships

Level of peer relationships	Level of Poor	Family Moderate	Relationships High	Total
Poor	53 (2.3)	75 (14.3)	17 (9.2)	145 (16.0)
Moderate	96 (58.5)	358 (68.6)	123 (66.5)	577 (66.3)
High	15 (9.2)	89 (17.1)	45 (24.3)	149 (17.1)
Total	164 (100.0)	522 (100.0)	185 (100.0)	871 (100.0)

Difference: the level of peer relationships vs family relationships P-value < .001.

5.2 Accessibility and their Determinants

This part are presented the findings of adolescent accessibility to health services and their determinants both a univariate and a multivariate analysis. The following subsections have been included: 1) Introduction: health cards and adolescents; 2) Geographic accessibility; 3) Affordability; 4) Availability; and 5) Acceptability. The results were mostly presented by gender and stage of adolescence. To follow the research question # 2 "What are the determinants of accessibility of services in terms of geographic accessibility, availability, affordability and acceptability of adolescent health services between male and female adolescents and in each stage of adolescence (age)?", the results are mostly presented by gender and stage of adolescence. Most of the differences by gender, and by stage of adolescence (age group) were not significant by Chi-square analysis. Those differences which have a P-value of .05 or less will be noted in the text. In terms of accessibility to health serviecs.

5.2.1 Introduction: Health cards and adolescents

This part comprised of 2 issues including having an health card, and health card utilization

Having Health Card

Most (68.4%) of the subjects reported having health cards. However, the mid adolescents of both genders were less likely to have health card compared other age groups.

Table 5.10 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by Having health card

Having health card	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Yes	51 (69.9)	128 (64.6)	72 (70.6)	251 (67.3)	90 (69.2)	150 (68.2)	103 (70.5)	343 (69.2)	141 (69.5)	278 (66.5)	175 (70.6)	594 (68.4)
No	22 (30.1)	70 (35.4)	30 (29.4)	122 (32.7)	40 (30.8)	70 (31.8)	43 (29.5)	153 (30.8)	62 (30.5)	140 (33.5)	73 (29.4)	275 (31.6)
Missing	0	0	0	0	0	2	0	2	0	2	0	2
%missing	(0)	(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0.4)	(0)	(0.2)

In terms of current education status and having an health card, the results revealed that there was very few differences in having health an card between adolescents who were "in school" and those who were "not in school". It can be said that there was no difference between current education status and having health card.

Table 5.11 : Descriptive Analysis of Adolescents: Distribution by Current Educational Education and by Having Health Card

Having health card	Current education status		Total
	In school	Not in school	
Yes	127 (67.2)	465 (68.6)	592 (68.3)
No	62 (32.8)	213 (31.4)	275 (31.7)
Total	189 (100.0)	678 (100.0)	867 (100.0)

Category of health card

Among those who reported having health card, most (76.8%) of them indicated that their health cards were the "30 Baht health card".

Table 5.12 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by 30 Baht health card vs other cards

Category of health card	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
30 Baht health card	42 (84.0)	101 (81.5)	48 (67.6)	191 (78.0)	69 (77.5)	115 (78.8)	73 (70.9)	257 (76.0)	111 (79.9)	216 (80.0)	121 (69.5)	448 (76.8)
Others cards	8 (16.0)	23 (18.5)	23 (32.4)	54 (22.0)	20 (22.5)	31 (21.2)	30 (29.1)	81 (24.0)	28 (20.1)	54 (20.0)	53 (30.5)	135 (23.2)
Total	50 (100.0)	124 (100.0)	71 (100.0)	245 (100.0)	89 (100.0)	146 (100.0)	103 (100.0)	338 (100.0)	139 (100.0)	270 (100.0)	174 (100.0)	583 (100.0)

Health card utilization

Among those who indicated that having health card, only one half (50.8%) of them reported that they had used their health card. Males were more likely than females to utilize the health cards, the proportion decreased with age.

Table 5.13 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by Health card utilization

Health card utilization	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Yes	31	67	38	136	45	70	49	164	76	137	87	300
	(60.8)	(52.8)	(51.4)	(54.0)	(51.1)	(47.0)	(48.0)	(48.4)	(54.7)	(49.6)	(49.4)	(50.8)
No	20	60	36	116	43	79	53	175	63	139	89	291
	(39.2)	(47.2)	(48.6)	(46.0)	(48.9)	(53.0)	(52.0)	(51.6)	(45.3)	(50.4)	(50.6)	(49.2)
Total	51	127	74	252	88	149	102	339	139	276	176	591
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Category of reason/diseases for health card utilization

Among those who indicated that they had been used health card, most (70.7%) of them reported they had been used the card for "Common Cold".

Table 5.14 : Descriptive Analysis of Adolescents: Distribution by Category of reasons/diseases for health card utilization and by Gender

Reason/diseases for using health card	Gender		Total
	Male	Female	
1 Common cold	81 (64.8)	112 (75.7)	193 (70.7)
2 Accident	22 17.6)	7 4.7)	29 10.6)
3 Headache, abdominal pain	8 (6.4)	5 (3.4)	13 (4.8)
4 Minor sickness	5 (4.0)	2 (1.4)	7 (2.6)
5 Others	9 (7.2)	22 (14.8)	31 (11.3)
Total	125 (100.0)	148 (100.0)	273 (100.0)

5.2.2 Accessibility

In term of accessibility to health services for this study, as mentioned earlier, there were 4 dimensions including: a) Geographic accessibility; b) Availability; c) Affordability; and d) Acceptability (Penchariky, 2001 and Lee, 2001).

Geographic accessibility: The geographic accessibility was assessed using six questions; these were: 1) The existing health services in the community; 2) Place for visit when they had faced with health problem; 3) Travel time from/home to health facilities; 4) Place and the duration for the latest visit for their health problem in certain period of time (e.g., within 1 month ago, 2 months ago); 5) Time spend for the last visit of the health facility; and 6) Rating of the convenience for the utilization of the last visit.

5.2.2.1 Geographic accessibility

The geographic accessibility was assessed using six questions; these were: 1) The existing health services in the community; 2) Place for visit when they had faced with health problem; 3) Travel time from/home to health facilities; 4) Place and the duration for the latest visit for their health problem in certain period of time (e.g., within 1 month ago, 2 months ago); 5) Time spend for the last visit of the health facility; and 6) Rating of the convenience for the utilization of the last visit.

The existing health services in the community

The health services in the community were divided into 2 types including government section and private sector. The adolescents indicated that the availability of health services both government and private sector in the community were 1) Drug Stores (84.8%), 2) Health Center 63.3% and 3) Private Clinic (55.5%). Private health service sectors were more likely to be available in the community than public health services sectors in their opinion.

Table 5.15 : The existing health services in the community

	Existing Health Facilities in the community (n = 869)	n	%
	Government sectors		
1	Health center	550	63.3
2	Fitness park	454	52.2
3	Government hospital	236	27.2
4	Hotline consultation	91	10.5
	Private sectors		
1	Drug stores	737	84.8
2	Private clinic	482	55.5
3	Private hospital	262	30.1
4	Others	16	1.8

In term of place to visit when the subjects faced with health problems among public and private sector, most (70.1%) of the respondents reported that they visited "private sector".

Table 5.16 : Descriptive Analysis of Adolescents: Distribution by Gender, by Stage of Adolescence and by Place for visit when they had faced with health problems (answer more than one)

Health facility	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Government Sector	31 (30.7)	54 (29.7)	41 (30.4)	126 (30.1)	37 (31.9)	53 (31.2)	37 (26.2)	127 (29.7)	68 (31.3)	107 (30.4)	78 (28.3)	253 (29.9)
Private sector /others	70 (69.3)	128 (70.3)	94 (69.6)	292 (69.6)	79 (68.1)	117 (68.8)	104 (73.8)	300 (70.3)	149 (68.7)	245 (69.6)	198 (71.7)	592 (70.1)
Total	101 (100.0)	182 (100.0)	135 (100.0)	418 (100.0)	116 (100.0)	170 (100.0)	141 (100.0)	427 (100.0)	217 (100.0)	352 (100.0)	276 (100.0)	845 (100.0)

Travel time from home to health facilities

The majority (89.5%) of the respondents reported that the travel time from home to health facility was less than one hour.

Table 5.17 : Descriptive Analysis of Adolescents: Distribution by Gender, by Stage of Adolescence and by Travel time from/home to health facilities

Travel time	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
< 1 hour	65	179	91	335	112	194	127	433	177	373	218	768
	(90.3)	(92.7)	(90.1)	(91.5)	(87.5)	(88.6)	(87.6)	(88.0)	(88.5)	(90.5)	(88.6)	(89.5)
> 1 hour	7	14	10	31	16	25	18	59	23	39	28	90
	(9.7)	(7.3)	(9.9)	(8.5)	(12.5)	(11.4)	(12.4)	(12.0)	(11.5)	(9.5)	(11.4)	(10.5)
Total	72 (100.0)	193 (100.0)	101 (100.0)	366 (100.0)	128 (100.0)	219 (100.0)	145 (100.0)	492 (100.0)	200 (100.0)	412 (100.0)	246 (100.0)	858 (100.0)
Missing	1	5	1	7	2	3	1	6	3	8	6	13
% missing	(1)	(2.1)	(1)	(2)	(1.8)	(1.8)	(1.2)	(1.2)	(2.2)	(2)	(2.1)	(2.5)

The latest visit health facilities (within 2 months) As indicated in table, only 22.3 % visited health facilities within last 2 months. Males were less likely to visit health facilities than females. Moreover, late adolescents also were less likely to visit health facilities than others.

Table 5.18 : The latest visit health facilities within 2 months by gender and stage of adolescents

	Males		Females		Early		Mid		Late		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Not visit	180	82.2	224	74.4	96	76.2	186	76.9	122	80.3	404	77.7
Visit	39	17.8	77	25.6	30	23.8	56	23.1	30	19.7	116	22.3
Total	219	100.0	301	100.0	126	100.0	242	100.0	152	100.0	520	100.0

5.2.2.2 Affordability

In terms of affordability, these were 4 questions; 1) The opinion on total cost for health care service; 2) Feeling that health provider always prescribes expensive drugs; 3) The opinion on cost for consultation; and 4) Person who paid for health care cost. The results were as below.

The opinion on total cost for health care service

Most (65.0%) of respondents reported that their opinion on total cost of health care services was "moderate" No gender difference was found.

Table 5.19 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by the opinion on total cost for health care service

Health care cost	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Expensive	14	29	24	67	16	32	35	83	30	61	59	150
	(19.2)	(14.7)	(23.5)	(18.0)	(12.5)	(14.4)	(24.3)	(16.8)	(14.9)	(14.5)	(24.0)	(17.4)
Moderate	48	134	59	241	84	161	77	322	132	295	136	563
	(65.8)	(68.0)	(57.8)	(64.8)	(65.6)	(72.5)	(53.5)	(65.2)	(65.7)	(70.4)	(55.3)	(65.0)
Cheap	11	34	19	64	28	29	32	89	39	63	51	153
	(15.0)	(17.3)	(18.6)	(17.2)	(21.9)	(13.1)	(22.3)	(18.0)	(19.4)	(15.1)	(20.7)	(17.7)
Total	73	197	102	372	128	222	144	494	201	419	246	866
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing	0	1	0	1	2	0	2	4	2	1	2	5
%missing	(0)	(0)	(0)	(0)	(1.5)	(0)	(1.5)	(0)	(1)	(0)	(1)	(0)

Feeling that health provider always prescribes expensive drugs

In terms of their feeling about health provider prescribes expensive drugs, most (62.6%) professed that they were not sure about this matter. Few (6.8%) of the respondents reported they felt that health provider prescribes expensive drugs.

Moreover, males were more likely to have feeling that health provider prescribes expensive drugs than females. Additional, there was statistical difference in the distribution of gender , and by feeling about health provider prescribes expensive drugs at a P-value = .002.

Table 5.20 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by the feeling that health provider always prescribes expensive drugs

Feeling that health provider prescribes expensive drugs	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Yes	9	20	9	38	5	12	4	21	14	32	13	59
	(12.3)	(10.1)	(8.9)	(10.2)	(3.9)	(5.4)	(2.7)	(4.2)	(7.0)	(7.6)	(5.3)	(6.8)
No	16	56	36	108	44	61	53	158	60	117	89	266
	(21.9)	(28.3)	(35.6)	(29.0)	(34.4)	(27.5)	(36.3)	(31.9)	(29.9)	(27.9)	(36.0)	(30.6)
Not sure	48	122	56	226	79	149	89	317	127	271	145	543
	(65.8)	(61.6)	(55.4)	(60.8)	(61.7)	(67.1)	(61.0)	(63.9)	(63.2)	(64.5)	(58.7)	(62.6)
Total	73	198	101	372	128	222	146	496	201	420	247	868
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing			1	1	2	0	0	2	2	0	1	3
%missing			0	0	1.5			0	1		0	0

Difference Males vs Females : P-value = .002

Person who paid for health care cost

Over one half (55.5%) of the adolescents reporting the person who paid for health care cost were "parents". Additional, there was decreased of the health care cost paid by parent with age. Moreover, there was a statistical difference in the distribution of stage of adolescence, and by person who paid for health care cost at a P-value < .001.

Although the 30 Baht health card scheme was introduced at that period of time, only 26.5% of responses stated that the health care cost were paid by this health card.

Table 5.21 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by the Person who paid for health care cost

Person who paid for health care cost	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Self	2	8	25	35	3	14	38	55	5	22	63	90
	(2.8)	(4.0)	(25.0)	(9.5)	(2.3)	(6.4)	(26.2)	(11.2)	(2.5)	(5.3)	(25.7)	(10.5)
Parent	48	128	38	214	83	122	59	264	131	250	97	478
	(67.6)	(64.6)	(38.0)	(58.0)	(64.3)	(56.0)	(40.7)	(53.7)	(65.5)	(60.1)	(39.6)	(55.5)
Paid by 30 Baht Card	19	48	26	93	36	58	41	135	55	106	67	228
	(26.8)	(24.2)	(26.0)	(25.2)	(27.9)	(26.6)	(28.3)	(27.4)	(27.5)	(25.5)	(27.3)	(26.5)
By card and parent	2	14	11	27	7	24	7	38	9	38	18	65
	(2.8)	(7.1)	(11.0)	(7.3)	(5.4)	(11.0)	(4.8)	(7.7)	(4.5)	(9.1)	(7.3)	(7.5)
Total	71	198	100	369	129	218	145	492	200	416	245	861
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing	2	0	2	4	1	4	1	6	3	4	3	10
%missing	(2.7)	(0)	(2)	(0.5)	(0.8)	(2)	(0.7)	(1.2)	(1.5)	(1)	(1.5)	(1.1)

Difference : Early/Mid/Late Adolescents P-value < .001

5.2.2.3 Availability

Four questions were developed to measure the availability of adolescents' health services; these were: 1) The opinion on time convenience for utilizing health services; 2) The opinion on the waiting time; 3) The opinion on time to meet the doctor; and 4) The opinion about doctor/health staff always prescribe unavailable drugs at the health facility.

The opinion on time convenience for utilizing health services

Most (70.9%) of the respondents reported that it was "convenience" for them on utilizing health services. Among those who stated that the time were not-convenience time for utilizing health services, it shown the increasing with age.

Table 5. 22 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by The opinion on time convenience for utilizing health services

Opinion on time convenient for utilizing health services	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Very convenient	14	31	7	52	17	25	15	57	31	56	22	109
	(19.2)	(15.7)	(6.9)	(13.9)	(13.2)	(11.3)	(10.3)	(11.5)	(15.3)	(13.3)	(8.9)	(12.5)
Convenient	45	141	70	256	97	158	106	361	142	299	176	617
	(61.6)	(71.2)	(68.6)	(68.6)	(75.2)	(71.2)	(72.6)	(72.6)	(70.3)	(71.2)	(71.0)	(70.9)
Not convenient	14	26	25	65	15	39	25	79	29	65	50	144
	(19.1)	(13.1)	(24.5)	(17.4)	(11.7)	(17.6)	(17.1)	(15.9)	(14.4)	(15.5)	(20.1)	(16.6)
Total	73	198	102	373	129	222	146	497	202	420	248	870
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing	0	0	0	0	1	0	0	0	1	0	0	1
%missing	(0)	(0)	(0)	(0)	(0.8)	(0)	(0)	(0)	(0.2)	(0)	(0)	(0.1)

The opinion on the waiting time

In term of the waiting time for health service utilization, over one half (56.4%) of adolescents reporting the waiting time was "less than 30 minutes". Few (8.1%) were more than 1 hour.

Table 5.23 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by The opinion on the waiting time

Opinion on the waiting time	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late a	Total
< 30 minutes	40	123	54	217	77	119	74	270	117	242	128	487
	(54.8)	(62.4)	(54.0)	(58.6)	(60.6)	(53.6)	(51.0)	(54.7)	(58.5)	(57.8)	(52.2)	(56.4)
30- 59 minutes	26	60	35	121	42	84	60	186	68	144	95	307
	(35.6)	(30.5)	(35.0)	(32.7)	33.1)	(37.8)	(1.4)	(37.7)	(34.0)	(34.4)	(38.8)	(35.5)
> 1 hour	7	14	11	32	8	19	11	38	15	33	22	70
	(9.6)	(7.1)	(11.0)	(8.6)	(6.3)	(8.6)	(7.6)	(7.7)	(7.5)	(7.9)	(9.0)	(8.1)
Total	73	197	100	370	127	222	145	494	200	419	245	864
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing	0	1	2	3	3	0	1	4	3	1	3	7
%missing	(0)	(0)	(2)	(0.8)	(2)	(0)	(1)	(0.8)	(1.5)	(0.2)	(1.5)	(0.8)

The opinion on time to meet the doctor

Most (44.1%) of adolescents reported that they had a chance met the doctor "sometimes". Additional, 25.1% of the respondents stated that they had met doctor "all the time". Few (9.0%) of them stated that they had never met the doctor.

Table 5.24 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by The opinion on time to meet the doctor

Opinion on meeting with doctor	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late a	Total
All the time	16	46	28	90	32	55	41	128	48	101	69	218
	(21.9)	(23.4)	(27.5)	(24.2)	(25.0)	(24.8)	(28.3)	(25.9)	(23.9)	(24.1)	(27.9)	25.1)
Quite often	18	35	16	69	32	54	34	120	50	89	50	189
	(24.7)	(17.8)	(15.7)	(18.5)	(25.0)	(24.3)	(23.4)	(24.2)	(24.9)	(21.2)	(20.2)	(21.8)
Sometime	31	98	49	178	50	93	61	204	81	191	110	382
	42.5)	49.7)	48.0)	47.8)	39.1)	41.9)	42.1)	41.2)	40.3)	45.6)	44.5)	44.1)
Never	8	18	9	35	14	20	9	43	22	38	18	78
	(11.0)	(9.1)	(8.8)	(9.4)	(10.9)	(9.0)	(6.2)	(8.7)	(10.9)	(9.1)	(7.3)	(9.0)
Total	73	197	102	372	128	222	145	495	201	419	247	867
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing	0	1	0	1	2	0	1	3	2	1	1	4
%missing	(0)	(1)	(0)	(0.3)	(1.5)	(0)	(1)	(0.6)	(1)	(0.2)	(0.4)	(0.5)

The opinion about doctor/health staff always prescribe unavailable drugs at the health facility

More than one half (54.0%) of the respondents reported that they were "not sure" whether or not doctor/health staff always prescribe unavailable drugs at the health facility for them. Furthermore, males were more likely to have an opinion about doctor/health personal always prescribe drugs that not available in the health facility than females, this decreased with age in both genders. Moreover, there were statistical differences both in the distribution of gender and stage of adolescence and by the opinion about doctor/health staff always prescribe drugs that not available in the health facility at a P-value = .002 and P-value < .001 respectively.

Table 5.25 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by the opinion about doctor/health staff always prescribe unavailable drugs at the health facility

Opinion on prescription unavailable drugs	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Yes	12	29	11	52	10	13	2	25	22	42	13	77
	(16.4)	(14.6)	(10.8)	(13.9)	(7.8)	(5.9)	(1.4)	(5.0)	(10.9)	(10.0)	5.2)	(8.9)
No	21	59	41	121	47	74	81	202	68	133	122	323
	(28.8)	(29.8)	(40.2)	(32.4)	(36.7)	(33.3)	(55.5)	(40.7)	(33.8)	(31.7)	(49.2)	(37.2)
Not sure	40	110	50	200	71	135	63	269	111	245	113	469
	(54.8)	(55.6)	(49.0)	(53.6)	(55.5)	(60.8)	(43.2)	(54.2)	(55.2)	(58.3)	(45.6)	(54.0)
Total	73	198	102	373	128	222	146	496	201	420	248	869
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing	0	0	0	0	2	0	0	2	2	0	0	2
%missing	(0)	(0)	(0)	(0)	(1.5)	(0)	(0)	(0)	(1)	(0)	(0)	(0)

Difference : Males vs Females P-value = .002

Difference : Early/Mid/Late Adolescents P-value < .001

5.2.2.4 Acceptability

In term of acceptability, six questions were asked to determine for the assessment of the level of acceptability ,these included, 1) The opinion on receiving health information; 2) The satisfaction on the meeting time with the doctor/health staff; 3) The Satisfaction on the privacy of the physical examination room; 4) The Satisfaction on the reception of health staff; 5) The opinion towards care and treatment; and 6) The opinion towards quality of care. The results revealed the summation of the level of the acceptability, the above six questions were combined for the Mean and the Standard Deviation (mean = 12.8, SD = $\pm$ 3.37), then divided into 3 levels including 1) Poor level(0 -9 scores), 2) Moderate level (10-16 scores), and 3) High level (17 scores or more). The majority (75.1%) of reporting "moderate" satisfaction about health services. Late adolescent of both genders were less likely to be satisfied with the health services compared to the other groups. There was a statistical difference in the distribution of stage of adolescence and by the level satisfaction towards health services at a P-value = .007. Moreover, among early adolescent group, there was also a

statistical difference in the distribution of stage of adolescence and by the level satisfaction towards health services at a P value < .016.

Table 5.26 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by the Level of Satisfaction towards health services

Satisfaction toward health services	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Poor	8	22	25	55	10	27	23	60	18	49	48	115
	(11.0)	(11.1)	(24.5)	(14.7)	(7.7)	(12.2)	(15.8)	(12.0)	(8.9)	(11.7)	(19.4)	(13.2)
Moderate	55	150	70	275	100	175	104	379	155	325	174	654
	(75.3)	(75.8)	(68.6)	(73.7)	(76.9)	(78.8)	(71.2)	(76.1)	(76.4)	(77.4)	(70.2)	(75.1)
High	10	26	7	43	20	20	19	59	30	46	26	102
	(13.7)	(13.1)	(6.9)	(11.5)	(15.4)	(9.0)	(13.0)	(11.8)	(14.8)	(11.0)	(10.5)	(11.7)
Total	73	198	102	373	130	222	146	498	203	420	248	871
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Difference Early/Mid/Late Adolescents P-value = .007

Difference Early/Mid/Late Adolescents in Males P-value = .016

5.2.2.5 Conclusion

Most (68.4%) of adolescents reported having health cards, of those, most (76.8%) reporting having "30 Baht health card". However, only one half (50.8%) of had been used the health card. Most (70.1%) of adolescents visited "private sector" for their health problems. Most (89.5%) of the respondents reported that the travel time from home to health facility was less than one hour. Only 22.3% visited health facilities within last 2 months. Males were less likely to visit health facilities than females. Moreover, late adolescents also were less likely to visit health facilities than others. Most (65.0%) of respondents reported that their opinion on total cost of health care services was "moderate". Males were more likely to have feeling that health provider prescribes expensive drugs than females (P-value = .002). Over one half (55.5%) of the adolescents reporting "parents" paid for their health care cost, there was decreased of the health care cost paid by parent with age. There was a statistical difference among age group and person who paid for health care cost (P-value < .001). Most (70.9%) of the subjects reporting the time was "convenience" for utilizing health services. Among those who stated that the time were not-convenience time for utilizing health services, it shown the increasing with age. Over one half (56.4%) of adolescents reporting the

"moderate" satisfaction about health services, age group difference were found (P-value = .007). Among males, there was a statistical difference among age group and the level satisfaction towards health services (P-value < .016).

5.2.3 Determinants: Univariate Analysis

For this study, the term of "accessibility to health services" referred to "utilization" (Robert, 2001). Additionally, health accessibility was defined as "a utilization of health services including government & private sectors and NGOs", excluding "do noting" and "visit drug stores". In order to answer research question # 3: "*what are the differences in term of services needs and utilization of health services between male and female adolescents and in each sub-group of adolescence?*" A univariate analysis was done by using the Chi-square test to analyse the differences of utilization. The statistically significant level was set up at P-value < .05. However, for some variables, there were small number of responses (less than 5) for the statistical analysis. The differences in the 31 independent variables including 1) gender, 2) age, 3) adolescent's marital status, 4) position in the family, 5) current education, 6) household expenses, 7) adolescents' working status, education achievement, 8) Level of QoL, 9) parents' marital status, 10) getting along with family, 11) quarrel with family, 12) consult friend when having problems, 13) total cost health care cost, 14) cost for consultation fee, 15) feeling that health personnel prescribe expensive drugs, 16) time convenience for health services utilization, 17) receiving health information, 18) satisfaction with duration to meet with doctor, 19) satisfaction with the room privacy for health examination, 20) satisfaction with reception at health facilities, 21) rating about health care services provided by health facility, 22) rating quality of health care services, 23) how often that adolescent meet the doctor at the health facility, 24) known about health services in the community, 25) level of depression, 26) having chronic diseases, 27) having sexual activity, 28) waiting time of health care, 29) health personal always prescribes unavailable drugs, 30) having health care, and 31) guardian's occupation were computed to measure the difference with the accessibility. The results are presented in table 5.27.

Table 5.27 : The difference between potential factors that related to accessibility by gender and by stage of adolescence

Itimes	Gender			Stage of adolescence		
	M n = 373 P-value	F n = 498 P-value	Total n = 871 P-value	Early n = 203 P-value	Mid n = 420 P-value	Late n = 248 P-value
Gender	-	-	.433	.425	.639	.375
Age group	.788	.367	.632	-	-	-
Adolescents' marital status	.915	.347	.361	.719*	.678*	.149
Position in family	.208	.822	.731	.787*	.812	.755
Current education	.305	.411	.148	.875	.094	.545*
Household expenses	.584	.386	.310	.779	.039	.523
Adolescents' working	.767	**.018**	.166	.719*	.837	.142
Level of Qol	.682	.724	.994	.441	.624	.964
Parents' marital status	.178	.811	.469	.252	.429	.151
Family relationship	.885	.129	.196	.086*	.777	.132
Quarrel with family	.963	.232	.458	.732*	.662	.674*
Consult friend when having problems	.218	.485	.459	.425*	.655	.077
Total cost for health care	.362	.893	.803	.211*	.777	.661
Cost for consultation fee	.136	.749	.551	.114*	.213*	.298
Feeling that health provider always prescribe expensive drugs	.219	.362	.895	.713*	.904*	.977
Time convenience for health services	983	**.027**	.109	.060*	.670*	.085*
Received health information	.291	**.032**	.066	.632	.128*	.043*
Rating about health care services	.299	.069	.095	.067*	.172	.261
Rating about quality of care	.287	**.010**	**.027**	.203	.054*	.462
How often that adolescent meet the Dr.?	.342	**.005**	**.049**	.685	.680	.024*
Know about facilities in the community	262	**.015**	**.010**	**.019**	.949	**.004**
Level of depression	.518	.307	.249	.859	.585	.184
Chronic diseases*	.859*	.141*	.238*	*	*	*
Sex activity*	**.025**	.550	**.037**			
Waiting time of health care*	.644*	.221*	.299	*	*	*
Health personnel always prescribes inviolability drugs*	.448	.980*	.634	*	*	*
Having heath card*	.456	.255	.177	*	*	*
Guardians' occupation*	**.032**	.513	.211	*	*	*

Note: * the number of Expected value (responses) less than 5 for the Chi-square test

As mentioned earlier, thirty one factors were used to explore the differences in the above factors determining accessibility and utilization of adolescents. As shown in table 1, "the Adolescents' working", "Time convenience for health services', "Received health information", "Satisfaction with the reception at health facility", "Satisfaction with the reception at health facility", "Rating about quality of care", "How often that adolescent meet the Dr.?", "Known about facilities in the community", "Sex activity", "Guardians' occupation" were statistically associated (P-value .018, .027, .032, .031, .010, .005, .015, .025, and .032 respectively) in females.

In contrast, among male adolescents, there were only 2 factors: "Having sex activity" and "Guardians' occupation" were statistically associated (P-value .025, and .032 respectively).

On the other hand, "Known about facilities in the community" was statistically associated (P-value .019, .004 respectively) in early and late adolescents. Surprisingly, there was no statistically associated among 31 factors in mid adolescents. Moreover, "Rating about quality of care", "How often that adolescent meet the Dr.?", "Known about facilities in the community", "Sex activity", which were statistically associated (P-value .027, .049, .010, and .037 respectively) in all subjects.

Conclusion

In part of the differences of potential factors that related to accessibility and/or utilization of health services, the Chi-square test was adopted for statistical analysis by gender and by stage of adolescents (the statistically significant, P-value < .05). Thirty one factors were used in statistical model. The results shown that 9 factors including 1) adolescents' working status, 2) time convenience for health services utilization, 3) receiving health information services, 4) satisfaction with the reception at health facilities, 5) Rating quality of health care services, 6) how often that adolescent meet the doctor at the health facility, 7) known about health services in the community, 8) having sexual activity and 9) Guardian's occupation shown statistically associated with accessibility at p value < .05. These above nine factors will be used for multivariate analysis to answer research question # 2 (determinants of accessibility).

5.2.4 Determinants: Multivariate analysis

To answer research question # 2 "what are the determinants of accessibility, availability and acceptability of adolescent health services between male and female in each sub-group of adolescence (early age 12–13; middle age 14-17; late age 18-22)?". As previous mentioned, the definition of accessibility and inaccessibility were as follows

Accessibility = *when adolescent faced with health problems they could visit health facilities both government, private sector and NGO exclude drug stores*

Inaccessibility = *when adolescent faced with health problems they did nothing, visit drug stores and do nothing & others*

Multivariable Analysis Regression was adopted. The association between factors related to health services accessibility had been established by using Binary Logistic Model from the SPSS computer software. The finding are presented by overall, by each gender and by each stage of adolescents.

5.2.4.1 Binary Logistic Regression

Factors that were defined as health services accessibility were entered into the Binary Logistic Model as a dependent variable, the statistical association was determined as a P-value less than .05. In addition, case selected for statistical analysis by each sub group (gender, state of adolescence) were done. Fourteen potential variables including 1) Known about household expenses, 2) Adolescents' working status, 3) Convenience of time for visit health facilities, 4) Satisfaction with the reception at health facilities, 5) Received health information, 6) Dr. always prescribe unavailable drugs, 6) Satisfaction with the reception at health facilities, 7) Quality of health care, 8) Having sex activities, 9) Current education status, 10) Guardians' occupation, 11) Known about health facilities in community, 12) Age, 13) Chance to meet Dr. at health facility which most of them were related to adolescents', and 14) gender were selected as the independent variables for multivariate analysis. The binary logistic regression was used for predicted the most influencing factors that associate with accessibility. The results are shown in the table 1-6 with the Odds Ratios with the 95% Confidence Intervals and P-value.

Table 5.28 : Association between socio-economic factors and other factors that related to accessibility and health services accessibility of both genders

Factor	B	OR	95% CI for OR		P-value
			Lower	Upper	
Known about household expenses	-.359	.699	.441	1.106	.126
Adolescents' working status	.099	1.104	.590	2.064	.757
Convenience of time for visit health facilities	-.276	.759	.442	1.302	.317
Dr. always prescribe unavailable drugs	-.074	.928	.592	1.457	.747
Received health information	-.448	.639	.304	1.343	.238
Satisfaction with the reception at health facilities.	-.068	.934	.571	1.527	.785
Quality of health care	-.193	.824	.500	1.359	.449
Having sex activities	-.213	.808	.429	1.523	.510
Current education status	.104	1.110	.620	1.987	.726
Guardians' occupation	**-.667**	.513	.283	.931	**.028**
Known about health facilities in community	-.535	.586	.341	1.008	.053
Age	-.026	.974	.889	1.068	.578
Chance to meet Dr. at health facilities	**.507**	1.661	1.067	2.586	**.025**
Gender	-.078	.925	.600	1.424	.722
Constant	3.079	21.726			< .001

The Model (both genders) is

Logit (Accessibility) = 3.079 - .667 (Guardians' occupation) + .507 (Chance to meet a Doctor at health facilities)

As indicated in Table 5.28, the statistical associations were shown between access and 2 factors including "guardians' occupation" and "chance to meet Dr. at health facilities" (P-value .028 and .025 respectively).

The first, the model revealed that if "guardians' occupation" increases by 1 standardized unit, the log (odds) of access will decrease. The odd ratio for access in "guardians' occupation" is 0.513 (in comparison to 1 in the reference group). The model shown that the "guardians' occupation" contributes to decrease the access to health services.

In contrast, for the second: "chance to meet a Doctor at health facilities", the model revealed that if "chance to meet a Doctor at health facilities" increases by 1

standardized unit, the log (odds) of access will increase. The odd ratio for access in "chance to meet a Doctor at health facilities" is 1.661 (in comparison to the reference group). The model shown that the "chance to meet a Doctor at health facilities" contributes to increase the access to health services.

Table 5.29 : Association between socio-economic factors and other factors that related to accessibility and health services accessibility in <u>males</u>

Factors	B	OR	95% CI for OR		P-value
			Lower	Upper	
Known about household expenses	-.232	.793	.392	1.601	.517
Adolescents' working status	.394	1.482	.596	3.686	.397
Convenience of time for visit health facilities	.050	1.051	.427	2.589	.914
Dr. always prescribe unavailable drugs	.131	1.140	.558	2.328	.720
Received health information	-.690	.502	.140	1.798	.290
Satisfaction with the reception at health facilities.	.008	1.008	.501	2.028	.982
Quality of health care	.111	1.117	.545	2.289	.763
Having sex activities	-.810	.445	.181	1.093	.077
Current education status	-.303	.739	.324	1.682	.471
Guardians' occupation	**-1.014**	**.363**	.148	.890	**.027**
Known about health facilities in community	-.576	.562	.242	1.304	.180
Age	.043	1.044	.897	1.215	.580
Chance to meet Dr. at health facilities	.075	1.078	.546	2.126	.829
Constant	2.146	8.547			.093

The Model (in Males) is

Logit (Accessibility) = 2.149 – 1.014 (Guardians' occupation)

As indicated in Table 5.29, the statistical associations was shown between access and guardians' occupation" (P-value = .027).

The model revealed that if "guardians' occupation" increases by 1 standardized unit, the log (odds) of access will decrease. The odd ratio for access in "guardians' occupation" is 0.363 (in comparison to the reference group). The model shown that the "guardians' occupation" contributes to decrease the access to health services.

Table 5.30 : Association between socio-economic factors and other factors that related to accessibility and health services accessibility in females

Factors	B	OR	95% CI for OR		P-value
			Lower	Upper	
Known about household expenses	-.455	.634	.337	1.195	.159
Adolescents' working status	-.202	.817	.328	2.037	.664
Convenience of time for visit health facilities	-.464	.629	.313	1.264	.193
Dr. always prescribe unavailable drugs	-.188	.829	.455	1.510	.540
Received health information	-.178	.837	.324	2.161	.713
Satisfaction with the reception at health facilities.	-.191	.826	.398	1.718	.610
Quality of health care	-.370	.691	.334	1.429	.319
Having sex activities	.191	1.210	.423	3.463	.722
Current education status	.464	1.590	.632	4.001	.324
Guardians' occupation	-.316	.729	.314	1.693	.462
Known about health facilities in community	-.723	.485	.231	1.020	.057
Age	-.061	.941	.833	1.062	.322
Chance to meet Dr. at health facilities	**.861**	**2.366**	1.283	4.363	**.006**
Constant	3.508	33.376			.001

The Model (in female) is

Logit (Accessibility) = 3.508 + .861 (Chance to meet Dr. at health facilities)

As Table 5.30 shown, the strongly statistical associations were revealed between access and chance to meet Dr. at health facilities (P-value = .006).

The model revealed that if "chance to meet a Doctor at health facilities increases by 1 standardized unit, the log (odds) of access will increase. The odd ratio for access in "chance to meet a Doctor at health facilities" is 2.366 (in comparison to the reference group). The model shown that the "chance to meet a Doctor at health facilities" contributes to increase the access to health services.

Table 5.31 : Association between socio-economic factors and other factors that related to accessibility and health services accessibility in early adolescents

Factors	B	OR	95% CI for OR		P-value
			Lower	Upper	
Known about household expenses	-.091	.913	.295	2.824	.874
Convenience of time for visit health facilities	**-1.152**	**.316**	.101	.987	**.047**
Dr. always prescribe unavailable drugs	.539	1.715	.537	5.020	.384
Received health information	.847	2.332	.625	7.998	.216
Satisfaction with the reception at health facilities.	-.991	.371	.113	1.164	.088
Quality of health care	.495	1.640	.456	3.880	.602
Current education status	**-2.207**	**.110**	.015	.816	**.031**
Guardians' occupation	-1.075	2.931	. 356	10.678.	.442
Known about health facilities in community (one vs more than one places)	**-1.634**	**.195**	.062	.616	**.005**
Gender	.483	.617	.230	1.655	.338
Chance to meet Dr. at health facilities	.383	1.467	.548	3.931	.446
Constant	2.424	11.285			.002

The Model (in early adolescents) is

Logit (Accessibility) = 2.424 - 1.152 (Convenience of time for visit health facilities) - 2.207 (Current education status) - 1.634 (Known about health facilities in community)

As indicated in Table 5. 31, the statistical associations were shown between access and 3 factors including "convenience of time for visit health facilities", "current education status", and "known about health facilities in community" (P-value .047, .031 and .005 respectively).

The first, the model revealed that if "convenience of time for visit health facilities" increases by 1 standardized, unit the log (odds) of access will decrease. The odd ratio for access in "convenience of time for visit health facilities" is 0.316 (in comparison to the reference group). The model shown that the "convenience of time for visit health facilities" contributes to decrease the access to health services.

The second: "current education status", the model revealed that if "current education status" increases by 1 standardized unit, the log (odds) of access will decrease. The odd ratio for access in "chance to meet a Doctor at health facilities" is

0.110 (in comparison to the reference group). The model shown that the "chance to meet a Doctor at health facilities" contributes to decrease the access to health services.

The third: "known about health facilities in community", the model revealed that if "known about health facilities in community" increases by 1 standardized unit, the log (odds) of access will decrease. The odd ratio for access in "known about health facilities in community" is 0.195 (in comparison to the reference group). The model shown that the "known about health facilities in community" contributes to decrease the access to health services.

Table 5.32 : Association between socio-economic factors and other factors that related to accessibility and health services accessibility mid adolescent

Factors	B	OR	95% CI for OR		P-value
			Lower	Upper	
Known about household expenses	**-.696**	.499	.272	.915	**.025**
Adolescents' working status	-.113	.893	.362	2.206	.807
Convenience of time for visit health facilities	.224	1.251	.515	3.040	.621
Dr. always prescribe unavailable drugs	-.155	.857	.453	1.618	.633
Received health information	-.937	.392	.113	1.356	.139
Satisfaction with the reception at health facilities.	.282	1.325	.674	2.605	.414
Quality of health care	-.629	.533	.260	1.094	.086
Having sex activities	-.529	.589	.248	1.401	.231
Current education status	.029	1.030	.474	2.238	.941
Guardians' occupation	-.776	.460	.187	1.132	.091
Known about health facilities in community	.097	1.102	.478	2.538	.820
Gender	.299	1.348	.731	2.488	.339
Chance to meet Dr. at health facilities	.031	1.032	.566	1.882	.918
Constant	3.189	24.266			< .001

The Model (in Mid Adolescents) is

Logit (Accessibility) = 3.189 - .696 (known about household expense)

As Table 5.32 shown, the statistical associations was revealed between access and known about household expenses (P-value = .025).

The model revealed that if "known about household expenses" increases by 1 standardized unit the log (odds) of access will decrease. The odd ratio for access in known about household expenses" is 0.499 (in comparison to the reference group). The

model shown that the "known about household expenses" contributes to decrease the access to health services.

Table 5.33 : Association between socio-economic factors and other factors that related to accessibility and health services accessibility in late adolescents

Factors	B	OR	95% CI for OR		P-value
			Lower	Upper	
Known about household expenses	.343	1.409	.359	5.535	.623
Adolescents' working status	-.184	.832	.320	2.164	.706
Convenience of time for visit health facilities	-.598	.550	.183	1.651	.287
Dr. always prescribe unavailable drugs	-.678	.508	.194	1.330	.168
Received health information	-1.856	.156	.015	1.611	.119
Satisfaction with the reception at health facilities.	-.131	.877	.272	2.827	.827
Quality of health care	.556	1.744	.591	5.144	.313
Having sex activities	-.380	.684	.238	1.961	.479
Current education status	.776	2.173	.754	6.264	.151
Guardians' occupation	**-1.283**	.277	.086	.897	**.032**
Known about health facilities in community	**-1.420**	.242	.071	.823	**.023**
Gender	1.397	4.044	1.368	11.951	**.011**
Chance to meet Dr. at health facilities	.407	1.503	.544	4.153	.432
Constant	3.525	33.964			.008

The Model (in Late Adolescents) is

Logit (Accessibility) = 3.525 – 1.283 (Guardians' occupation) – 1.420 (Known about health facilities in community) + 1.397 (gender)

As indicated in Table 5.33, the statistical associations were shown between access and 3 factors including "guardians' occupation", "known about health facilities in community" and age (P-value .032, .023 and .011 respectively).

The first, the model revealed that if "guardians' occupation" increases by 1 standardized unit the log (odds) of access will decrease. The odd ratio for access in "guardians' occupation" is 0.277 (in comparison to the reference group). The model shown that the "guardians' occupation" contributes to decrease the access to health services.

The second: "known about health facilities in community", the model revealed that if "known about health facilities in community" increases by 1 standardized unit,

the log (odds) of access will decrease. The odd ratio for access in "known about health facilities in community" is 0.242 (in comparison to the reference group). The model shown that the "known about health facilities in community" contributes to decrease the access to health services.

The third: "age", the model indicated that if "age" increases by 1 standardized unit, the log (odds) of access will increase. The odd ratio for access in "age" is 4.044 (in comparison to the reference group). The model shown that the "age" contributes to increase the access to health services.

The table 5.34 presented the summarizing of the association between factors related to accessibility and health services accessibility by the overall, by gender and by stage of adolescence.

Table 5.34 : Summary of the association between factors related to accessibility and health services accessibility by both genders, by each gender and by stage of adolescence (age)

	Male Adolescents			Female Adolescents			M & F Adolescents			Early Adolescents			Mid Adolescents			Late Adolescents		
	OR	95%CI OR	P value	OR	95%CI OR	P value	OR	95%CI OR	P value	OR	95%CI OR	P value	OR	95%CI OR	P value	OR	95%CI OR	P value
Guardian 's occupation	0.363	0.148,.890	0.027	0.729	0.314,1.693	0.462	0.513	0.283, 0.931	0.028	2.931	0.356,10.678	0.442	0.46	0.187,1.132	0.091	0.277	0.086,0.897	0.032
Chance to meet Dr. at health facilities	1.078	0.546,2.126	0.829	2.366	1.283,4.363	0.006	1.661	1.067, 2.586	0.25	1.032	1.032,.566	0.918	1.032	0.556,1.882	0.918	1.503	0.544,4.153	0.432
Convenience of time for visit health facilities	1.051	0.427,2.589	0.914	0.629	0.313,1.264	0.193	0.759	0.442,1.302	0.317	0.316	0.101, 0.987	0.047	1.251	0.515,3.040	0.621	0.55	0.183,1.651	0.287
Current education	0.739	0.324,1.682	0.471	1.59	0.632,4.001	0.324	1.11	0.620,1.987	0.726	0.110	0.015, 0.816	0.031	2.173	0.754,6.264	0.151	2.173	0.754,6.264	0.151
Knew about health facilities in the community	0.562	0.242,1.304	0.181	0.485	0.231,1.020	0.057	0.586	0.341,1.008	0.053	0.195	0.062, 0.616	0.005	1.102	0.478,2.538	0.820	0.242	0.071,0.823	0.023
Knew about household expenses	0.793	0.392,1.601	0.517	0.634	0.337,1.195	0.159	0.699	0.441,1.106	0.126	0.913	0.295,2.824	0.874	0.499	0.272,0.915	0.025	1.409	0.359,5.535	0.623
Age	1.044	0.897,1.215	0.580	0.941	0.833,1.062	0.332	0.974	0.889,1.068	0.578									
Gender										1.348	0.731,2.488	0.339	1.348	0.731,2.488	0.339	4.044	1.368, 11.951	0.011

5.3 Needs and Utilization

5.3.1 Introduction

The adolescent health needs and problems of this study were categorized into 4 main areas as follows;

1) *Sexual and reproductive health*: For both genders, development of sex organs, acne, masturbation, itching of genitalia, having sex with (lover, acquaintance, sex worker, client), family planning (contraceptive pill, condom used, other methods), unintended pregnancy, abortion, burning urine, pus/discharge at genital organ, HIV/AIDS, body and shape, sexual harassment. The specific issues for males were wet dreams, frequency of orgasm. The specific issues for females were menstruation, dysmenorrhea, irregular period.
2) *Injury and violence*: injury, road accident, home violence, fighting and rape
3) *Mental health* :depression, stress, loneliness and sadness
4) *Substance abuse*: alcohol, smoking and drug addicts

As mention earlier about health needs of adolescents, this study was combined real needs and felt needs. In term of "felt needs", it meant anything that they consciously desire about their needs. (www.sil.org.lingualinkik/literacy access 20 June 2004). Therefore, the questionnaire was designed for explore adolescent's health need both in term of real needs and felt needs. To explore the felt needs, the subjects had been asked both their heath needs/problems and their opinions about other adolescents on their health needs and problems.

5.3.1.1 Top ten adolescents' health needs and problems

As indicated in table 1, the gender difference were found on the major adolescents' health needs and problems. The top ten male adolescents' health needs and problems composed of 1) Acne, 2) Fighting, 3) Smoking, 4) Amphetamine, 5) Alcohol, 6) Unintended pregnancy, 7) Heroin, 8) Traffic accident, 9) Induced abortion and 10) Stress. While top ten female adolescents' health needs and problems consisted of 1) Acne, 2) Dysmenorrhea, 3) Unintended pregnancy, 4) Amphetamine, 5) Stress, 6)

Heroin addict, 7) Induced abortion, 8) Irregular period, 9) Stress and 10) Rape. The results shown the percentage of adolescents who answer "yes" for their health needs/problems and their opinion about other adolescents' health needs/problems. Most of both genders indicated that "acne problem" was the first range of the top ten, females were more likely to have probem with acne than males (84.5% females vs 71.9% males). The second top ten range in males was "fighting", and "dysmenorrhea" for females. Among top ten health needs/problems, females were more likely to have reproductive health problems than males (5 reproductive health problems faced by females meanwhile 2 reproductive health problems faced by males). Additionally, females were more likely to have mental health problems (stress) than males (68.3% females vs 55.2% males). Conversely, males were more likely to be faced with violence (fighting) than females. Moreover, males were more likely to face with various kinds of substance abuses than females (4 types of substance abuses faced by males and 2 types in females).

Table 5.35 : Descriptive Analysis of Adolescents: Distribution by Gender and by Top ten adolescents' health needs and problems including gender issues

Items	Male Having health needs/problems n (%)	Total N	Items	Female Having health needs/problems n (%)	Total N
1 Acne	207 (71.9)	288	1 Acne	421 (84.5)	484
2 Fighting	241 (66.9)	360	2 Dysmenorrhea	384 (77.1)	478
3 Smoking	238 (66.3)	359	3 Unintended pregnancy	350 (70.3)	482
4 Amphetamine	230 (64.2)	358	4 Amphetamine	348 (69.9)	479
5 Alcohol	229 (64.1)	357	5 Stress	340 (68.3)	476
6 Unintended pregnancy	228 (62.6)	364	6 Heroin addict	338 (67.9)	489
7 Heroin addict	227 (62.5)	363	7 Induced abortion	329 (66.1)	481
8 Traffic accident	219 (60.5)	362	8 Irregular period	317 (63.7)	481
9 Induced abortion	215 (59.7)	360	9 Sadness	308 (61.8)	483
10 Stress	196 (55.2)	355	10 Rape	297 (59.6)	478

5.3.1.2 Having chronic disease

As shown in Table 5.36, most (94.1%) reported they did not have any chronic diseases.

Table 5.36 : Chronic diseases in adolescent

Characteristics	Male n (%)	Female n (%)	Total N (%)	Difference Male vs Female P-value	Difference Early/Mid/late adolescent P-value
Having chronic disease				>.05	>.05
Yes	24 (6.5)	27 (5.5)	51 (5.9)		
No	348 (93.5)	467 (94.5)	815 (94.1)		
Type of chronic diseases (n=49)				>.05	>.05
Respiratory disease	9 (39.1)	7 (26.9)	16 (32.7)		
Endocrine gland	3 (13.0)	5 (19.2)	8 (16.3)		
Hematology/Immunity	0 (0.0)	7 (26.9)	7 (14.3)		
Gastro-intestinal	3 (13.0)	7 (15.4)	7 (14.3)		
Other	9 (34.9)	2 (11.6)	11 (22.4)		

In term of the difference among having chronic diseases and current education status (not in school vs in school adolescents). The results indicated that most (94.1%)of them did not have chronic diseases school, there was no statistical differrence in the distribution of current education status (not in school vs in school adolescents) and by having chronic diseases (table 5.37).

Table 5.37 : Descriptive Analysis of Adolescents: Distribution by Current Education Status and by Having Chronic Disease

Having Chronic diseases	Current Education Status		Total
	Not in school	In school	
No	176 (93.6)	637 (94.2)	813 (94.1)
Yes	12 (6.4)	39 (5.8)	51 (5.9)
Total	188 (100.0)	676 (100.0)	864 (100.0)

a) Type of Chronic Diseases

Among the respondents who reported having chronic diseases, the majority (32.7%) reported that they got sick from Respiratory Tract Diseases (table 5.38).

5.3.1.3 Having Sickness within last 2 months

About one third (33.8%) of the respondents reported that they had been sick within the last two months (table 5.38). Females were more likely to become sick than males, this decreased with age group in both genders.

b) Type of diseases/sickness

Among the responses who had been sick within last 2 months, the majority (75.2%) were Respiratory Diseases, 11.3% Gastro-Intestinal Diseases and the balance (13.5%) were other diseases (table 5.38).

Table 5.38 : The sickness of adolescents within last 2 months

Characteristics	Male n (%)	Female n (%)	Total N (%)	Difference Male vs Female P-value	Difference Early/Mid/late adolescent P-value
Sickness within last 2 months				>.05	>.05
Yes	114 (30.6)	180 (36.1)	294 (33.8)		
No	258 (69.4)	318 (63.9)	576 (66.2)		
Type of diseases/sickness within last 2 months (n = 282)					
Respiratory diseases	86 (78.2)	125 (73.1)	212 (75.2)		
Gastro-intestinal diseases	8 (7.3)	24 (14.8)	32 (11.3)		
Vascular diseases	2 (1.8)	5 (2.9)	7 (2.5)		
Accidents	5 (4.5)	1 (0.6)	6 (2.1)		
Other	9 (8.2)	16 (9.4)	25 (8.9)		

Among adolescents who reported having sickness within last two months, it was found that "not in school adolescents" more likely to get sick than "in school adolescents", there was a statistical significant in the distribution of current education status (not in school vs in school) and by having sickness within last 2 months at a P-value = .002 (table 5.39).

Table 5.39 : Descriptive Analysis of Adolescents: Distribution by Current Education Status and by Having Sickness within last two months

Sickness within 2 months	Current education status		Total	P-value
	In school	Not in School		
No	143 (75.7)	431 (63.5)	574 (66.1)	.002
Yes	46 (24.3)	248 (36.5)	294 (33.9)	
Total	189 (100.0)	679 (100.0)	868 (100.0)	

5.3.1.4 Health Consultant (for overall health problems)

The majority (79.7%) of adolescents of both genders identified their parent as their health consultant. Few of the respondents indicated the teacher as a health consultant.

Table 5.40 : Adolescent and health consultant

Characteristics	Male n (%)	Female n (%)	Total N (%)	Difference Male vs Female P-value	Difference Early/Mid/late adolescent P-value
Health consultants (n =864)				>.05	>.05
Parent	289 (78.3)	180 (80.8)	689 (79.7)		
Peer	47 (12.7)	65 (13.1)	112 (13.0)		
Teacher/others	33 (9.0)	30 (6.1)	63 (7.3)		

5.3.1.5 Top ten Health needs/problems (excluding gender issues), place that they could visit when they faced with health problems and health consultant

- ***Top ten adolescents' health needs and problems (excluding gender issues)***

As the certain characteristics and development of adolescents are differences among gender, they have special health needs/problems. Therefore, the overall health needs/problems are presented by excluding gender issues. The gender issues comprised of 1) dysmenorrhea, 2) irregular period, 3) wet dream, and 4) frequency of orgasm were excluded for the statistical analysis. The findings are presented by gender and by stage of adolescence. As indicated in table 5.41, from 871 subjects, the top ten adolescents'

health needs and problems (excluding gender issues) consisted of: 1) Acne (83.3%); 2) Unintended pregnancy (69.0%); 3) Amphetamine addict (68.7%; 4) Heroin addict (67.5%); 5) Induced abortion (65.3%); 6) Stress (62.8%); 7) Fighting (62.4%); 8) Smoking (62.2%); 9) Alcohol (61.15); and 10) Rape (60.9%). There were statistical significant differences found in the distribution of "Acne", "Untended pregnancy, "Amphetamine addict", "Heroin addict", "Induced abortion", "Stress", "Fighting", and "Rape" by gender at P-value .001, .002, .012, .029, .008, <.001, <.001, and .004 respectively. Moreover, there was a statistical significant difference found in the distribution of "Smoking" and by stage of adolescence (P-value = .019).

Table 5.41 : Difference of top ten adolescents' health needs/problems *(both real needs and felt needs)* excluding gender issue by gender and by stage of adolescences

	Gender			State of adolescents				Difference M vs F P-value	Difference Early/Mid/Late Adolescents P-value
	Male n (%)	Female n (%)	Total N (%)	Early n (%)	Mid n (%)	Late n (%)	Total N (%)		
1 Acne								**0.001**	>.05
No	79 (38.2)	63 (13.0)	142 (16.7)	40 (20.1	58 (14.3)	44 (18.0)	142 (16.7)		
Yes	128 (61.8)	421 (87)	709 (83.3)	159 (79.9)	349 (85.7)	201 (82.0)	709 (83.3)		
Total	207 (100.0)	484 (100.0)	851 (100.0)	199 (100.0)	407 (100.0)	245 (100.0)	851 (100.0)		
2 Unintended pregnancy								**0.002**	>.05
No	132 (36.7)	128 (26.8)	260 31.0)	68 (35.4)	126 (31.3)	66 (27.2)	578 (69.0)		
Yes	228 (63.3)	350 (73.2)	578 (69.0)	124 (64.6)	277 (68.7)	177 (72.8)	260 (31.0)		
Total	360 (100.0)	478 (100.0)	838 (100.0)	192 (100.0)	403 (100.0)	243 (100.0)	838 (100.0)		
3 Amphetamine addict								**0.012**	>.05
No	129 (35.9)	134 (27.8)	263 (31.3)	62 (32.1)	136 (33.4)	65 (27.0)	263 (31.3)		
Yes	230 (64.1)	348 (72.2)	578 (68.7)	131 (67.9)	271 (66.6)	176 (73.0)	578 (68.7)		
Total	359 (100.0)	482 (100.0)	841 (100.0)	193 (100.0)	407 (100.0)	241 (100.0)	841 (100.0)		

Table 5.41 : (Cont.) Difference of top ten adolescents' health needs/problems *(both real needs and felt needs)* excluding gender issue by gender and by stage of adolescences

	Gender			State of adolescents				Difference M vs F P-value	Difference Early/Mid/Late Adolescents P-value
	Male n (%)	Female n (%)	Total N (%)	Early n (%)	Mid n (%)	Late n (%)	Total N (%)		
4 Heroin addict								**0.029**	>.05
No	131 (36.6)	141 (29.4)	272 (32.5)	60 (31.4)	139 (34.2)	73 (30.4)	272 (32.5)		
Yes	227 (63.4)	338 (70.6)	565 (67.5)	131 (68.6)	267 (65.8)	167 (69.6)	565 (67.5)		
Total	358 (100.0)	479 (100.0)	837 (100.0)	191 (100.0)	406 (100.0)	240 (100.0)	837 (100.0)		
5 Induced abortion								**0.008**	>.05
No	142 (39.8)	147 (30.9)	289 (34.7)	71 (37.0)	144 (36.0)	74 (30.7)	289 (34.7)		
Yes	215 (60.2)	329 (69.1)	544 (65.3)	121 (63.0)	256 (64.0)	167 (69.3)	544 (65.3)		
Total	357 (100.0)	476 (100.0)	833 (100.0)	192 (100.0)	400 (100.0)	241 (100.0)	833 (100.0)		
6 Stress								**<.001**	>.05
No	168 (46.2)	149 (30.5)	317 (37.2)	82 (41.0)	158 (38.6)	77 (31.6)	536 (62.8)		
Yes	196 (53.8)	340 (69.5)	536 (62.8)	118 (59.0)	251 (61.4)	167 (68.4)	317 (37.2)		
Total	364 (100.0)	489 (100.0)	853 (100.0)	200 (100.0)	409 (100.0)	244 (100.0)	853 (100.0)		
7 Fighting								**<.001**	>.05
No	125 (34.4)	194 (40.3)	319 (37.8)	75 (37.9)	157 (38.4)	88 (36.2)	320 (37.6)		
Yes	238 (65.6)	287 (59.7)	525 (62.2)	123 (62.1)	252 (61.6)	155 (63.8)	530 (62.4)		
Total	363 (100.0)	481 (100.0)	844 (100.0)	198 (100.0)	409 (100.0)	243 (100.0)	850 (100.0)		
8 Smoking								>.05	>.05
No	133 (36.7)	195 (40.5)	328 (38.9)	76 (39.2)	158 (38.8)	85 (35.0)	319 (37.8)		
Yes	229 (63.3)	286 (59.5)	515 (61.1)	118 (60.8)	249 (61.2)	158 (65.0)	525 (62.2)		
Total	362 (100.0)	481 (100.0)	843 (100.0)	194 (100.0)	407 (100.0)	243 (100.0)	844 (100.0)		
9 Alcohol								>.05	**0.019**
No	231 (64.2)	99 (20.5)	330 (39.1)	80 (41.0)	171 (42.3)	77 (31.6)	328 (38.9)		
Yes	129 (35.8)	384 (79.5)	513 (60.9)	115 (59.0)	233 (57.7)	167 (68.4)	515 (61.1)		
Total	360 (100.0)	483 (100.0)	843 (100.0)	195 (100.0)	404 (100.0)	244 (100.0)	843 (100.0)		

Table 5.41 : (Cont.) Difference of top ten adolescents' health needs/problems *(both real needs and felt needs)* excluding gender issue by gender and by stage of adolescences

	Gender			State of adolescents				Difference M vs F	Difference Early/Mid/Late Adolescents
	Male n (%)	Female n (%)	Total N (%)	Early n (%)	Mid n (%)	Late n (%)	Total N (%)	P-value	P-value
10 Rape								.004	>.05
No	170 (47.9)	181 (37.9)	351 (42.1)	76 (40.0)	181 (45.0)	94 (39.0)	351 (42.1)		
Yes	185 (52.1)	297 (62.1)	482 (55.3)	114 (60.0)	221 (55.0)	147 (61.0)	482 (57.9)		
Total	355 (100.0)	478 (100.0)	833 (100.0)	190 (100.0)	402 (100.0)	241 (100.0)	833 (100.0)		

The finding of relative risk analysis shown the ORs for the association between top ten health needs/problems excluding gender issues (having vs not having problems) and gender are presented in table 8, Interestingly, females were more likely to have problems than males. It can be said that, the magnitude of health needs and problems, females were more likely to have problems than males (table 5.42).

Table 5.42 : The odds ratio of adolescents indicated that they had had and not having health needs/problems among top 10 ten health needs/problems excluding gender issues by gender

	Health Needs/Problems (N = 871)	OR	95% CI	P-value
1	Acne	1.833	1.275-2.636	**.001**
2	Unintended pregnancy	1.583	1.179-2.126	**.002**
3	Amphetamine addict	1.455	1.086-1.954	**.012**
4	Heroin addict	1.383	1.034-1.851	**.029**
5	Induce abortion	1.478	1.109-1.971	**.008**
6	Stress	1.956	1.475-2.593	**.000**
7	Fighting	.739	.557-.981	**.036**
8	Smoking	.777	.586-1.031	.080
9	Alcohol	.852	.643-1.128	.285
10	Rape	1.508	1.149-1.992	**.004**

5.3.1.6 Top ten health needs and utilization of health services

Utilization refers to the places that respondents could visit when they faced with health problems (top ten health needs/problems as above mentioned), these included government sectors, private health facilities and NGOs. The subjects were asked about their experiences and their opinions about the places that they could visit when they

faced with health problems. The findings are presented by both gender and by each gender (table 5.43-5.45).

As indicated in table 5.43, all subjects who reported that having health needs/problems utilized health services less than 60%. Most (56.0%) was unintended pregnancy.

Table 5.43 : Top ten health needs and utilization of health services of both genders

Health problems N = 871	Utilization of health services		Total %
	Yes %	No %	
1 Acne	52.7	47.3	100.0
2 Unintended pregnancy	56.0	44.0	100.0
3 Amphetamine	42.6	57.4	100.0
3 Induce abortion	54.8	45.2	100.0
4 Heroin addict	42.1	57.9	100.0
6 Stress	21.5	78.5	100.0
7 Fighting	28.8	71.2	100.0
8 Smoking	25.6	74.4	100.0
9 Alcohol	22.7	77.3	100.0
10 Rape	42.7	57.3	100.0

Among male adolescents, they utilized health services when they faced with the mentioned health problems only 50% or less (table 5.44). Interestingly, only one half of adolescents who faced with unintended pregnancy utilized health services.

Table 5.44 : Top ten health needs and utilization of health services in male adolescents

Health problems N = 373	Utilization of health services		Total %
	Yes %	No %	
1 Acne	44.8	55.2	100.0
2 Fighting	28.7	71.3	100.0
3 Smoking	25.5	74.5	100.0
4 Amphetamine	39.9	60.1	100.0
5 Alcohol	22.5	77.5	100.0
6 Unintended pregnancy	50.4	49.6	100.0
7 Heroin addict	40.0	60.0	100.0
8 Traffic accident	49.3	50.7	100.0
9 Induce abortion	49.6	50.4	100.0
10 Stress	16.9	83.1	100.0

Among female adolescents, they utilized health services when they faced with the mentioned health problems only 60% or less (table 5.45). Most (60%) was unintended pregnancy.

Table 5.45 : Top ten health needs and utilization of health services in female adolescents

Health problems N = 498	Utilization of health services		Total %
	Yes %	No %	
1 Acne	58.6	41.4	100.0
2 Dysmenorrhea	49.6	50.4	100.0
3 Unintended pregnancy	60.2	39.8	100.0
4 Amphetamine	44.6	55.4	100.0
5 Stress	24.9	75.1	100.0
6 Heroin addict	43.0	57.0	100.0
7 Induce abortion	58.6	41.4	100.0
8 Irregular period	42.6	57.4	100.0
9 Sad	17.5	82.5	100.0
10 Rape	44.2	55.8	100.0

5.3.1.7 Health needs/problems (excluding sexual and reproductive health) by gender and stage of adolescents

For understanding the real situation of the adolescents' health needs/problems and the accessibility to health services of the subjects, the data about their health needs/problems, health consultant and place for visit when they faced with health problem were analysed by gender and by stage of adolescence. The findings shown a small number of responses in some health problems, therefore only the top 5 of health problems were presented in this part.

Male's health problems

As shown in the tables, a top five of health needs/problems were presented. Among male adolescents, one half of mid and late adolescent males indicated that acne was the major health problem. In contrast, early adolescent males reported that fighting were their major health problem (table 5.46).

Table 5.46 : Descriptive Analysis of Male Adolescents: Distribution by Stage of adolescence and by top five health problems (exclude sexual and reproductive health)

Early				Mid				Late			
No	N = 73	n	%	No	N = 198	n	%	No	N = 102	n	%
1	Fighting	23	31.5	1	Acne	109	55.1	1	Acne	50	49.0
2	Acne	18	24.7	2	Fighting	56	28.3	2	Drinking alcohol	44	43.1
3	Depression	11	15.1	3	Stress	42	21.2	3	Fighting	35	34.3
4	Road accident	10	13.7	4	Sadness	36	18.2	4	Stress	34	33.3
5	Stress	7	9.6	5	Road accident	35	17.7	4	Smoking	34	33.3
								5	Road accident	26	25.5

Female's health problems

Among females adolescents, Table shows that the similarity of the top three health problems of female adolescents in each stage of adolescence, there were: 1) acne, 2) stress and 3) sadness. Female adolescents were more likely to face with mental health problem than male adoleascents, moreover, the mental health problem in females increased with age (table 5.47).

Table 5.47 : Table Descriptive Analysis of Female Adolescents: Distribution by Stage of Adolescence and by top five health problems (exclude sexual and reproductive health)

Early				Mid				Late			
No	N = 130	n	%	No	N = 222	n	%	No	N = 146	n	%
1	Acne	69	53.1	1	Acne	131	59.0	1	Acne	78	53.4
2	Stress	36	27.7	2	Stress	82	36.9	2	Stress	62	42.5
3	Sadness	29	22.3	3	Sadness	72	32.4	3	Sadness	38	26.0
4	Depression	24	18.5	4	Depression	49	22.1	4	Lonelyness	29	19.9
5	Fighting	22	16.9	5	Loneliness	37	16.7	5	Depression	26	17.8
5	Loneliness	22	16.9								

- ***Place that they could visit when they faced with health problems by gender***

In term of the place that could visit when they faced with the mentioned health problems, the results are presented by gender in each stage of adolescents as the table below.

Males

Most of male respondents in each stage of adolescence reported that they did nothing. Excluding road accident, mid adolescent males stated that they visited "government hospital", on the other hand late adolescent males visited "private hospital" (table 5.48).

Table 5.48 : Health needs, health problems of Early Male Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 73 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private clinic		NGO.		Do noting		Drug store/Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Fighting	21	3	14.3	1	4.8	1	4.8	2	9.5	0	0	15	71.4	0	0
2	Acne	18	2	11.1	1	5.6	2	11.1	0	0.0	0	0	10	55.6	3	16.7
3	Depression	11	1	9.1	1	9.1	0	0.0	0	0.0	1	9.1	8	72.7	1	9.1
4	Road accident	10	5	50.0	2	20.0	0	0.0	1	10.0	0	0	2	20.0	1	10
5	Stress	7	0	0.0	0	0.0	1	14.3	0	0.0	0	0	6	85.7	0	0

Table 5.49 : Health needs, health problems of Mid Male Adolescents and place that they could visit when they face with problems

No	Items	Having problem N = 198 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO		Do noting		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	104	10	9.6	4	3.8	13	12.5	23	22.1	0	0	46	44.2	20	19.2
2	Fighting	56	2	3.6	2	3.6	5	8.9	8	14.3	1	1.8	37	66.1	2	3.6
3	Stress	41	0	0.0	1	2.4	2	4.9	2	4.9	0	0	37	90.2	0	0.0
4	Sadness	35	1	2.9	2	5.7	2	5.7	1	2.9	0	0	31	88.6	0	0.0
5	Road accident	34	13	38.2	9	26.5	7	20.6	3	8.8	0	0	7	20.6	1	2.9
5	Drinking alcohol	34	2	5.9	1	2.9	3	8.8	0	0.0	0	0	30	88.2	0	0.0

Table 5.50 : Health needs, health problems of Late Male Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 102 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do noting		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	50	3	6.0	3	6.0	6	12.0	10	20.0	0	0	25	50.0	7	14.0
2	Drinking alcohol	44	3	6.8	3	6.8	2	4.5	3	6.8	0	0	33	75.0	2	4.5
3	Fighting	33	2	6.1	6	18.2	2	6.1	4	12.1	0	0	20	60.6	3	9.1
3	Stress	33	1	3.0	0	0.0	3	9.1	2	6.1	0	0	27	81.8	1	3.0
3	Smoking	33	3	9.1	2	6.1	3	9.1	0	0.0	0	0	25	75.8	1	3.0
4	Road accident	25	6	24.0	8	32.0	3	12.0	5	20.0	0	0	6	24.0	3	12.0
5	Sadness	23	0	0.0	0	0.0	2	8.7	2	8.7	0	0	18	78.3	1	4.3

Females

Most of the female respondents in each stage of adolescence reported that they did nothing. However, for acne problems, most (33.0%)of early adolescent females stated that they went to drug stores (table 5.51-5.53).

Table 5.51 : Health needs, health problems of Early Female Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 130 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do noting		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	66	7	11.0	7	11	11	17	5	7.6	0	0	19	28.8	22	33.0
2	Stress	33	3	9.1	0	0	3	9.1	0	0.0	0	0	27	81.8	0	0
3	Sadness	28	3	11.0	0	0	2	7.1	0	0.0	0	00	23	82.1	0	0
4	Depression	24	2	8.3	0	0	2	8.3	0	0.0	2	8.3	19	79.2	0	0
5	Fighting	22	1	4.5	2	9.1	1	4.5	1	4.5	0	0	15	68.2	2	9.1

Table 5.52 : Health needs, health problems of Mid Female Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 222 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do noting		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	128	12	9.4	5	3.9	15	11.7	37	28.9	1	0.8	52	40.6	26	20.3
2	Stress	78	3	3.8	1	1.3	4	5.1	5	6.4	1	1.3	62	79.5	5	6.4
3	Sadness	70	0	0.0	1	1.4	3	4.3	4	5.7	2	2.9	59	84.3	2	2.9
4	Depression	47	2	4.3	2	4.3	3	6.4	4	8.5	1	2.1	37	78.7	2	4.3
5	Loneliness	36	0	0.0	1	2.8	2	5.6	1	2.8	2	5.6	29	80.6	0	0.0

Table 5.53 : Health needs, health problems of Late Female Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 146 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do noting		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	77	5	6.5	2	2.6	6	7.8	29	37.7	0	0	30	39.0	15	19.5
2	Stress	61	4	6.6	3	4.9	5	8.2	4	6.6	2	3.3	49	80.3	1	1.6
3	Sadness	38	1	2.6	2	5.3	1	2.6	2	5.3	2	5.3	33	86.8	1	2.6
4	Loneliness	29	0	0.0	2	6.9	3	10.3	2	6.9	0	0	24	82.8	1	3.4
5	Depression	26	0	0.0	1	3.8	2	7.7	2	7.7	0	0	23	88.5	0	0.0

- **Health consultants**

Similarity, the results about health consultants are presented by gender and by each stage of adolescents as the following.

Males

As indicated in tables 5.54 –5.56, the health consultant of male adolescents for the mentioned health problems, most of early adolescent males indicated that parent was the health consultant. For mid adolescents, some problems (acne, road accidents) most of them stated that they consulted parents. For late adolescents, they preferred peer as a consultant.

Table 5.54 : Health needs, health problems of Early Male Adolescents and health consultant

No	Health problem	N = 73 (yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Fighting	23	9	39.1	3	13.0	8	34.8	0	0	5	21.7	1	4.3	0	0
2	Acne	18	11	61.1	3	16.7	3	16.7	0	0	2	11.1	0	0	0	0
3	Depression	11	6	54.5	3	27.3	2	18.2	0	0	1	9.1	1	9.1	0	0
4	Road accident	10	6	60.0	2	20.0	2	20.0	0	0	0	0	0	0	0	0
5	Stress	7	4	57.1	0	0	2	28.6	0	0	1	14.3	0	0	0	0

Table 5.55 : Health needs, health problems of Mid Male Adolescents and health consultant

No	Health problem	N = 198 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	109	57	52.3	16	14.7	42	38.5	0	0	17	15.6	3	2.8	0	0
2	Fighting	56	9	16.1	9	16.1	30	53.6	0	0	12	21.4	0	0.0	1	1.8
3	Stress	42	9	21.4	2	4.8	27	64.3	0	0	8	19.0	0	0.0	0	0
4	Sadness	36	5	13.9	3	8.3	26	72.2	0	0	7	19.4	0	0.0	0	0
5	Road accident	35	24	68.6	3	8.6	5	14.3	2	5.7	6	17.1	1	2.9	0	0
6	Drinking alcohol	34	6	17.6	2	5.9	16	47.1	1	2.9	11	32.4	0	0.0	1	2.9
6	Smoking	34	4	11.8	3	8.8	18	52.9	0	0	11	32.4	0	0.0	1	2.9

Table 5.56 : Health needs, health problems of Late Male Adolescents and health consultant

No	Health problem	N = 102 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	N	%	n	%	n	%
1	Acne	50	15	30.0	12	24.0	26	52.0	0	0	9	18.0	4	8.0	1	2.0
2	Drinking alcohol	44	5	11.4	2	4.5	34	77.3	0	0	9	20.5	1	2.3	0	0
3	Fighting	35	7	20.0	5	14.3	27	77.1	0	0	2	5.7	2	5.7	0	0
4	Stress	34	11	32.4	3	8.8	20	58.8	0	0	5	14.7	2	5.9	0	0
4	Smoking	34	5	14.7	0	0.0	26	76.5	0	0	5	14.7	0	0.0	0	0
5	Road accident	26	14	53.8	4	15.4	11	42.3	0	0	3	11.5	1	3.8	0	0

Females

As indicated in table 5.57-5.59, the health consultant of early adolescents for some problems (acne, fighting) were parent, however, in some health problems (stress, sadness and loneliness) their consultant were peer. Among mid adolescent females, most respondents reported that their peers were their health consultant. In term of acne and road accident problems, they preferred to consult with the parent.

Among late adolescent females, most of them reported that they had consulted with peer about their health problems, excluding problem about road accident, most of the respondents in this age group stated that parent were their health consultants.

Table 5.57 : Health needs, health problems of Early Female Adolescents and health consultant

No	Health problem	N = 130 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	69	45	65.2	15	21.7	23	33.3	0	0	2	2.9	0	0.0	0	0
2	Stress	36	12	33.3	5	13.9	18	50.0	0	0	5	13.9	1	2.8	1	2.8
3	Sadness	29	9	31.0	5	17.2	12	41.4	0	0	4	13.8	1	3.4	0	0
4	Depression	24	9	37.5	6	25.0	7	29.2	0	0	3	12.5	0	0.0	0	0
5	Fighting	22	9	40.9	4	18.2	9	40.9	0	0	3	13.6	0	0.0	0	0
5	Lonelyness	22	4	18.2	6	27.3	13	59.1	0	0	2	9.1	0	0.0	0	0

Table 5.58 : Health needs, health problems of Mid Female Adolescents and health consultant

No	Health problem	N = 222 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	131	69	52.7	21	16.0	65	49.6	1	0.8	8	6.1	1	0.8	1	0.8
2	Stress	82	27	32.9	14	17.1	47	57.3	0	0.0	15	18.3	2	2.4	2	2.4
3	Sadness	72	16	22.2	17	23.6	40	55.6	0	0.0	19	26.4	2	2.8	1	1.4
4	Depression	49	9	18.4	7	14.3	30	61.2	0	0.0	13	26.5	0	0.0	1	2.0
5	Lonelyness	37	4	10.8	3	8.1	21	56.8	0	0.0	14	37.8	0	0.0	1	2.7

Table 5.59 : Health needs, health problems of Late Female Adolescents and health consultant

No	Health problem	N = 146 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Acne	78	33	42.3	21	26.9	44	56.4	0	0	9	11.5	1	1.3	0	0
2	Stress	62	21	33.9	11	17.7	41	66.1	0	0	12	19.4	2	3.2	0	0
3	Sadness	38	11	28.9	11	28.9	25	65.8	0	0	10	26.3	1	2.6	0	0
4	Lonelyness	29	3	10.3	2	6.9	20	69.0	0	0	9	31.0	0	0.0	0	0
5	Depression	26	5	19.2	3	11.5	15	57.7	0	0	10	38.5	1	3.8	0	0

5.3.2 Need and utilization related to sexuality and reproductive health

The information of this part composed of opinion of current sex education, sexual intercourse, sexual debut and condom used with sex partner. Suprising, there were few percentages of missing responses for these sensitive issues.

5.3.2.1 Opinion towards sex education

In term of opinion towards current sex education, most adolescents of both genders (74.2%) stated that it was "enough" (table 5.60).

Table 5.60 : Opinion towards sex education by gender

Characteristics	Male n (%)	Female n (%)	Total n (%)	Difference Male vs Female adolescent P-value	Difference Early/Mid/late P-value
Opinion towards current sex education (n =871)				>.05	>.05
Enough	289 (77.5)	357 (71.7)	646 (74.2)		
Not enough	84 (22.5)	141 (28.3)	225 (25.8)		

5.3.2.2 Sexual Activity

About 19.0% of the respondents reported having had sexual activitiy. Males were more likely reported being sexually active than females, a total of 24.7% of the males and 14.7% of the females reported having had sexual intercourse. For both genders, the percentage sexually active increased with age. Not surprising, the older adolescents were more likely to have sexual activity than the younger adolescents. There were statistical differences both in the distribution by Stage of Adolescence (Age), by Gender , and by Having Sex Acitivity at a P-value < .001 (table 5.61).

Table 5.61 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age), by Gender and by Sex Activitives

Sexual activity	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
No	72 (98.6)	168 (84.8)	41 (40.2)	281 (75.3)	128 (98.5)	200 (90.5)	95 (65.5)	423 (85.3)	200 (98.5)	368 (87.8)	136 (55.1)	704 (81.0)
Yes	1 (1.4)	30 (15.2)	61 (59.8)	92 (24.7)	2 (1.5)	21 (9.5)	50 (34.5)	73 (14.7)	3 (1.5)	51 (12.2)	111 (44.9)	165 (19.0)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	221 (100.0)	145 (100.0)	496 (100.0)	203 (100.0)	419 (100.0)	247 (100.0)	869 (100.0)
Missing	0	0	0	0	0	1	1	2	0	1	1	2
%missing						0.5	0.7	0.4		0.2	0.4	0.2

Difference : Male vs Females P-value < .001
Difference : Early/Mid/Late P-value < .001

- **Sexual debut**

For sexual debut of sexually active adolescents, the average age at first sexual intercourse of both genders was 15.9 years ± 2.36 SD. Females more likely to have sex one year later than males 16.5 years ± 2.39 SD for females, and 15.5 years ± 2.27 SD for males. It was also found that the minimum age of sex debut was very early in males at age 8 years and females at age 12 years (table 5.62).

Table 5.62 : Sex debut by gender

Sex Debut (N = 165)	Male	Female	M & F
Mean	15.5	16.5	15.9
SD	2.27	2.39	2.36
Minimum age	8	12	8
Total (n)	89	70	159
Missing	3	3	6
% missing	3.3	4.1	3.6

- **Sex partner and comdom used**

Most (60.9%) of sex partner of sexually active adolescents were lovers. Males were more likely to have various sex partners than females, these were included having sex with aquaintance, sex worker, and indirect sex worker. There was a statistical difference in the distribution of by gender sex partner at a P-value < .001 (table 5.63).

- *Condom used with lover*

Among sexually active subjects, only (12.6%) reported using condom all the time with their lovers. Moreover, 38.4% of them had never a used condom with their lovers (table 5.63).

Table 5.63 : Sex partner and condom used by gender

Characteristics	Male n (%)	Female n (%)	Total n (%)	Difference Male vs Female P-value	Difference Early/Mid/late Adolescent P-value
Sex partner (n=248, answer more than 1)				<.001	>.05
Lover	83 (48.3)	68 (89.5)	151 (60.9)		
Acquaintance	43 (25.0)	8 (10.5)	51 (20.6)		
Sex worker	24 (12.8)	0 (0.0)	24 (8.9)		
Indirect sex worker	22 (13.9)	0 (0.0)	22 (8.8)		
Condom used with lover (n =151)					
Never	29 (34.9)	29 (42.6)	58 (38.4)		
Sometime	44 (53.1)	30 (44.2)	74 (49.0)		
All the time	10 (12.0)	9 (13.2)	19 (12.6)		

- **Familiarity with term of the follwing diseasses as a "Sexual Transimitted Diseases"**

The table (5.64) below shows the preliminary assessment of adolescents' knowledge towards "Sexual Transimitted Diseases (STD)" by asking about their familiarity with terms of certain diseases as a STD. Some diseases, both STD and non-STD were selected including Gonorrhea, Syphilis, Chancroid, Prostate Gland Cancer, Candidiasis, Cystitis, Genital Herpes, Cervical Cancer, Trichomonas and Condilomata. The majority results shown a low percentages of adolescents reported that they familiar with term of the above diseases as STD (28.3% for Tricomonas, 15.5% for Syphilis, 14.4% for Chancroid, 12.1% for Genital Herpes, and 10.6% for Condilomata respectively). However, more than one half (61.1%) of the subjects were familiar with term of Gonorrhea as the STD. Additionally, 40.8% of respondents also familiar with term of Candidiasis as the STD. There were statistical difference in the distribution of Stage of Adolescence (Age) and by the familiarity of term of "Gonorrhea, Syhilis, Chancroid" as a STD at P-value < .001. Additionally, for Condilomata, there were statistical difference both in the distrtibution of the familiarity of this disease by the Stage of Adolescence (Age) and by gender at P-value = .010 and P-value <.001 respectively. Not surprisingly, the familiarilty with term of the above diseases as the

STD increased with age. Males were more likely to familiar with the mentioned diseases as STD than females.

Table 5.64 : The familiarity with term of the following diseases as STD by Gender

Characteristics	Male n (%)	Female n (%)	Total n (%)	Difference Male vs Female P-value	Difference Early/Mid/late Adolescent P-value
Familiar with term of some diseases as a STD (n =870)					
Gonorrhea	237 (63.7)	295 (59.2)	532 (61.1)	>.05	<.001
Candidiasis	140 (37.6)	214 (43.2)	354 (40.8)	>.05	>.05
Triconmonas	107 (29.4)	138 (27.9)	24 (28.3)	>.05	<.001
Syphilis	57 (15.3)	77 (15.6)	134 (15.5)	>.05	<.001
Chancriod	54 (14.5)	71 (14.3)	125 (14.4)	.010	<.001
Genital Herpes	50 (13.5)	55 (11.1)	105 (12.1)	>.05	>.05
Condilomata	51 (13.7)	41 (13.9)	92 (10.6)	>.05	>.05

- **Sexual and reproductive health problems of adolescent , place that they could visit and health consultant when they face with problems**

Sexual and reproductive health problems, place for visit when they face with problems

The results of this part are presented by gender in each stage of adolescents. As there were small number of respondents in each stage of adolescents in this part, therefore the top three health problems are presented as the following.

Males

As indicated in the tables 5.65-5.67, a top three of sexual and reproductive health problems of male adolescents were found some differences among each stage of adolescence. Early adolescent males stated that the top three of sexual and reproductive health problems for themselves were: the 1st Body and shape problems (15.1%), the 2nd Frequency of orgasm (11.0%) and the 3rd Hygiene/care at genital area (8.2%) and Burning urine (8.2%).

On the other hand, mid adolescent males reported that their top three sexual and reproductive health problems consisted of the 1st Hygiene/care at genital area (12.1%), the 2nd Body and shape problems (10.6%) and the 3rd Sexual intercourse with lover (9.6%).

Late adolescent males stated that their top three sexual and reproductive health problems composed of the 1st Sexual intercourse with lover (31.4%), the 2nd) Masturbation (15.7%), and the 3rd) Body and shape problems (15.7%) and Condom used (13.7%). It shown that most of problems increased with age, not surprising, older males were more likely having problem on sexual intercourse with lover than younger group.

Table 5.65 : Sexual and reproductive health problems of early male adolescents and place that they could visit when they face with problems

No	Items	Problem N = 73 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do nothing		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Body and shape problems	11	0	0.0	1	9.1	1	9.1	1	9.1	0	0	7	63.6	1	9.1
2	Frequency of orgasm	8	0	0.0	0	0.0	1	12.5	0	0.0	0	0	7	87.5	0	0
3	Hygiene/care at genital area	6	0	0.0	0	0.0	2	33.3	0	0.0	0	0	4	66.7	0	0
4	Burning urine	6	2	33.3	0	0.0		0.0	1	16.7	0	0	3	50.0	0	0

In term of place for visit when they faced with problems, More than one half of respondents of each stage of adolescents stated that they "did nothing" for their health problems.

Table 5.66 : Sexual and reproductive health problems of Mid Male Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 198 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do nothing		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Hygiene/care at genital area	24	1	4.2	0	0.0	3	12.5	3	12.5	0	0	14	58.3	3	12.5
2	Body and shape problems	21	0	0.0	0	0.0	3	14.3	2	9.5	0	0	16	76.2	1	4.8
3	Sexual intercourse with lover	19	2	10.5	1	5.3	0	0	1	5.3	0	0	14	73.7	1	5.3

Table 5.67 : Sexual and reproductive health problems of Late Male Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 102 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do nothing		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Sexual intercourse with lover	32	0	0.0	0	0.0	2	6.3	4	12.5	0	0	25	78.1	2	6.3
2	Masturbation	16	1	6.3	0	0.0	1	6.3	2	12.5	0	0	11	68.8	1	6.3
2	Body and shape problems	16	0	0.0	1	6.3	3	18.8	5	31.3	1	6.3	10	62.5	0	0.0
3	Condom used	14	0	0.0	2	14.3	1	7.1	2	14.3	0	0	10	71.4	0	0.0

Females

Most of the respondent in each stage of adolescence indicated that Dysmenorrhea was the first range of sexual and reproductive health problems. The following was body and shape, excluding early adolescents, reporting "amenorrhea" was the second range of health problems.

Regarding to "place for visit when they faced with problems", most of female respondents of each stage of adolescents reported that they "did nothing" for their health problems. Excluding the problem on Dysmenorrhea, most of them visit drug store for their health seeking practices table 5.68–5.70.

Table 5.68 : Sexual and reproductive health problems of Early Female Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 130 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do nothing		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Dysmenorrhea	37	4	10.8	1	2.7	6	16.2	3	8.1	0	0	11	29.7	12	32.4
2	Amenorrhea	28	3	10.7	1	3.6	3	10.7	3	10.7	0	0	11	39.3	7	25.0
3	Body and shape problems	23	1	4.3	1	4.3	3	13.0	2	8.7	0	0	14	60.9	2	8.70

Table 5.69 : Sexual and reproductive health problems of Mid Female Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 222 (Yes)	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do nothing		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Dysmenorrhea	108	12	11.1	9	8.3	14	13.0	22	20.4	1	0.9	36	33.3	33	30.6
2	Body and shape problems	79	6	7.6	9	11.4	6	7.6	18	22.8	1	1.3	48	60.8	4	5.1
3	Amenorrhea	59	7	11.9	0	0.0	8	13.6	11	18.6	0	0.0	26	44.1	11	18.6

Table 5.70 : Sexual and reproductive health problems of Late Female Adolescents and place that they could visit when they face with problems

No	Items	Problem N = 146 Yes	Place for visit													
			Gov. hospital		Private hospital		Health Center		Private Clinic		NGO.		Do nothing		Drug store /Others	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Dysmenorrhea	73	11	15.1	2	2.7	12	16.4	16	21.9	0	0	24	32.9	29	39.7
2	Body and shape problems	53	3	5.7	3	5.7	2	3.8	12	22.6	0	0	31	58.5	9	17.0
3	Amenorrhea	46	6	13.0	2	4.3	8	17.4	9	19.6	0	0	19	41.3	10	21.7

- **Health consultants**

Males

As shown in the tables below (table 5.71–5.73), there were a small number of male responses in each stage of adolescence that having sexual and reproductive health problems. Therefore the findings are presented in a top three of sexual and reproductive health problems. The results also shown that most of sexual and reproductive health problems increased with age. However it indicated that health consultants varied depending on stage of adolescents and the type of problems. For reproductive health problems which were not related to sex activity (such as body and shape problem, hygienic care at genitalia, itching genital organ, burring urine etc.), most of them stated that parent were their health consultant. In contrast, the problems that related to sex activity (for instance sexual intercourse, masturbation, frequency of orgasm etc) they preferred peer as a consultant, some of them consulted nobody. Not surprising, older

male adolescents were more likely having problem on sexual intercourse than younger group.

Regarding to "place for visit when they face with problems", most of respondents of each stage of adolescents reported that they do nothing for their health problems.

Table 5.71 : Sexual and reproductive health problems of Early Male Adolescents and health consultant

No	Items	Having problem N = 73 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Body and shape problems	11	7	63.6	1	9.1	2	18.2	0	0	2	18.2	0	0	0	0
2	Frequency of orgasm	8	2	25.0	0	0.0	4	50.0	0	0	2	25.0	0	0	0	0
3	Hygienic care at genitalia	6	5	83.3	1	16.7	0	0.0	0	0	1	16.7	0	0	0	0
3	Burning urine	6	3	50.0	1	16.7	1	16.7	0	0	1	16.7	0	0	0	0

Table 5.72 : Sexual and reproductive health problems of Mid Male Adolescents and health consultant

No	Items	Problem N = 198 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Hygienic care at genitalia	25	6	24.0	2	8.0	11	44.0	1	4.0	7	28.0	0	0.0	1	4.0
2	Body and shape problems	23	12	52.2	3	13.0	9	39.1	0	0	4	17.4	0	0.0	0	0
3	Sexual intercourse with lover	20	3	15.0	1	5.0	13	65.0	0	0	5	25.0	0	0.0	0	0

Table 5.73 : Sexual and reproductive health problems of Late Male Adolescents and health consultant

No	Items	Problem N = 102 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Sexual intercourse with lover	32	3	9.4	1	3.1	18	56.3	0	0	12	37.5	0	0	0	0
2	Masturbation	16	2	13	0	0	9	56.3	0	0	6	37.5	0	0	0	0
2	Body and shape problems	16	6	37.5	1	6.3	6	37.5	0	0	4	25.0	1	6.3	1	6.3
3	Hygienic care at genitalia	14	6	43.0	3	21.0	4	28.6	0	0	4	28.6	0	0	0	0
3	Condom used	14	3	21.0	0	0	5	35.7	0	0	7	50.0	0	0	0	0

Females

As shown in the tables below (table 5. 74-5.76), similarity to males responses, there were a small number of female responses in each stage of adolescence having sexual and reproductive health problems. The results also shown that most of sexual and reproductive health problems increased with age. However it indicated that health consultants were varied depend on stage of adolescence and the type of problem and gender. Most of female respondents in each stage of adolescence reported that their health consultant were parent, exclude sex intercourse problems, they consulted nobody. Not surprising, older female adolescents were more likely having problem on sexual intercourse than younger group. Female adolescents more likely to consult parent about their sexual and reproductive health problems than male adolescents.

Table 5.74 : Sexual and reproductive health problems of Early Female Adolescents and health consultant

No	Items	Problem N = 130 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Dysmenorrhea	38	29	76.3	5	13.2	9	23.7	0	0	2	5.3		0.0	0	0
2	Amenorrhea	29	18	62.1	6	20.7	9	31.0	0	0	1	3.4	1	3.4	0	0
3	Body and shape problems	25	10	40.0	4	16.0	11	44.0	0	0	3	12.0	1	4.0	0	0

Table 5.75 : Sexual and reproductive health problems of Mid Female Adolescents and health consultant

No	Items	Problem N = 222 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Dysmenorrhea	109	80	73.4	13	11.9	33	30.3	0	0	8	7.3	2	1.8	0	0
2	Body and shape problems	79	44	55.7	14	17.7	42	53.2	0	0	8	10.1	0	0.0	0	0
3	Amenorrhea	60	40	66.7	7	11.7	18	30.0	0	0	6	10.0	1	1.7	0	0

Table 5.76 : Sexual and reproductive health problems of Late Female Adolescents and health consultant

No	Items	Problem N = 146 (Yes)	Health Consultatnt													
			Parent		Sibling		Peer		Youth leader		No body		Health staff		Other	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Dysmenorrhea	74	51	68.9	19	25.7	20	27	0	0	7	9.5	1	1.4	0	0
2	Body and shape problems	53	27	50.9	7	13.2	30	56.6	0	0	7	13.2	0	0	0	0
3	Amenorrhea	46	26	56.5	10	21.7	13	28.3	0	0	8	17.4	0	0	0	0

5.4 Depression

The Center of Epidemiologic Depression Scale (CES-D) was adopted as the tool to assess the depression level in this study. The CES-D is composed of twenty questions (some are negative, some are positive) related to the adolescents' feelings or behaviors during the past week. The response choice in the depressive symptom scales range from 0 (never/ rarely or less than 1 day in the past week) to 3 (most of the time or 5-7 days in the past week). As noted earlier, the CES-D has been tested in Thailand and the cutting point for Thai adolescents is 22 or more (indicating depression). For this study, the cutoff score of 22 was used to indicated the depressive symptom. For the presentation of this part, only those difference which have a P-value of 0.05 or less will be noted in the text.

5.4.1 Overall Depression

To obtain an overall CES-D score, the scores on the twenty above questions were combined. The minimum and maximum score were 0 and 55, range was 0–55. The mean and the Standard Deviation was 18.8 and 9.1 respectively.

Based on the previous study in Thailand, the Department of Mental Health, Ministry of Public Health indicated a cutoff score of 22 had been used in male adolescents to define cases of depression (Umaporn, 2000). Therefore, for the convenience of this study, the total scores were divided into roughly for 2 groups: 1) Scores less than 22 = Non- depressive symptoms group and 2) Scores were 22 or more = Depressive symptoms group.

As indicated in the table 5.77, 34.9% of the respondents in both genders reporting the CES-D scores were "22 score or more", with this proportion decreasing with age. It can be said that one third of the subjects have a depressive symptoms. Females were more likely than males to have depressive symptomatology. Moreover, the early adolescents were more likely to have depressive symptoms compared to other groups. However, there was a statistical difference in the distribution by gender and the level of depression (P-value < .001), and among the early and mid adolescent group there were also statistical differences in the distribution by gender and the level of depression at P-value = .027 and P-value = .002 respectively.

Table 5.77 : Simplify Symptoms of Depression (based on the cutoff point 22 scores) by Gender and Stage of Adolescence

Simplify Symptom of Depression	Males				Females				M & F			Total
	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	n %
No	53 (72.6)	144 (72.7)	73 (71.6)	270 (72.4)	74 (56.9)	130 (58.6)	93 (63.7)	297 (59.6)	127 (62.6)	274 (65.2)	166 (66.9)	567 (65.1)
Yes	20 (27.4)	54 (27.3)	29 (28.4)	103 (27.6)	56 (43.1)	92 (41.4)	53 (36.3)	201 (40.4)	76 (37.4)	146 (34.8)	82 (33.1)	304 (34.9)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

Difference (Male vs Female): P-value = <.001

Difference (Males vs Female) in Early Adolescents : P-value = .027

Difference (Males vs Female) in Mid Adolescents : P-value = .002

Several studies had been applied the CES-D for depression screening including the National Longitudinal Study of Adolescent Health, USA, the depression score was categorized into 3 levels: 1) Minimal depressive symptoms (0 –15), 2) Mild depressive symptoms, 3) Moderate/severe depressive symptoms (Roberts et al, 1991, Rushton L. J, et al, 2002). Using the criteria of these studied to identify the depressive symptomatology, the depression scores of present study were re-categorized into 3 levels. The results shown that most (40.6%) of the respondents reported "minimal" depressive symptoms, 31.5% "mild" depressive symptoms, and the balance (27.9%) reported "moderate/severe" depressive symptoms. There was a statistical difference in the distribution by gender and the level of depression (P-value = .002). In addition, among the mid adolescents, there also was a statistical difference in the distribution by gender and the level of depression at a (P-value = .002). It can be said that nearly 60% of the subjects had had "mild or moderate/severe" depressive symptoms.

Table 5.78 : Level of Depression (base on the study in USA) by Gender and by Stage of Adolescence (*Ref: RushtonL. Jerry 2002, Robert et al., 1991)*

Level of Depression	Males				Females				M & F			Total
	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	n %
Minimal (0-15 scores)	33 (45.2)	94 (47.5)	43 (42.2)	170 (45.6)	50 (38.5)	78 (35.1)	56 (38.4)	184 (36.9)	83 (40.9)	172 (41.0)	99 (39.9)	354 (40.6)
Mild (16 –23 scores)	23 (31.5)	65 (32.8)	33 (32.4)	121 (32.4)	35 (26.9)	68 (30.6)	50 (34.2)	153 (30.7)	58 (28.6)	133 (31.7)	83 (33.5)	274 (31.5)
High (³ 24 or more)	17 (23.3)	39 (19.7)	26 (25.5)	82 (22.0)	45 (34.6)	76 (34.2)	40 (27.4)	161 (32.3)	62 (30.5)	115 (27.4)	66 (26.6)	243 (27.9)
	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

Difference (Male vs Female) P-value = .002

Difference (Males vs Female) in Mid Adolescents : P-value = .002

5.4.2 By items included in Questionnaires

The study subjects were asked 20 questions about the depressive symptomatology in the past week. These were

- *I was bothered by things that usually don't bother me*
- *I did not feel like eating; my appetite was poor*
- *I felt that I could not shake off the blues*

- *I felt that I was just as good as other people*
- *I had trouble keeping my mind on what I was doing*
- *I felt depressed*
- *I felt that everything I did was an effort*
- *I felt hopeful about the future*
- *I thought my life had been a failure*
- *I felt fearful*
- *My sleep was restless*
- *I was happy*
- *I talked less than usual*
- *I felt lonely*
- *I felt people were unfriendly*
- *I enjoyed life*
- *I had crying spells*
- *I felt sad*
- *I felt that people dislike me*
- *I could not get "going"*

The CES-D's response of choice in the depressive symptom scales were ranged into 4 categories including:

Range 0 = never/ rarely (less than 1 day in the past week);

Range 1 = some or a little of time (1-2 day in the past week);

Range 2 = occasionally (3-4 days in the past week)

Range 3 = most of the time (5-7 days in the past week)

For this study, as the number of responses in some items were quite small, therefore the depressive symptom scale ranges were revised into 3 ranges:

Range 1: Rarely [less than 1 day in the preceding week];

Range 2: Sometime [1- 4 days in the preceding week], this was the combination of the CES- D's range 1 + range 2;

Range 3: Most of the time [5-7 days in the preceding week].

The results are presented as below. However, the table of these results are shown in the Appendix D table D.1-D.20.

1. I was bothered by things that usually don't bother me

Most 68.9% of the respondents reported that they "sometime" felt bothered by things that not usually don't bother them. Females were more likely to have feeling about the above mentioned "most of the time" than males. In contrast, males were more likely to have "rarely" of the mentioned feeling than females. It can be said that females were more likely to have a feeling about bothered by things that not usually bother them than males. Moreover, there was a statistical difference in the distribution by gender and by feeling bothered by things that not usually bother them (P-value = .002). Furthermore, among each stage of adolescence, there were also statistical differences in the distribution by gender and by feeling bothered by things that not usually bother them (P-value = .001 for early adolescents, P-value < .001 for mid adolescents and P-value = .002 for late adolescents respectively, Appendix D table D.1).

2. I did not feel like eating; my appetite was poor

More than one half (55.5%) of the respondents reported that they "sometime" had poor appetite. Females were more likely than males to have feeling about poor appetite. In contrast, males were more likely to have "rarely" of the mentioned feeling than females. It can be said that females were more likely to have a feeling poor appetite than males. Additionally, there was a statistical difference in the distribution by gender and by feeling poor appetite (P-value = .002) Moreover, among mid adolescents there also was a statistical difference in the distribution by gender and by feeling poor appetite (P-value < .001, Appendix D table D.2).

3 I felt that I could not shake off the blues

One half (49.7%) of the respondents indicated that they were "rarely" felt that they couldn't shake off the blues, of those, females were less likely to have the above feeling than males. However, nearly half (45.4%) of the subjects stated that they "sometime" have the mentioned feeling; among those, females were likely to have the

feeling that they "sometimes" couldn't shake off the blues than males. It can be said that females were more like (Appendix D table D.3).

4. I felt that I was just as good as other people

More than one half (55.9%) of the respondents reported that they "sometime" felt as good as other. Among those who indicated that they "most of the time" felt as good as others, early adolescents were less likely to have the mentioned feeling compared to other groups. Moreover, of those, who stated that they "rarely" felt as good as others, early adolescents were also more likely to have those feeling compared to other groups, these decreased with age. (17.3% for early adolescents 15.6% for mid adolescents and 8.1% for late adolescents respectively). Moreover, there was a statistical difference in the distribution by stage of adolescence and by feeling as good as others. (P–value = .016, Appendix D table D.4).

5. I had trouble keeping my mind on what I was doing

Most (69.9%) of the samples indicated that they "sometime" felt trouble keeping their mind on what they were doing. In contrast, few (4.6%) of adolescents reported that they had the above feeling "most of the time" (Appendix D table D.5).

6. I felt depressed

One half (50.2%) of the respondents indicated that they "sometime" felt depressed; of these, females were more likely to have the mentioned feeling than males (53.0% vs 46.4%). This increased with age. In contrast, of those who reported they "rarely" felt depressed, males more likely to have the mentioned feeling than females. These decreased with age. Few (2.1%) of the samples reported that they felt depressed "most of the time" It can be said that females were more likely to have feeling depressed than males and late adolescents were more likely to have feeling depressed compared to other groups (Appendix D table D.6).

7. I felt that everything I did was an effort

Nearly one half (49.5%) of the respondents stated that they "rarely" felt that everything they did was an effort, of those, males were more likely to have feeling that

everything they did was an effort than females. Few (3.2%) of respondents reported "most of the time" (Appendix D table D.7).

8. felt hopeful about the future Feeling hopeful about the future

Most (64.0%) of the respondents indicated that they "sometime" felt hopeful about the future. Furthermore, 21.8 % of the subjects reported they felt hopeful about the future " most of the time". Females were more likely to have the above feeling than males. Moreover, there were statistical differences in the distribution by stage of adolescence, by gender and by feeling hopeful about the future. (P–value = .007 and .003 respectively, Appendix D table D.8).

9. I thought my life had been a failure

One half (50.9%) of the respondents professed that they "rarely" felt that their lives had been failure. Few (2.3%) of subjects reported " most of the time". Among those who reported they "rarely" felt that their lives had been failure, late adolescents were more likely to have the above feeling compared to other groups (Appendix D table D.9).

10. I felt fearful

More than one half (58.9%) of the respondents indicated that they "rarely" felt fearful. Few (1.7%) of adolescents were "most of the time". Males were more likely to have "rarely" feeling about fearfulness than females (64.4% vs 54.75). Moreover, there was a statistical difference in the distribution by gender and by feeling fearful (P –value = .006). In addition, early adolescents were less likely to have a feeling fearful compared to other groups (Appendix D table D.10).

11. My sleep was restless

One half (51.2%) of the subjects stated that they "sometime" felt that their sleep was restless. Few (3.1%) of the adolescents were "most of the time". Among adolescents who reported their sleep was "rarely" restless, the early adolescents were more likely to have the above feeling compare to other groups, these decreased with age (Appendix D table D.11).

12. I was happy

Most (75.9%) of the respondents stated that they were happy "sometime". Few (7.0%) of the subjects reported "rarely" (Appendix D table D.12).

13. I talked less than usual talking less than usual

One half (50.1%) of the adolescents indicated that they "rarely" talked less than usual. Few (2.9%) of the respondents reported "most of the time". Females were more likely to talk less than usual than males (Appendix D table D.13).

14. I felt lonely

One half (50.3%) of the respondents stated that they "sometime" felt loneliness. Females were more likely to have the above feeling than males. Moreover, there was a statistical difference in the distribution by gender and by feeling loneliness (P–value = .003, Appendix D table D.14).

15. I felt people were unfriendly

Most (61.6%) of the adolescents stated that they "rarely" felt that people were unfriendly. Few (5.0%) of the subjects reported " most of the time". No gender difference was found (Appendix D table D.15).

16. I enjoyed life

Most (75.4%) of the respondents indicated that they "sometime" enjoyed life. Females were more likely to have feeling enjoy life than males. Few (7.4%) of the samples were " rarely". Late adolescents were less likely to have "rarely" feeling enjoy life compared to other groups (Appendix D table D.16).

17. I had crying spells

More than one half (57.8%) of the respondent indicated that they "sometime" had crying spell. Females were more likely to have crying spells than males (Table 5.93) . Moreover, there was a statistical difference in the distribution by gender and by crying spell (P–value < .001, Appendix D table D.17).

18. I felt sad

More than one half (55.5%) of the respondents stated that they "sometime" felt sad. Females were more likely to feel sad than males. Moreover, there was a statistical difference in the distribution by gender and by feeling sad (P–value < .001, Appendix D table D.18).

19. I felt that people dislike me

Most (62.2%) of the respondents reported that they "rarely" felt that people dislike them. Females were more likely to have the feeling that people dislike them than males (Appendix D table D.19).

20. I could not get "going"

Most (60.5%) of the respondents stated that they "rarely" felt that they couldn't get "going". Few (2.9%) of the adolescents reported "most of the time". Late adolescents were more likely to have the above feeling compared to other groups (Appendix D table D.20).

5.4.3 Relationships between Depression and Overall QoL

According to the number of responses who indicated having poor quality of life was small some cells were less than 5. Therefore, the overall QoL scores were re-categorized into 2 groups for the statistical analysis, these were: Group1 = poor and moderate QoL and Group 2 = high QoL. There was statistical difference in the distribution by the level of depression by the level of QoL and by gender (P–value < .001).

As indicted in table 5.79, among both genders and each gender, there also were statistical differences in the distribution by the level of depression by the level of QoL (P– value < .001).

Table 5.79 : Descriptive Analysis of Adolescents: Distribution by Symptoms of Depression, by Overall QoL and by Gender

Symptoms of Depression	Male				Female				M & F			
	Level of Poor n %	QoL Moderate n %	High n %	Total n %	Level of Poor n %	QoL Moderate n %	High n %	Total n %	Level of Poor n %	QoL Moderate n %	High n %	Total n %
No	5 (62.5)	174 (66.7)	91 (87.5)	270 (72.4)	4 (80.0)	185 (50.8)	108 (83.7)	297 (59.6)	9 (69.2)	359 (57.4)	199 (85.4)	567 (65.1)
Yes	3 (37.5)	87 (33.3)	13 (12.5)	103 (27.6)	1 (20.0)	179 (49.2)	21 (16.3)	201 (40.4)	4 (30.8)	266 (42.6)	34 (14.6)	304 (34.9)
Total	8 (100.0)	261 (100.0)	104 (100.0)	373 (100.0)	5 (100.0)	364 (100.0)	129 (100.0)	498 (100.0)	13 (100.0)	625 (100.0)	233 (100.0)	871 (100.0)

Difference (Level of QoL vs Level of Depression) in Both Gender: P-value = < .001

Difference (Level of QoL vs Level of Depression) in Male: P-value = < .001

Difference (Level of QoL vs Level of Depression) in female: P-value = < .001

5.4.4 Conclusions

The findings shown that one third of the subjects (34.9%) have a depressive symptoms. Females were more likely than males to have a depressive symptoms (40.4% vs 27.6%). There were strong statistical significant difference both gender and stage of adolescence and by depressive symptomatology (P-value < .001). Moreover, there were statistical significant difference by gender and by depressive symptomatology in early and late adolescents (P-value = .027, and < .001 respectively). In addition, the QoL and the depression found to be statistically associated in both genders and in each gender (P-value < .001).

5.5 Quality of Life (QoL)

5.5.1 The perceptions of adolescents towards Quality of Life

Quality of Life as an individual's perception (WHO 1996), therefore to understand more about the adolescent perception towards Quality of Life, a qualitative study had been conducted. The data collecting composed of in-depth interview and focus group discussion adolescents in the study community. The participants of focus group discussions participants composed of the in school & not in school male and female adolescents.

The results of the qualitative study are presented by gender as the following:

Male adolescents

In school male adolescents

The participants ages ranging was 13–22. The average age was 17. Most of them were studying in formal school as their age should supposed to be, one studied in informal school. They reported that all of them were single. There were various definitions of QoL defined by the in school male participants. However, most of them mentioned about "having money, having both parents and happy family, having opportunity to study. Some of them defined " QoL" as the following:

- having enough food
- having job
- living in good environment

Mr. Tee (17 years): " QoL mean having a chance for study, having job , having enough money"

Mr. Pot (17 years): " QoL was having enough money, enough food"

In term of the rating of the QoL from the total 10 scores, most of the participants indicated that the rating of their QoL were between 4 – 6. Some of them stated that their lives were in the middle way, the quality of life scores will be better once graduation or having a job or living in good environment (it means living in the community without drug illicit).

Mr. Tha (22 years): " QoL might be change once we graduate we get a job we have money , QoL will be better"

Not in school male adolescents

The ages ranging was 16–22, the average age was 18.8. Most of them graduated at grade 6, one of them graduated at grade 12. The other one stated that he had never been in school. Moreover 2 of them couldn't read or write. Most of them were daily

laborers, some were motorcyclist taxi. Nobody had permanent job. Most of them declared they were single, one was separated. The participants did not talk much about the definition of QoL, they had quite similar opinion about the QoL. Most of them defined QoL related having enough money, having comfortable life. Some indenfied QoL was having a chance for studying, having.

Mr. Pee (16 years): " QoL....um. .having comfortable life, having money for spend , isn't it?

In term of rating of the QoL, the "not -in school" male adolescents stated that their rating of QoL were between 0–5. Two of them rated themselves for "0" score for QoL, the reason for rating the above scores were they had no job and no house.

Mr. A (18 years): my Qol was "0", I have no job, no house"

Female adolescents

In school female adolescents

The ages ranging was 12–18, the average age was 15.3. Most of them were studying in formal school as their aged should supposed to be, one studied in informal school. All of them declared that they were single.

Among in school female adolescents, there were various definition of the QoL. Most of the participants defined the QoL were: happiness life, healthy life and having enough money. Some of them indicated QoL were:

- Living without any diseases
- No mental and physical problem
- having both parents and happy family
- Having job,
- having money
- Having a chance for studying and graduation as expectation
- Having knowledge

In term of rating of the QoL, most of the subjects stated that the rating of their QoL ranged between 4 – 6 . Most of them stated that their QoL was changeable. The better QoL was depended on the graduation or having job.

Pop (14 years): " .... My QoL may be around 6, I will grown up then get a job for my family".

Not in school female adolescents

Their ages ranging was 13–21, the average age was 14.1. All of them had stopped school 1 year or more. The lowest education background of the participants were grade 9 and the highest were the diploma level. Most of them declared that they were single, only one was separated (she had had baby since aged 16 years old)

Half of the "not in school female adolescents defined QoL was the healthy of the physical and mental. Some of them identified the QoL were"

- Daily life living
- Happy life
- Healthy and having a chance for studying
- Living in good environment (no pollution, free from drug abuses)
- Having good friend
- Having a happy family
- Having enough money

In term of rating of the QoL, the participants had rated their QoL ranged between 5-9. The adolescent who stated that her QoL was 9 , she had a job.

Ms. Ny (21 years) : ...I work in department store, ..I think my life 50% successful ...I think my QoL is around 9 ".

Ms. Add (15 years): "...I am in the middle of the life... I think ..my QoL ... may be 5".

WHO QoL vs Slum Adolescents' QoL

The results of the qualitative study about the adolescents' perception towards QoL were reviewed for grouping to compare with the WHO-QoL. The finding are summarized as below (table 5.80).

Table 5.80 : The comparison of the perceived of adolescents' QoL and the QoL definition by WHO

Domain	QoL (Adolescent' perception)	QoL (WHO definition)* Facet incorporated within domains
1. Physical	- Being healthy - No physical problems	- Activities of daily living - Dependence on medicinal substances and medical aids - Energy and fatigue - Mobility - Pain and discomfort - Sleep and rest - Work capacity
2. Psychological	- Happy family - Happiness - No mental health problems	- Bodily image and appearance - Negative feelings - Positive feelings - Self-esteem - Spirituality/religion/personal beliefs - Thinking, learning, memory and concentration
3. Social relationships	- Having good friend - Having both parent at home	- Personal relationships - Social support - Sexual activity
4. Environment	- Having money - Living in good environment (no pollution, free from illicit drugs) - Having job - Having change for studying and graduation as per their expectation.	- Financial resources - Freedom, physical safety and security - Health and social care: accessibility and quality - Home environment - Opportunities for acquiring new information and skills - Participation in and opportunities for recreation/ leisure activities - Physical environment (pollution/noise/traffic/climate) - Transportation
5 Level of QoL	Most of them reported that their QoL were moderate (4 - 6 scores based on 10 scores)	The results indicated that most of the respondent indicated that their QoL was moderate (71.8%)

*Source: WHOQoL-Bref - Instructions, Field Trial Version December 1996

5.5.2 Adolescents' Quality of Life as measure by WHOQoL- BREF

As previous mentioned, the four domains and over all QoL assessment with 26 questions were designed to measure quality of life: overall quality of life and general

health facet, physical domain, psychological domain, social domain and environmental domain. The 5-point response scale ranges from "1" to "5" with the alternatives:

1 = very poor/very dissatisfied/not at all;

2 = poor/ dissatisfied/a little;

3 = neither poor nor good/neither satisfied nor dissatisfied/a moderate amount;

4 = good/satisfied/very much;

5 = very good/very satisfied/an extreme amount

The total scores could range from 26 (lowest quality of life) to 130 (highest quality of life). As motioned earlier, the WHOQoL BREF was translated–retranslated into Thai and, moreover, it has been tested in Thailand (Suwat, M et al.1996). In connection with this study, the Thai- WHOQoL BREF was adopted for measuring the adolescents' Quality of life; it had been found to have Cronbach Alpha of 0.82. Most of the differences by gender, by age groups and by gender and age groups were not significant by Chi-square analysis. Only those difference which have a P-value of 0.05 or less will be noted in the text. The results of twenty six questions of QoL are presented in the Appendix:E.

In the present study, as the number of responses in some items were too small for some statistical analyses, the QoL scales ranges were revised into 3 groups. There were:

1. "Poor/dissatisfied/a moderate amount"; this range was the combination of the previous range 1 + range 2;
2. "Neither poor nor good/neither satisfied nor dissatisfied/a moderate amount";
3. "Good/satisfied/very much" this range was the combination of the previous range 4 + range 5.

5.5.2.1 Overall assessment and general health facet

The overall assessment and general health facet of the WHOQoL BREF were based upon two questions; these questions are presented below (a and b).

a) Rating of QoL

More than one half (58.4%) of the subjects indicated that their quality of life was "Neither poor nor good". One third (33.2%) of the respondents reporting "Good". Younger adolescents were more likely to have a better quality of life than the older; this proportion decreased with age (40.3% for early adolescents, 34.3% for mid adolescents and 25.4% for late adolescents respectively). Furthermore, there was a statistical difference in the distribution by rating of QoL and stage of adolescence (P-value = .001).

Table 5.81 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by Rating of quality of life

Rating of QoL	Male				Female				M&F			
	Early n (%)	Mid n (%)	Late n (%)	Total n (%)	Early n (%)	Mid n (%)	Late n (%)	Total n (%)	Early n (%)	Mid n (%)	Late n (%)	Total n (%)
Poor	10 (13.6)	15 (48.0)	8 (7.8)	33 (8.8)	13 (10.0)	20 (9.1)	7 (4.8)	40 (8.0)	23 (11.3)	35 (8.3)	15 (6.1)	73 (8.4)
Neither poor nor good	31 (42.5)	102 (51.5)	71 (69.6)	204 (54.7)	67 (51.5)	139 (62.6)	99 (67.8)	305 (61.2)	98 (48.4)	241 (57.4)	170 (68.5)	509 (58.4)
Good	32 (43.8)	81 (40.9)	23 (22.6)	136 (36.4)	50 (38.5)	63 (28.4)	40 (27.4)	153 (30.3)	82 (40.4)	144 (34.3)	63 (25.4)	289 (33.2)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

Difference Early/Mid/Late: P-value = .001

b) Satisfaction with their health status

Nearly one half (48.6 %) of the subjects reported that they were "satisfied" on their health status. Controversy, only 13.8% of the respondents stated that they were "dissatisfied" with the health status. Females were more likely than males (19.9% vs 11.2%) to be dissatisfied with their health status, this proportion increased with age. Additionally, late adolescents were more likely to feel dissatisfy with their health status compared to other groups. Moreover, among mid adolescents, there was a statistical difference in the distribution by gender and by satisfaction on health status (P-value = .008).

Table 5.82 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by Satisfaction with their health status

Satisfaction with their health status	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Dissatisfied	6 (8.4)	16 (8.3)	19 (19.0)	41 (11.2)	15 (11.5)	37 (16.9)	26 (17.9)	78 (15.8)	21 (10.4)	53 (12.8)	45 (18.4)	119 (13.8)
Neither dissatisfied nor satisfied	29 (40.3)	67 (34.5)	37 (37.0)	133 (36.3)	48 (6.9)	84 (38.4)	58 (40.0)	190 (38.5)	77 (38.1)	151 (36.6)	95 (38.8)	323 (37.6)
Satisfied	37 (51.3)	111 (57.2)	44 (44.0)	192 (52.5)	67 (51.5)	98 (44.8)	61 (42.1)	226 (45.7)	104 (51.5)	209 (50.6)	105 (42.9)	418 (48.6)
Total	72 (100.0)	194 (100.0)	100 (100.0)	366 (100.0)	130 (100.0)	219 (100.0)	145 (100.0)	494 (100.0)	202 (100.0)	413 (100.0)	245 (100.0)	860 (100.0)
Missing	1	4	2	7	0	3	1	4	1	7	3	11
%missing	1.4	2	2	2	0	2.2	1	0.8	0.5	1.8	2.2	1.5

Difference (Male vs Female) in Mid Adolescents: P-value = .008

c) Summation of the overall QoL and general health

Two questions of the overall QoL and general health facet of the WHOQoL BREF were combined to measure the level of QoL of this group. As the recommended by WHO, there were 3 levels of the overall assessment and general health facet including: 1) Poor = 2- 4; 2) Moderate = 5–7; and 3) High = 8–10. The results showed that most (62.9%) of the adolescents indicated that their overall QoL and general health were "moderate". Few (1.4%) of the subjects reported that their QoL was "poor". Males were more likely than females to report that their overall QoL and general health were "high". Moreover, early adolescents were more likely to have better overall QoL and general health compared to other groups. There was a statistical difference in the distribution by overall QoL and general health and by gender (P-value = .018).

Table 5.83 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by Overall assessment and general health facet

Overall QoL and general health	Male				Female				M &F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Poor	6	12	14	32	5	21	10	36	11	33	24	68
	(8.2)	(6.1)	(13.9)	(8.6)	(3.8)	(9.5)	(6.8)	(7.2)	5.4%	(7.9)	9.7	7.8
Moderate	40	112	62	214	82	148	103	333	122	260	165	547
	(54.8)	(56.6)	(61.4)	(57.5)	(63.1)	(66.7)	(70.5)	(66.9)	(60.1)	(61.9)	(66.8)	(62.9)
High	27	74	25	126	43	53	33	129	70	127	58	255
	(37.0)	(37.4)	(24.8)	(33.9)	(33.1)	(23.9)	(22.6)	(25.9)	(34.5)	(30.2)	(23.5)	(29.3)
Total	73	198	101	372	130	222	146	498	203	420	247	870
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
Missing			1									1
%missing			(1)									(0.1)

Difference (Male vs Female): P-value = .018

5.5.2.2 QoL's domains

The summation of four domains of QoL composed of physical domain, psychological domain, social domain and environmental domain are presented as follows.

Physical domain

a) Physical Domain

The physical domain of the WHOQoL BREF consisted of 7 questions. These were: a) To what extent do you feel that physical pain prevents you from doing what you need to do?; b)Having enough energy for everyday life; c) Satisfaction with their sleep; d) Satisfaction with their ability to perform their daily living activities; e) Need for Medical treatment to function their daily life; f) Satisfaction with their capacity for work/study; and g) Ability to go around by themselves. The above seven questions of this domain were combined for measuring the level of QoL of this domain. As the WHO recommendation, there were 3 levels of the physical domain including; 1) Poor = 7-16 scores; 2) Moderated = 17–26 scores and 3) High = 27–35 scores. According to the number of some items in poor QoL level were quite small for some statistical analyses (appendix E, table E.3B), therefore, the physical domain's QoL scale ranges were revised into 2 groups (poor /moderate level and high level).The results indicated that most (80.0%) reported that the Level of QoL of Physical Domain were

poor/moderate. However, there was no statistical difference found in the distribution by the level of QoL of physical domain and by gender or stage of adolescence .

Table 5.84 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by Level of QoL of Physilogical Domain (2 scale ranges)

Level of QoL of Physical Domain	Male				Female				M & F			
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	Total
Poor & Moderate	54 (73.9)	162 (81.8)	85 (83.3)	301 (79.7)	105 (80.8)	179 (90.6)	112 (76.7)	396 (79.5)	169 (78.3)	341 (81.2)	197 (79.4)	697 80.0)
High	19 (26.0)	36 (18.2)	17 (16.7)	72 (19.3)	25 (19.2)	43 (19.4)	34 (23.3)	102 (20.5)	44 (21.7)	79 (18.8)	51 (20.6)	174 (20.0)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

b) Psychological Domain

The Psychological domain of the WHOQoL BREF consisted of 6 questions, these included: a) Feeling enjoy life; b) Ability on the concentration about their work/study; c) Satisfaction with themselves; d) Acceptance of bodily appearance; e) Having frequently of negative feeling; and f) Feeling life is being meaningful. The summation of the level of QoL of Psychological Domain, six questions of the psychological domain of the WHOQoL BREF were combined for measuring the level of QoL of this domain. As per the WHO recommendation, there were 3 levels of the psychological domain's QoL including: 1) Poor = 6-14; 2) Moderate = 15–22 and 3) High = 23–30. As the number of responses in poor QoL level were quite small for some statistical analyses (appendix E, table E.3C), therefore, the level of QoL of psychological domain scale ranges were re-categorized into 2 groups: 1) poor & moderate level and 2) high level. Most (64.9 %) of the samples indicated that the level of QoL of psychological domain were "poor/moderate" . No gender or age group difference was found.

Table 5.85 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by Level of QoL of Psychological Domain (2 scale ranges)

Level of QoL of psychological Domain	Male				Female				F & M			Total
	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	n %
Poor& Moderate	46 (63.0)	130 (65.7)	61 (60.4)	237 (63.7)	86 (66.2)	148 (66.7)	94 (64.4)	328 (65.9)	132 (65.0)	278 (66.2)	155 (62.8)	565 (64.9)
High	27 (37.0)	68 (34.3)	40 (39.6)	135 (36.3)	44 (33.8)	74 (33.3)	52 (35.6)	170 (34.1)	71 (35.0)	142 (33.8)	92 (37.2)	305 (35.1)
Total	73 (100.0)	198 (100.0)	101 (100.0)	372 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	247 (100.0)	870 (100.0)
Missing	0	0	1	1	0	0	0	0	0	0	0	1
%missing	(0)	(0)	1.0	0.3	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0.1

Social domain

Three questions of the social domain of the WHOQoL BREF consisted of 1) How satisfied are you with your personal relationships? 2) How satisfied are you sex life? 3) How satisfied are you with the support you get from your friend?, these were combined for measuring the level of QoL of the above mentioned domain. However, the results of each question are presented in the appendix E, table E.3D. As per the WHO recommendation, there were 3 levels of the psychological domain's QoL including: 1) Poor = 3-7; 2) Moderate = 8–11 and 3) High = 12–15. The results revealed that most (63.8%) of adolescents indicated that the social domain of the WHOQoL BREF were "moderate level". There was a statistical difference in the distribution by the social domain of the WHOQoL BREF and by stage of adolescence (P-value = .008). Moreover, among males, there was also a statistical difference in the distribution by the social domain of the WHOQoL BREF and by stage of adolescence (P-value = .004, table 5.86).

Table 5.86 : Desscriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by Level of QoL of Social Domain

Level of QoL of Social Domain	Male				Female				M & F			Total
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
Poor	18 (24.7)	25 (12.6)	10 (9.8)	53 (14.2)	19 (14.6)	30 (13.5)	10 (6.8)	59 (11.8)	37 (18.2)	55 (3.1)	20 (8.1)	112 (12.9)
Moderate	31 (42.5)	122 (61.6)	71 (69.6)	224 (60.1)	81 (62.3)	153 (68.9)	98 (67.1)	332 (66.7)	112 (55.2)	275 (65.5)	169 (68.1)	556 (63.8)
High	24 (32.9)	51 (25.8)	21 (20.6)	96 (25.7)	30 (23.1)	39 (17.6)	38 (26.0)	107 (21.5)	54 (26.6)	90 (21.4)	59 (23.8)	203 (23.3)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

Difference (Early/Mid/Late Adolescents) : P-value = .008

Difference (Early/Mid/Late Adolescents) in Male Adolescents: P-value = .004

Environmental Domain

Eight questions of the environmental domain of the WHOQoL BREF composed of: 1) Feeling safe; 2) Satisfaction with condition of their living place; 3) Money and their need; 4) Satisfaction with health services accessibility; 5) Availability on the day to day information needed; 6) Having opportunity for leisure activities; 7) Rating of the healthy of their physical environment; and 8) Satisfaction with their transportation, were combined for measure the level of QoL of this domain. The results of each question are presented in the appendix E, table E.3E. As the WHO recommendation, there were 3 levels of the environmental Domain Environmental Domains's QoL including: 1) Poor = 8-18 scores; 2) Moderated = 19–29 scores and 3) High = 30-40 scores. As the number of responses in some items were too small for statistical analyses, thus, the level of QoL of Environmental Domain scale ranges were re-categorized into 2 groups: 1) poor & moderate level and 2) high level. The results revealed that most (83.6%) of adolescents indicated that the Environmental Domain of the WHOQoL BREF were "moderate level". There was statistical difference in the distribution by environmental domain of QoL and by stage of adolescence (P-value = .036).

Table 5.87 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by the Environmental Domain of QoL

Environmental Domain of QoL	Male				Female				M & F			Total
	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	Total n %	Early n %	Mid n %	Late n %	n %
Poor &Moderate	55 (75.3)	161 (81.3)	88 (86.3)	304 (81.5)	103 (79.3)	195 (87.8)	126 (86.3)	424 (85.1)	158 (77.8)	356 (84.7)	214 (86.3)	728 (83.6)
High	18 (24.7)	37 (18.7)	14 (13.7)	69 (18.5)	27 (20.8)	27 (12.2)	20 (13.7)	74 (14.9)	45 (22.2)	64 (15.2)	34 (13.7)	143 (16.4)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

Difference (Early/Mid/Late Adolescents) : P-value = .036

For more understanding, the below tables presented the distribution of the level of QoL of each domain (Physiological, Psychological, Social Domain, Environmental Domain and Overall QoL & general health) and by Gender. It shown that most of the differences by gender was not significant by Chi-square analysis.

Table 5.88 : The level of QoL of each domain (Physiological , Psychological , Social Domain and Environmental) by Gender

Physiological Domain	Male	Female	Total
Poor	9 (2.4)	3 (0.6)	12 (1.4)
Moderate	292 (78.3)	393 (78.9)	685 (78.6)
High	72 (19.3)	102 (20.5)	174 (20.0)
Total	373 (100.0)	498 (100.0)	871 (100.0)

Psychological Domain	Male	Female	Total
Poor	16 (4.3)	24 (4.8)	60 (6.9)
Moderate	221 (59.4)	304 (61.0)	565 (64.9)
High	135 (36.3)	170 (34.1)	305 (35.1)
Total	372 (100.0)	498 (100.0)	870 (100.0)

Social Domain	Male	Female	Total
Poor	53 (14.2)	59 (11.8)	112 (12.9)
Moderate	224 (60.1)	332 (66.7)	556 (63.8)
High	96 (25.7)	107 (21.5)	203 (23.3)
Total	373 (100.0)	498 (100.0)	871 (100.0)

Environmental	Male	Female	Total
Poor	18 (4.8)	34 (6.8)	52 (6.0)
Moderate	286 (76.7)	390 (78.3)	676 (77.6)
High	69 (18.5)	74 (14.9)	143 (16.4)
Total	373 (100.0)	498 (100.0)	871 (100.0)

Overal QoL	Male	Female	Total
Poor	32 (8.6)	36 (7.2)	68 (7.8)
Moderate	214 (57.5)	333 (66.9)	547 (62.9)
High	126 (33.9)	129 (25.9)	255 (29.3)
Total	372 (100.0)	498 (100.0)	870 (100.0)

Difference: Male vs Female in overall QoL, P-value = .018

5.5.2.3 *Summation of adolescents' QoL (all domains and overall assessment)*

The WHOQoL BREF comprised of 6 domains with 26 questions. The total were categorized into 3 groups for QoL measurement, these were: 1) Poor = 26–60 scores; 2) Moderate = 61–95 scores ; and 3) High = 96–130 score (WHO 1995). Most (71.8%) of the adolescents indicated that the level of their Quality of Life's were "moderate". Very few (1.5%) of the respondents were "Low" (appendix E, table E.3F).

As the number of responses in some items were too small for some statistical analyses, thus, the QoL scale ranges were re-categorized into 2 groups: 1) poor & moderate level and 2) high level. There was no statistical difference in the distribution by level of QoL and by gender or by age group or by gender of each age group.

Table 5.89 : Descriptive Analysis of Adolescents: Distribution by Stage of Adolescence (age) by Gender and by the summation of adolescents' QoL

Level of Quality of Life	Male				Female				M&F			Total
	Early	Mid	Late	Total	Early	Mid	Late	Total	Early	Mid	Late	
	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %	n %
Poor & Moderate	51 (69.8)	141 (71.2)	77 (75.4)	269 (72.1)	94 (72.3)	167 (75.2)	108 (74.0)	369 (74.1)	145 (71.5)	308 (73.3)	185 (74.6)	638 (73.3)
High	22 (30.1)	57 (28.8)	25 (24.5)	104 (27.9)	36 (27.7)	55 (24.8)	38 (26.0)	129 (25.9)	58 (28.6)	112 (26.7)	63 (25.4)	233 (26.8)
Total	73 (100.0)	198 (100.0)	102 (100.0)	373 (100.0)	130 (100.0)	222 (100.0)	146 (100.0)	498 (100.0)	203 (100.0)	420 (100.0)	248 (100.0)	871 (100.0)

5.5.2.4 Conclusion

Quality of life is a unique personal issue; it is the subjective perception of how individual feels about their health status and/or the non- health aspects of their lives difficult concept to define. However, the perceptions towards QoL in adolescents using qualitative data collection , the results shown that the respondents defined QoL in may ways, there were various terms related to QoL stated by the participants. However many of them stated that QoL were: having money, having both parents in family, having happy family, having opportunity to study and so on. Additional, the rating of their QoL were moderate.

The quantitative study for measuring adolescents' QoL using WHO-BREF, the results shown that about three fourth (71.8%) of the adolescents indicated that the level of their Quality of Life's was "moderate", a few (1.5%) was "poor". Among each domain (Physiological, Psychological, Social and Environmental Domains), there was no statistical differences in the distribution by level of QoL and by gender or by age group or by gender of each age group in "Physiological Domain" and "sychological Domain". In contrast, there were statistical differences in the distribution by level of QoL and by gender in "overall QoL and General Health" at a P-value .018. Moreover, there was statistical difference in the distribution by level of QoL of "Social Domain" and by age group of total sampling and among males (by gender, P-value = .004 and by age group in Males, P-value = .004). There was statistical difference in the distribution by level of QoL of "Environmental Domain" (and by age group, P-value = .004). In addition, there was statistical difference in the distribution by level of QoL of "Social Domain" (P-value = .004), and "Environmental Domain" by gender and by stage of adolescence (social domains: P-value = .008, Environmental Domain : P-value = .036), Social Domain: gender difference found P-value = .004). In term of "Environmental Domain" there were statistical differences in the distribution by level of QoL and "Environmental Domain" (P-value = .008, P-value = .008), additionally, among males, (P-value = .008) by age group. by age group or by gender of each age group. Similarly, the results of the qualitative study using focus group discussion also indicated that the quality of life in participants were moderate.

5.6 Advice from Stakeholders for Reducing gaps, Fragmentation and Redundancy of Services

Focus group discussion had been formulated among adolescents. One of the objectives of focus group discussion was to identify gaps, fragmentation and redundancy of services. As mentioned earlier, the participants of focus group discussions were the in school and not- in school adolescents both gender. The finding are presented by gender and by current education status as below.

Finding

Male adolescents

In school male adolescents

In term of adolescents' health services needs for not – in school male adolescents, there were various opinions, these are included:

- friendly health personnel
- adolescent center should be available within community
- having fitness/sport club/exercise instruments in the community
- friendly counseling

Mr. Air (15years) : " if it possible, I like to have the adolescent center within the community with doctors or nurses work in the center and they should be kindness person. "

Pong (13 years): "I like to have exercise, sport area for adolescents"

Not- in school male adolescents

Their desire on adolescents' health services are as the following:

- Accident and injury services such as a splint, first aids for fracture
- Drug therapeutic program located within community with friendly staff

Mr. Mo (21 years): "I think it should has drug addiction center, drug addict counseling within community with friendly staff"

Female adolescents

In school female adolescents

Most of the in school female adolescents indicated that the health services should have confidential services. Some suggested that the reproductive health services such as consultation for abortion and sexuality should be available for adolescents. Few of them requested various services for the adolescents including:

- mental health services with consultation;
- drug therapeutic program within community;

- fitness center with exercise facilities.
- sex education and counseling

Ms. Nine (16 years) "I like to have drug therapeutic center in community for adolescents"

Ms.Pop (14 years): "it should has sex education and sex counseling for adolescents, and they should understand (the nature) of adolescent"

Not in school female adolescents

Most of the participants stated that they need the good services with the confidentiality for drug addict therapeutic in community. Furthermore, some of them requested for the fitness and exercise facilities. Few of them suggested that the family activities should available in the community. The youngest participants asked for the play ground and sport equipments.

Ms. Abb (15 years): "I think it should has drug treatment and counseling in the community with good staff (friend staff)."

Additionally, In-depth interviews had been formulated among various people who involving in adolescent health programs in the community. One of the objectives of in-depth interview was to seek advise from stakeholders for reducing gaps, fragmentation and redundancy of services. As mentioned earlier, the stakeholder were: two health officers, Two NGO (Duang Prateep Foundation) staffs, two health volunteers, one community leaders, one youth leaders and four housewives.

Findings

The findings of in-depth interviews on the opinions for reducing gaps, fragmentation and redundancy of services are presented as the following

- Health officers

He stated that several services were available for adolescents at the health center including health education and curative, however, with a lot of workload there was no any special adolescent project. He suggested that youth group should take a major role for adolescent health program.

> *Dr. A: "I would like to initiate a core youth group to work with us, then establish an adolescent center, finally, this group will pursue other teens to participate in the adolescent center. It means the (adolescent) center initiate by teen for teen".*

Additionally, the other health staff mentioned school, core people in community such as youth leader, community leader. She state that the above groups work faster and more effective than others.

> *Mrs. B: "most of teen are in school therefore I would like to work with school teacher. More over, NGO and core group in the community, most of them work in specific issue, they work rapidly in some tasks."*

- NGO (Duang Prateep Foundation) staff

One of the NGO staff suggested that government should take more action in transfer proper knowledge regarding to health promotion to adolescents. The tools and materials for dissemination information and knowledge should be consider about the appropriate and suitable for adolescents in each group. The other one mentioned about adolescent health center with trained staff should be set up for young people in the community. Additional, the privacy and confidentiality were needed for the services.

- Health volunteers and housewife

They suggested that several sport areas should be managed, this could prevent the teen from drug addict problem. Some of them stated that adolescent themselves should participate in adolescent health program in community.

- Community leader

He suggested that sport area including recreation area for adolescent and children should be initiated. Moreover, he mentioned that government should pay more attention in adolescent health and work closely with community leaders or others.

- Youth leaders

He indicated that sport area and fitness in the community should be set up for children and teen. Moreover, he mentioned that it should be a good collaboration among involving people who work for adolescent.

Conclusions

As the findings indicated above, it can be said that most of stakeholders realized that there were gaps, fragmentation and redundancy of services. Several ideas and programs were mentioned to reduce gaps, fragmentation and redundancy of the services, these were including reproductive health services for adolescent (such as consultation for abortion and sexuality), mental health services, services with confidentiality, setting up adolescent health services within community, expanding playground and exercise facilities, family activities and so on. Most of stakeholders agreed that partnership will be one key component for improving adolescent health.

5.7 Partnerships: Feasibility to Process for Reducing Gaps, Redundancy, Fragmentation of Services, Improving QoL and Alleviation of Depression

The findings of focus group discussions among adolescents about their opinions towards other potential people/organizations who might improve adolescent health program in the community are presented by gender and by current education status (in school vs not in school) as the following.

Male adolescents' opinion about other potential people/organization who will improve adolescent health program in the community

In school male adolescents

Most of the participants had known that the Health Center 41 has provided health care for people in the community, the blue uniform staff had been periodically visited people in the community, however, they had no idea about what kind of services that the health staff had worked in the community. Nobody had been heard about community health volunteer, some of them knew a few Duang Prateep Foundation's staff. Some of them has been worked as a youth volunteer with this foundation. Most of them knew the community leader, they stated that the community leader worked as a messenger for dissemination of health information such as Dengue hemorrhagic prevention, drug abuse prevention and so on. Few of them had known the role of housewife groups. They stated that housewife group mostly they worked in their own group for income generation. Consequently, they had not much idea about which group could help for improving adolescent health. Some of the subjects mentioned that DPF' workers could continue for sex education in the community. Some of tem stated that the community leader could work as a health communicator.

Mr. One (17 years): "Duang prateep should continue work coordinately with community leaders, youth leaders."

Not-in school male adolescents

Most of the participants had knew DPF, some had been worked with this NGO as a temporary volunteer worker. Most of them had no idea about other community organization who will work for adolescent.

Mr. Tho (20 years) : "I have no idea...., I don't know who work for what"

Female adolescents' opinion about other potential people/organization who will improve adolescent health program in the community

In school female adolescents

In term of the opinion about other potential people /organization who will improve adolescent health program in this community, some of the participants had

mentioned the DPF (NGO) for adolescent health program. However, many of them had no idea for this issue.

Ms. Vee: " ... I know Pee Su (Douang prateep foundation's staff) ... she work hard with teen in community, I think she should continue her work...."

Not in school female adolescents

Few of the not in school female adolescents indicated youth leader and DPF (NGO) staff for working on adolescent health. Most of them had not much idea in this issue.

Additionally, In- depth interviews had been formulated among various people who involving in adolescent health programs in the community. One of the objectives of in-depth interview was to explore stakeholders' opinion regarding to partnerships and possibility to process for reducing gaps, redundancy, fragmentation of services, improving QoL and alleviation of depression. The in-depth interview guideline was about "Is working as partnerships can solve Adolescents' health problem?" As mentioned earlier, the stakeholder were included two health officers, two NGO (Duang Prateep Foundation) staffs, two health volunteers, one community leaders, one youth leaders and four housewives.

Findings

- Health officers

The health officers agreed that a partnerships concepts was essential component for improving adolescent health especially in this community. He stated that Klong Teay was a risky community for adolescent that lead to drug abuse, criminal, violence that harm for adolescents, health center alone couldn't solve adolescents' health problem. He suggested that local organizations (such as community leader, community health volunteer and adolescent) should participate and take action for improving adolescents' health.

Mrs. B (47 years): "....we need to coordinate with community health volunteer, community leader, parent and youth group particularly for not- in school adolescent, we have to initiate a group of adolescent divide adolescent into 2 groups such as group 1) adolescents who have problem and group 2) adolescent who have no problems because their needs/ problem of the above group are different so that we can plan for activities or services."

- NGO (Duang Prateep Foundation) staffs

She strongly agreed on a partnerships working for improving adolescent health in community. She stated that working alone was impossible to solve adolescents' health problem, team work was a key component for the successfulness as nobody known every thing or can do everything.

She nominated school as a local partner, moreover, the Department of Health, the Department of Mental Health should work closely with the community to create mutual benefit.

Ms. O (41 years) "adolescent health problems are so complicate we can't work alone, schools, and department of health should participate in this matter."

- Health volunteers and housewives

The respondents stated that they still didn't clear about the partnerships concept, however, they had the opinions that working as a team was better than working alone. Some of them suggested that adolescents should take action for working with concerned people for their health. Some of housewives stated that parent should participate as a partner for adolescents health. Some of them suggested that adolescents should take action for working with concerned people for their health. The health volunteers, they stated that adolescent health problems particularly, amphetamine addict, not only parent but also police should be involve for solving this problem.

She suggested parent should take more action and work with community for prevent drug addict in adolescent. Some of housewives stated that parent should participate as a partner for adolescents health.

Mrs. Nut (41 years, housewife): "housewife group can't do much for adolescent health problem, parents are the most important person who can help community to decrease adolescent problems"

- Community leaders

He agreed that for the partnerships concept for solving adolescent health problem, especially, drug abuse problems. He mentioned that the local politician should join the community for assisting to solve adolescents' health problem. He nominated police and parent for the partnerships.

Mr Pai (36 years) : "some problems for example heroin/ amphetamine addict need polices and BMA politicians to help us"

- Youth leaders

He nominated adolescents to be a part of committee to solve adolescents' health. Adolescent. In addition, the local politicians were also significant person in term of authority and financial support.

Mr. Sak (22 years): "Sor Kor (BMA politician) should pay more attention in adolescent health problem, he should work closely with people in community"

- School teacher

He mentioned that parent and peer should involve for improving adolescent health.

Conclusion

The findings of focus group discussion indicated that many of adolescents had no idea about other community organizations who will work for adolescent program.

However most of them perceived that DPF was an effective NGO in working for adolescents, some stated that the community leaders could be a health communicator for adolescent health program, few of them mentioned about youth leader should be work on adolescent health program. It can be said that adolescents realized that improving adolescent health in community partnerships is needed. In term of the opinion of other stakeholders, the results indicated that they also indicated that partnership was essential for adolescent health project in the community.

5.8 Implication of Qualitative Data and Quantitative Data for Development of an Intervention Program.

5.8.1 Implication of Qualitative data as an in put for planning

Based on the findings of qualitative study using in-depth interview and focus group discussion, there were several issues that need to be addressed as an in put for planning. The following are major issues from the qualitative study.

- Expand adolescents health center in the community
- Provide information about adolescent health services that available in the community
- Time conflict for adolescent health services utilization
- Training on adolescent health for health officers, local organizers and peer.
- Friendly provider (improve the behaviour of health officers)
- Mental health counseling to prevent depression and other mental health problems
- Drug addict counseling in the community
- Aware of confidentiality
- Coordination in working
- Partners for working
- Budgeting
- Adolescent participation

5.8.2 Implication of Quantitative data as an in put for planning

Based on the results of household survey, there were several issues that need to be addressed as an in put for planning. The following are major issues for planning raised from the both univariate and multivariate analysis.

- Availability of health providers at health facilities
- Time convenience for visit health facilities
- Increase satisfaction of health services for increasing the utilization
- Create awareness both clients (adolescents) and providers
- Providing effective sex education gender and age groups need to be considered.
- Increase the adolescent's health service utilization
- Establish an effective mental health counseling
- Provide information about adolescent health services in the community
- Improve reproductive health education
- Improve the quality of care of reproductive health services

The finding of both qualitative and quantitative study were combined into one report. The report was simplified for easy understanding to concerned people in the community. A group discussion with 15 participants was held at Duang Prateep Foundation office aimed to share the information of the current study to stakeholders including development of an action plan and evaluation for improving adolescent health in term of health accessibility, depression and quality of life. The participants consisted of the health officer, NGO officers, teacher, community leader, community health volunteers, housewife group, youth leader, teenagers, and a research team from Chulalongkorn University. The major conclusions of the group discussion related to a plan of action and evaluation were:

Phase 1 (3 months)

Situation analysis

A situation analysis is the most appropriate initail approach in usualy low-cost, that supplies the prelilminary answers necessary for intellegent efforts to develop or strengthen health programs (The partnerships for Child Development, 1999). Moreveor,

a situation analysis are useful for identifies major gaps and problem with, existing adolescent and suggests remedies. The process of information for situation analysis also proviedes an opportunity to establish partnershiops among relevant groups and organizations. The information for a situation analysis may come from an assessment of existing information, researh/projet findings, interview key informants , etc. health services This workshop was convened with representatives from various gorups in the community. An icebreaking exercise was conducted, to permit the community members to get to know each other. The issues about health services and in the community was reviewed and cross-checked by the participants. During the session, the participants were encouraged to share their opinions and experiences freely.

Identify activities/services

Each idvidual/organization detailed its activities, services and objectives, and the problems encountered in their work. Some areas of overlap were identified at this stage.

Identify problems and priority setting

In combined session, community members were identifed any problems-gaps, fragmentation or redundancy - related to adolescent services among their organizations. Some possible causes of the problems and preliminary solutions may be produced during this process. In term of target population, the classification of adolescents is needed. The adolescents has been classified in to 3 groups; 1) normal group (adolescent without any problems), 2) at risk group (adolescents who live in the risky environments such as having drug user as a friend, having illicit business in/close to their housese) and 3) adolescent with health problem (adolescents with drug addict, adolescents with physical andmental health problems).

Identify organizational responsibilities

Each of individual/organizations (governement, NGOs, community) identified their strengths, weaknesses to select proper individual/organization for specific task. The prime mover need to be selected for the champion to lead the project/program including fund raising.

Develop common objectives,

The common objectives of improving adolescent health accessibility quality of life was developed through brainstorming. At this stage, roles needed to be negotiated and any conflicts resolved.

The time frame for this phase was planed for 3 months.

Phase 2 (6 months–2 years)

Create Partnership

Through the pooling and rationalization of resources an efficient and effective community partnership is created, capable of addressing the issues of gap, fragmentation and redundancy previously identified by the community participants.

Implementation through partnership concept

A plan of action was developed by the partners, including resources and their application, timeframe, work plan, monitoring, evaluation, review, and feedback into further planning processes.

This phase a time frame was planed for 6 months to 2 years.

Phase 3 (start by the end of 1 year)

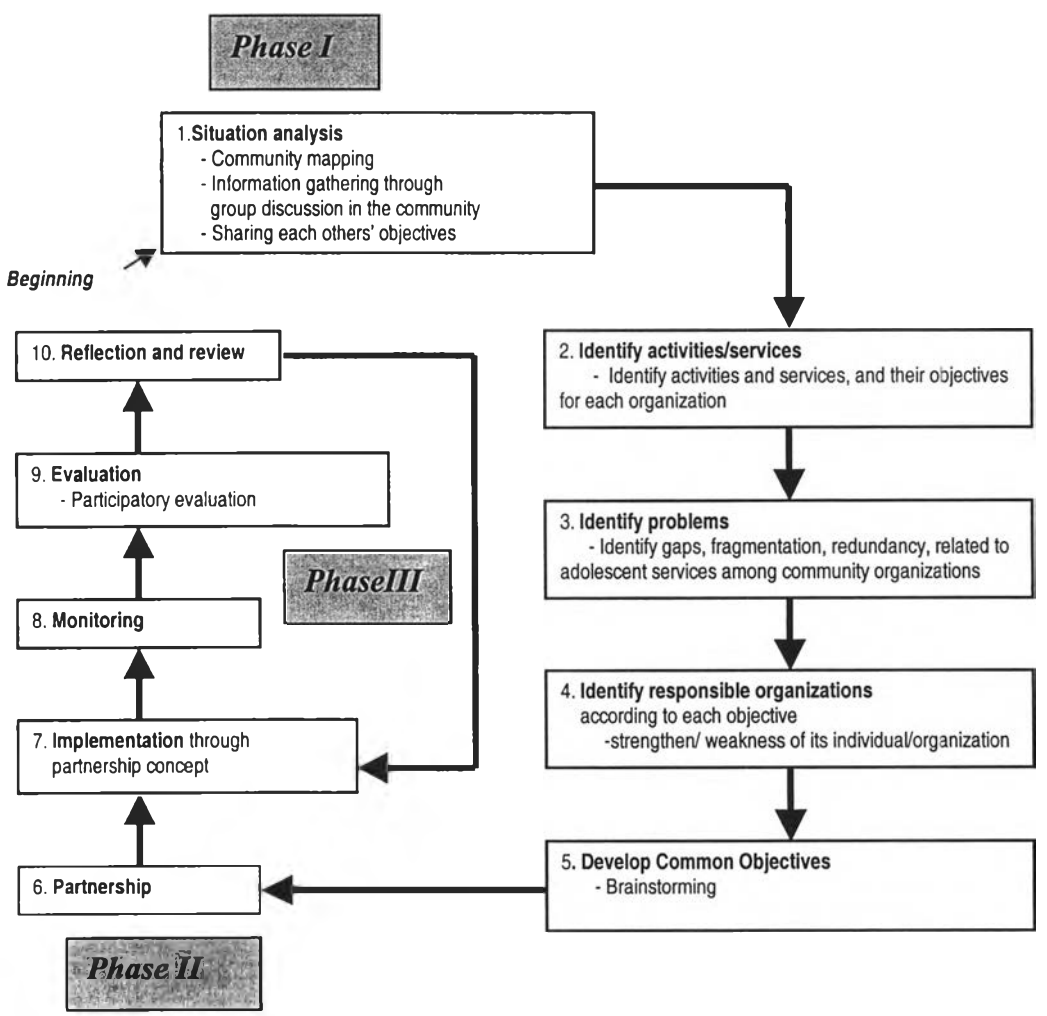
Monitoring and evaluation

Implementation will be monitored by selected persons from the partnership based on the monitoring and evaluation plan already developed. Evaluation will involve all stakeholders, including the partners, the members of the community, and external stakeholders, such as the academician from Chulalongkorn University, the BMA officers from central level, the officers from, Ministry of Public Health. Implementation will be continuously monitored, and evaluation and review will be conducted cyclically (stages 7-10), perhaps annually at the outset. More comprehensive reviews may be required if, for example there are major environmental, socio-economic or organizational changes affecting the partnership or its individual partners, that extend their impacts beyond fine-tuning of the existing partnerships/programmes.

Reflection and review

The outputs of the evaluation processes will be discussed openly in a community forum, where all stakeholders will be represented. Feedback from the forum will determine what is required for the next step, and whether any changes are necessary to the adolescent health programme.

This phase a time frame was planed for 1 year. The plan of action and evaluation shown in the figure 5.2.



Source: Adapted from Participation & Social Assessment, Jenifer Rietbergen-McCraken 1998

Figure 5.2 : The plan of action and evaluation shown