# CHAPTER II

# LITERATURE REVIEW

In this chapter, the review was devised in to two parts, first the country profile which consist of country setting, epidemic of HIV/AIDS and prostitution in Cambodia; second the concepts of outreach program and its related study in some developing countries in the world.

## 2.1 THE COUNTRY PROFILE OF CAMBODIA REGARDING HIV/AIDS

### *2.1.1. COUNTRY SETTING*

#### *1. Geographic and population characteristic*

The Kingdom of Cambodia is a country is about 181,035 sq.km in South East Asia bounded on the northwest by Thailand, Laos to the north, Vietnam to the east and the Gulf of Thailand to the south. Its population of about 10.5 millions (1995) is growing at 2.8 % per annum and the population is estimated to reach 12 millions by the year 2000. The overall population density is about 52 persons per square. km which live across 20 provinces, 2 municipalities, 170 districts, over 1500 communes and close 13000 villages.

Approximately one million people live in capital city, Phnom Penh. An estimated 85% of the population live in rural area where only 15% live in urban area. Women in Cambodia account for about 52% of the entire population is under the age of 17. Statistic showed that 96% of the people of Cambodia are ethnic Khmer. There are a number of ethnic Vietnamese, Chinese and Cham Muslims (Khmer Islam) whose number ate about 100,000 over 80,000 and 200,000 respectively. Cambodia's ethno-lingustic minorities or hill –tribes known ad 'Khmer Leu' are found primarily in the north-esthern province and the number is between 60,000 to 70,000 people.

#### *2. Health status and health system*

The health status of the people in Cambodia is one of the lowest in Asia. The current IMR is about 115 per 1000 live births and the under 5 MR is about 181 per 1000 live births. The major causes of infant and child morbidity and mortality are malaria, diarrhea, ARI and more recently dangue hemorrhagic fever.

A study by Ryan and Gorbach, 1996, found 44% of CSWs examined had at least one STD other than HIV and over 50% of those had an STD had no clinical signs and symptoms of infection. In men examined 17% had the presence of at least one STD. The high level of symptomatic STD infection and the presence of resistant

strains of gonorrhea invigorate the HIV epidemic and complicate the delivery of services for STD treatment.

Access to public health care and services is extremely limited. In two recent study between 33-50% of men went directly the pharmacy for a treatment of STD and a third of CSWs reported having taken antibiotic in the last month (Ryan and Gorbach; and Brown1997). There is a growing concern that the preference for injection as a form for treatment for many illness couple with the lack of sterile syringes and means to sterilize is a potentially significant pathway of infection.

It is estimated that only 25% of the rural population access public health services-many rely on the traditional services of healer (18%) and private drug sellers (22%)(Brown,1997). In urban area 80% of the population have access to some form of public health services. The lack of equipment, drug and extremely low salary for health care workers challenges an inadequate public health system.

During the last two years a major effort has been vitalize primary health care services in part of the country. A National Health Plan has been developed to provide first level primary health care based upon population numbers and geographical access. The Ministry of Health has established a Minimum Package of Activities which include a variety of services including vaccination, nutrition management, antinatal, postnatal care and health promotion. The UN/WHO and ODA are funding a major program in health reform which will establish a' pay for service' in public system which aims to streamline the numbers of government health provider and overall improve the quality of public health services. The completion of this program is several years away.

### *2.1.2 THE HIV EPIDEMIC*

#### *1. Current situation*

*- AIDS cases*

Following recognition of the first AIDS case in 1993, reported cases escalated rapidly. As of end of 1997, a cumulative total of 572 AIDS cases had been reported through out the country.(Official HIV/AIDS case report, 1997). The number of officially reported case is though to understate considerably the true number. In fact such underreporting should due to :

-the inadequate access to health facilities by the people

-the lack of resources for management of the case reporting system

-the continued insufficiencies in laboratory facilities, supplies and training of clinical staff.

Chin and National AIDS Program estimated that the true number of AIDS cases from the start of the epidemic through 1997 is about 9.000 or about 9 times the number of reported cases.

In Cambodia AIDS affects mainly the sexually active members of the population and infants. Majority of all reported AIDS cases have been adults between the age of 20-29 year old and minority have been under five, because of the difficulty in recognizing the diseases in infants, however, pediatric AIDS is though to be even more seriously underreported than adult AIDS.
In appendix C show the graphic representation of estimated and projected annual HIV related morbidity using a moderate HIV scenario in Cambodia by Chin and National AIDS Program.

***- HIV infection***

HIV subtype E, similar to the subtype found in Thailand and most of South East Asia countries, has been detected in all region of the country, although prevalence varies enormously (Rayan and Gorbach 1997).

HIV infection was first detected in Cambodia during the selected serologic screening in 1991 and as the end of 1997, 11807 people have been reported having antibody to HIV. An estimate by WHO by late 1996 show that HIV prevalence range from 70,000 to 120,000 and approximately 17 to 25,000 new infection per year are occurring in the country. According to the WHO Western Pacific Region, Cambodia has the highest prevalence rate of HIV infection in the region.

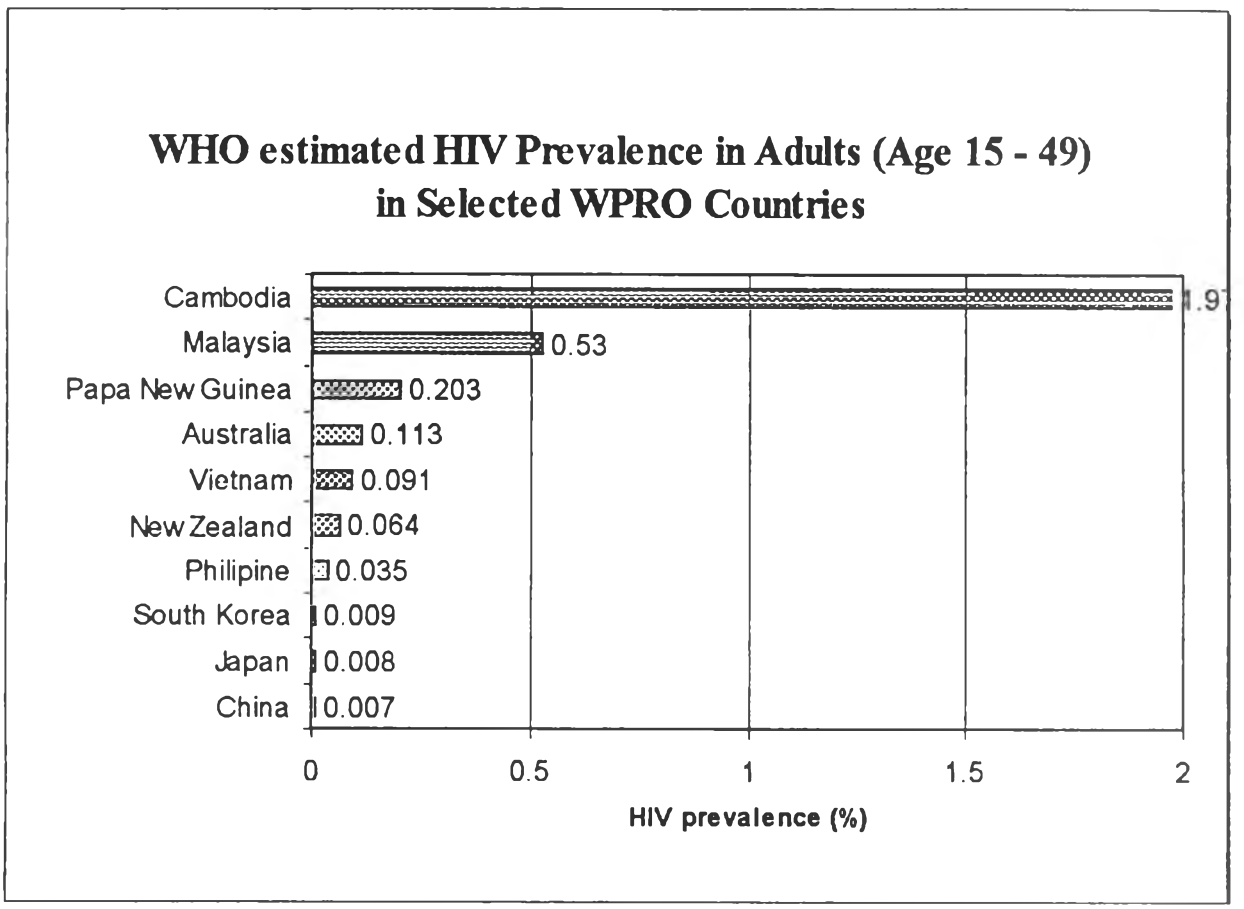
HIV Sentinel Surveillance (HSS) in 1997 found that the average HIV prevalence rate for each target group were about 39% (or 445/1132) for CSWs, 6%(or 79/1325) for policemen, 7% (or 89/1249) for Military, 3% (or 160/5003) for pregnant women, 5% (or 54/1035) for TB patient, 6% (or 69/1155) for hospital inpatient and 4% (or 649/18222) for blood donor.

Table 2.1 : Prevalence rate of HIV infection in different target group from 1991 - 1997

| Target group | Prevalence rate by year (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
| 1. Blood donor | .08 | .44 | 2.24 | 3.01 | 4.5 | 4 | 4 |
| 2. CSWs | - | 9.5 | - | 39 | 38 | 40.88 | 39.30 |
| 3. Police | - | - | - | - | 8.07 | 5.46 | 6 |
| 4. Military | - | - | - | - | 8.13 | 5.95 | 7.1 |
| 5. Preg. Women | - | - | - | - | 2.64 | 1.73 | 3.2 |
| 6. TB patient | - | - | - | - | 2.49 | - | 5.2 |

Source: National AIDS Program, Ministry of Health

Fig 2.1: WHO estimated HIV prevalence in adults (age 15-49) in selected countries




Source: WHO Western Pacific Region Office, 1996

***2. Distribution***

***-Geographic distribution***

HIV Sentinel Surveillance 1996 and 1997 found that the HIV prevalence rate are higher in some provinces bounded with Thailand such as Battambong, Benteay Meanchey and Koh Kong.

***-Gender and age distribution***

As in other countries in Asia the number of male and female infected individuals are approximately equal. The age group most affected is sexually active adults in the 20-29 age group. Overall, adults in the 20-49 age group account for about 82 percent of reported HIV infection in 1997; children less 0-5 year olds account for about 6 percent of cases. Very few infection have been found in 6-14 year olds in Cambodia.

### *3. Routes of transmission of HIV*

In Cambodia, as in the other country in Asia, there are four principal routes of transmission of HIV such as heterosexual, perinatal (mother to child), blood transfusion and contaminated health care equipment. Of these, by far the most important is heterosexual intercourse, which is directly responsible for about 95 percent of all infections (WHO Western Pacific Region, 1996). It is probably indirectly responsible for most perinatal transmission, since most mothers were probably infected through sexual contact. Blood transfusion and contaminated health care equipment are though to account for a relatively small number of infection.

The other routes of transmission are notable only because they are considered to be insignificant in Cambodia, either because of their inefficiency or because the numbers of individuals affected are very small. Evidence to date suggests that contaminated breastmilk does not contribute significantly to transmission of HIV infection from mother to child. In addition, homosexual transmission, and needle sharing among intravenous drug abusers which need be of less concern to Cambodia policy makers because the number of susceptible individual in these risk groups are relatively small.

Table 2.2 : Working estimates of HIV prevalence and estimated proportion of cases by sex and mode of transmission in selected countries of the Western Pacific Region, September 1996

| Country | Estimated HIV prevalence in adults age 15-49 | | % of case in women | Percentage of cases acquired through | |
|---|---|---|---|---|---|
| | Number | Rate (%) | (%) | %Sexual contact | %IV drug abuse |
| Cambodia | 96 300 | 1.974 | 50 | 95 | 3 |
| Malaysia | 55 000 | .530 | 30 | 20 | 75 |
| Australia | 11 000 | .113 | 3 | 95 | 3 |
| Vietnam | 35 000 | .091 | 30 | 20 | 75 |
| New Zealand | 1 200 | .064 | 3 | 95 | 3 |
| Philippines | 17 500 | .035 | 30 | 90 | <5 |
| Rep of Korea | 2 500 | .009 | 40 | 95 | <5 |
| Japan | 5 000 | .008 | 5 | 50 | <5 |
| China | 50 000 | .007 | 10 | 10 | 85 |

Source: WHO Western Pacific Region1996

*4. Future development of the epidemic*

Based on HIV/AIDS Sentinel Surveillance data from 1995 and1996, Chin suggested that HIV prevalence in Cambodia ranges from 50 to 90,000 in 1995 and from 70 to 120,000 in 1996. In addition Chin model, which is used primarily for short term (3-5 years) projections, projects a cumulative total of 40,000 AIDS cases by the year 2000, with about 7 to 25,000 annual new infection. At the same time, WHO Western Pacific Region estimated that the cumulative HIV infection in Cambodia will be about 160,000 by the year 2000.

By comparison of infection rates among Thai and Cambodian blood donors and sex workers, since 1994, Michael Merson, former Executive Director of Global Program on AIDS in his visit to Cambodia, warned that the trend of infection are even worse in Cambodia than in Northern Thailand. It is a quite difficult task for health workers alone to lobby other sectors to keep providing support for the challenge against this epidemic. However, Chin stated that it is unrealistic to believe that promiscuous sexual behavior and prostitution can be easily controlled by the limited public health educational program that has been provided to date in most Asian countries, including Cambodia. Policy makers, however, have to accept that HIV epidemic could be slow down with adequately supported public health education programs.

*2.1.3. PROSTITUTION IN CAMBODIA*

Prostitution is not new, nor is not confined to a single country. In Cambodia, however, an extremely disturbing form of the commercial sex industry is on the rise. Thousand of uneducated young girls are being sold to the brothel owners, often their families are deceived by false promises of job opportunities for their daughters. The girls and young women ate virtually enslaved by the brothel owners, confined to tiny rooms, and force to have sex with many clients each day to pay off their debt to the brothel owner. As foreign businessmen seek sex with virgins to avoid the risk of HIV infection, the demand rises for ever-young girls. Ironically, these girls and young women suffer horrifically high rates of HIV infection, and the rates are increasing rapidly.

The UNICEF *Situation Report* compiles an up-to-date summary of the surveys and investigations of the commercial sex industry and the trafficking in women and children. These study have been conducted by local and international NGOs that concern themselves with the situation of women and children in Cambodia. Their service range from advocacy and health education, to legal and human rights, and welfare.

Summary of Situation Report show that abuse of women and children in Cambodia through commercial sexual exploitation has increased significantly in the past five years. In 1990 there were about 1,500 estimated CSWs in Phnom Penh. During the United Nation Transitional Authority in Cambodia (UNTAC) period 1991-1993, the figure rose to about 20,000 and in 1994 the total was approximately 17,000. An estimated 57,000 CSWs operate in Cambodia; of this total some 70% are found in Phnom Penh and Battambang. According to the Situation Report, prostitution has always existed in Cambodia, but was suppressed under the Khmer Rouge regime and the socialism period (1975-1991). During the UNTAC period, demand for commercial sex workers increased with the influx into the country of young unattached men with relatively large sums of money. While there may now be fewer sex workers than during the UNTAC period, but demand for commercial sex workers remain strong.

The nature of the sex industry is changing as well. Studies show increasing percentage of ever-younger people being recruited to work. The Cambodian Women's Development Association (CWDA) 1992 survey showed that the minimum age of commercial sex workers was eighteen, in 1993, the minimum age had dropped to fifteen. A 1994 CWDA survey in Phnom Penh showed that 35% of commercial sex workers were under age eighteen. Human Rights Vigilance of Cambodia conducted a survey of over 6,000 commercial sex workers throughout Cambodia in 1995 found that 30.7% were under age seventeen.

## *2.2. OUTREACH PROGRAM AND ITS RELEVANT STUDIES*

### *1. Concept of program evaluation*

Evaluation is the application of social science research procedure to judge and improve the ways in which social policy and program are conducted, from the earliest stages of defining and designing programs through their development and implementation.(Rossi and Freeman, 1993)

The evaluation of a program includes both program monitoring and impact assessment. Monitoring is used to determine how well the program is carried out at different levels and at what costs. It tracks change which occurs over times in the resource inputs, process of implementation and outcome. Impact assessment measures the extent to which this change can be attributed to the program intervention. ( Betrand.J.T, Magnani.R.T and Naomi,1996)

The result of the program monitoring are indispensable for program management because they inform managers whether the program is on track, where the problems are, and what unexpected results have occurred.

Evaluation result are also important inputs into strategic planning and program design, measure of program performance, outputs and outcomes describe the current state of the program environment. Results linking impute and activities to program output and change at impact of prevalence of infection or diseases, serve to explain what has worked in the past and suggest potential directions for the future. Successful intervention can be replicated in new program or project phase. Whereas activities that do not produce any result can be phased out. Moreover, evaluation can be used to explore why certain interventions did not work.

In short, those responsible for implementing program and those who fund program should require that evaluation be an integral part of any intervention.

***2. Prostitution and outreach program to CSWs***

'Prostitution or the selling of sex' is known as one of the oldest practices of human society since long times ago. All countries in the world have this institution and many have quite commercialized 'sex industries'.

Before World War II, there was an epidemic of Syphilis (one of Sexually Transmitted Diseases), and millions people in the world were infected by Syphilis. At the same time there were no drugs and vaccines to cure or prevent this disease. However, there was only preventive measures that can help the world to slow down the epidemic. Since transmission of Syphilis is made mainly through sexual contact, outreach programs to commercial sex workers have been implemented in response to the epidemic as well.

As the medical science well developed, an antibiotic namely 'Penicillin' was discovered and found to be very effective in curing Syphilis. Then Syphilis was not a big problem and people did not care about getting infected any more. Therefore, outreach programs have been ignored.

In the last two decades, the epidemic of HIV/AIDS has occurred and about 20 millions people (in 1996) in the world have been infected (James. Chin, 1996). Transmission of HIV can occur through many modes such as sexual contact, blood transfusion, drug used, and from mother to child. As a result, many different interventions have been implemented in response to the epidemic through different modes of transmission.

Most countries in Asia such as Thailand, Japan, Australia, Republic of Korea, Cambodia, Philippine, India, Nepal... and some other countries in South America and in Africa are found that sexual contact is the important cause of spread of HIV in the countries.

Outreach program to direct female commercial sex workers has been widely implemented in many countries where the sexual contact was found the major mode of transmission. This program has been known as health education and condom promotion to prostitutes. The purposes of this program is to mobilize education, skills, and supports or other services, and to provide these services to the target population in their workplace by skilled peers (Geoffrey. Fysh, 1995). In order to have outreach program work effectively, Fysh proposed the program to follow three fundamental guideline principles such as harm reduction, self-determination and Peer-based initiation. Outreach program to CSWs should inform CSWs about the harm of their work and provide options that allow them to continue their behavior in a fashion that does minimize harm. CSWs should be allowed to choose the option by themselves with necessary encouragement and support from peer. This kind of education can be effective under peer-based initiation which the most appropriate people to perform the duties involved are those who are part of sex industry background, empathy and sensitivity all enable peers to be free from judgment and condescension when making contact with people in sex industry ( Becstein, 1991).

Outreach program to CSWs is one part of Condom Social Marketing program which, by of 1996, 60 developing countries had functioned this program, although not all were on a national scale. Many of these programs are supported by international donors, others for example, in Botswana, India, South Africa, and some Latin American countries, are subsidized by national government. In some countries such as Indonesia, condom brands launched through social marketing, have been taking up by for-profit distributors ( Confronting AIDS, 1997). Nearly three- quarters of the countries that responded to condom distribution questions provided condoms through a national AIDS control program (Mann and Tarantola,1996).

**3. Cost effectiveness and behavioral studies related outreach program to CSWs**

Although outreach program has been implemented in many countries in the world, there are few studies on cost effectiveness of this program while most studies measured only effect of the program and some measured only costs. Moreover, there are many studies on behavioral of people (Behavioral Surveillance Survey) regarding HIV/AIDS in developing countries which were conducted to measure the behavior change of people over time.

Only one studies to date have attempted to evaluate their program by calculating the cost per cases of HIV infection averted. In Nairobi, Kenya, Moses et al conducted a cost- effectiveness study on the intervention which included condom promotion, STD treatment and health education. In their study researchers tried to analyze cost and effectiveness program for high frequency STD transmitters in which 1000 CSWs were selected as a cohort (Moses, ct.al.1990).The study team estimated

12,000 HIV infection were averted through the program ( include both CSWs and their client), which had operating costs of $70,000 and annual cost per case of HIV infection averted came to 8 US dollars under assumption of 80% of condom use, or 12 US dollars under assumption of 50% of condom use.

In addition, there were other three studies on cost effectiveness of their program by calculating cost per condom distributed and cost per contact. First the study in Cameroon by Ministry of Health in 1989 on cost effectiveness of Peer-education and condom distribution to CSWs found that cost per condom distributed was .34 US dollars. Second, the study, in Brazil by Social Guidance Unit on cost effectiveness of Peer-education and condom distribution to male CSWs aged 11-23, found that cost per condom distributed was .70 US dollars and cost per contact was 3.73 US dollars.(Noss,1989). Finally, the study in Bulawayo, Zimbabwe by City Health Department, University of Zimbabwe, on Peer-education and condom distribution on female CSWs and client, found that cost per condom distributed was .10 US dollars and cost per contact was .47 US dollars.

Some studies, which tried to evaluate their specific HIV/AIDS prevention programs by measuring only the outcome achieved after some period of intervention. The following paragraph are review of some selected studies in developing countries.

- In 1988, Ngugi an other conducted an evaluation of Targeted condom promotion in Kenya in which Quasi-experimental design were used, and 366 CSWs and 37 madams enrolled in the study. The result showed that those who received both individual and group counseling increase condom use from 10 to 80%; those who received only group counseling increase condom use from 9 to 70%; and from 7 to 58% for control group.

- In 1993, in Honduras, Fox and other conducted a study on effectiveness of condom distribution and HIV education in which prospective cohort study design was used and 134 CSWs were enrolled. The study found that, after six months of intervention condom used among CSWs increased from 64 to 70%.

- The same study in 1995, in India by Bhave and other showed that, after 24 months of it intervention the program, always condom use increase from 3 to 28% as compared with no change in the control group and increase in sometime condom use from 31 to 70% and from 36 to 53% respectively in the two groups.

Finally, other studies have been done to measure the level of behavioral change of different population groups which were known as " Behavioral Surveillance Survey" (BSS).These studies have been repeated every year on the same groups of population and followed the same site. Commercial sex worker is one important

population group that all BSS always included, and the result of those studies were an important indicator for measuring the outcome of Outreach program as well.

-In Thailand, BSS started since 1993, eight population groups such as ,direct and indirect female commercial sex worker, male attendees of STD clinic, female attendees of antenatal care clinic, male and female vocational student, and male and female factory workers. It is a repeated cross- sectional survey design with a structured questionnaire which carried out only in Bangkok. The result of the study from 1993 to 1996 show that there a significance change of behavior across all groups of population. For example the percentage of consistent condom used among direct female commercial sex workers increase by 87% in 1993, to 97% in 1996. The researchers concluded that the behavior change did not occur uniformly but depending on the sexual dyad and the population groups under the study.(Stephen Mills, Patchara Benjarattanaporn, et al, 1997)

-In India, BSS was first start in 1996 in 10 towns in the state of Tamil Nadu, South India. Seven population groups were selected which included female commercial sex workers, male STD patients, truckers and helpers, male and female factory workers, male and female high school student. (AIDSCAP,1997).

-In 1989, in Zimbabwe, David Wilson et al carried out ' A pilot study for an HIV prevention program among commercial sex workers in Bulawayo, Zimbabwe' . It was a health pilot study for introducing the program to reduce HIV transmission among CSWs. 113 CSWs were interviewed during the study. The researcher conclude that health education among CSWs is urgently needed.

-In Cambodia, BSS was started in 1997, which is a repeated cross sectional study in five selected provinces. Five population groups were selected such as direct female CSWs, military and policemen, moto-taxi driver, male vocational student and working women. Another study 'STD/HIV prevalence, STD antibiograme and sexual behavior' by Ryan. Caroline and Gorbach. Pamina, University of Washington, which were carried out in 1996 in 3 selected provinces and in 3 population groups such as direct female CSWs, military and police. The last one was in 1997 'Program monitoring of outreach program to direct female CSWs' which is a cross sectional study in five selected provinces . This study, which was conducted by National AIDS Program and funded by SEAMEO-GTZ, aimed at evaluating the performance of the program but the analysis is not finish yet.

Based on the data available from the last study, this study will try to look further on the costs, outcome, factors affecting costs, performance, and financial viability of the program. Further study designs and methodology will added in order to get complete set of data for analysis.