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STRESS FACTORS AND RESPONSE EFFECTS
ON HEALTH SERVICES UTILIZATION AMONG WOMEN IN PRISON

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PUBLIC HEALTH
DECEMBER 1995

By
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DEDICATION

To my boys, Guido and Andrew,
who continue the journey of an American Dream
their parents began in 1964.
ACKNOWLEDGMENTS

This study reflects the assistance and support from many. Foremost, I want to express my appreciation to the late Dr. Lawrence K. Koseki as chair of my committee until his sudden untimely death. His diligent commitment forced me to persevere. I thank Dr. Gigliola Baruffi for assuming the role of the chair and facilitating the closure of this project with kindness and understanding. I want to express my appreciation to the members of my committee for their knowledge, expertise and critique: Dr. Alan R. Katz, who above all gave of himself throughout this process, for his ever support and encouragement during difficult times, for his methodology and research expertise and his time and effort to guide me; Dr. Meda Chesney-Lind, for providing direction, numerous suggestions, supportive materials and her scholarly expertise in women and delinquency; Dr. Barbara Z. Siegel for her support, suggestions and confidence in the study; and to Dr. Kim M. Thorburn, for her suggestions, insight and expertise in correctional health and the incarcerated population. As the Medical Director of the Department of Public Safety, she has been my mentor for many years as an advocate for high correctional health service standards and women’s health.
Special acknowledgments are extended: to the staff at the Women's Community Correctional Center (WCCC) who so warmly and openly assisted me during the data collection; to the State of Hawaii Department of Public Safety in supporting the study; and to the women in prison who deserve a healthful future.

To Freda Hellinger, a fine copy editor, supporter and friend, my special thanks and appreciation; to all my colleagues, friends and many individuals who were extremely helpful, supportive and nurturing; and most of all, to Dr. Mario F. George who has been my mentor, friend, consultant and advisor throughout my personal and educational development.
This exploratory study focused on 67 imprisoned women at the Women's Community Correctional Center (WCCC) in the State of Hawaii with the purpose to (1) develop a sociodemographic and health services profile, (2) identify stress factors related to incarceration, (3) discern stress related responses and behaviors, and (4) examine relationships between and among identified stress factors, sociodemographic characteristics and the frequency of request for and utilization of health care services.

An instrument was designed to collect data from existing medical and inmate records and statistical reports on sentenced felons (N=67) in the State of Hawaii. Data included variables on sociodemographic, biological, and psychosocial dimensions related to the inmate profile; stressors or stress events that occurred during the study year 1992; and health services activities, e.g., requests and follow-up utilizations, and reported types and reasons for those services.

Data analysis involved methods of qualitative and quantitative analyses. Methods included the use of content analysis of inmate and medical records and statistical analysis of quantitative measurements by applying univariate and bivariate analyses.
Findings revealed that among the 48 sociodemographic variables, histories of attempted suicide (HAS) and drug abuse (HDA), and misconduct infractions during incarceration showed significant associations with the frequency of health services requests. Specifically, HAS subjects requested more sick calls, used considerably more mental health services, and had more misconduct infractions than the non-HAS group. HDA subjects requested considerably less sick calls and mental health services, had less misconduct infractions and injuries during incarceration than the non-HDA group. Among these groups, certain sociodemographic characteristics were more prevalent.

A number of recommendations were offered to strengthen correctional health care for women. Further testing and validation of the study findings are suggested to identify stress predictors and response behaviors of health services utilization. Identification of stress factors among incarcerated women and their influence on subgroup behavior in seeking health services is proffered for further investigation. Several hypotheses for future research are offered relating to behavior indicators of adaptation to incarceration that may reflect health and health service utilization among women inmates and inmate subgroups.
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- Conceptual Model for Enquiry and Data Analysis
CHAPTER I
INTRODUCTION

Female prisoners with sentences of longer than one year incarceration constitute only 5.8% or 47,691 of the nation’s total population of 823,414 inmates in state and federal prisons as of June 30, 1992 (U.S. Dept. of Justice, 1993). Trends of the past decade, however, indicate that incarceration rates for women increased faster than those of men. Between 1980 and 1990 women imprisonment rose 256%, from 12,331 to 43,845, compared to nearly half that figure of men whose imprisonment proportion grew 137%, from 303,643 to 727,398 (U.S. Dept. of Justice, 1991).

As a small minority, incarcerated women are poorly understood, seriously underserved, and frequently neglected. They are differentiated from males in terms of separate housing, work assignments, and obvious medical conditions, but their unique emotional, psychological, and sociological gender distinctions are often not recognized nor addressed.

Comprehensive data are needed to define more accurately the female inmate population, its stress factors and impacts that intensify health care needs during incarceration. Without the knowledge and understanding of the effects of
Incarceration on women's health, it is nearly impossible to plan effective health services.

Female Offender Profile

Background in Criminal Offenses

Compared to men, women offenders rarely are public safety risks and commit fewer crimes per person. Their offenses are less serious and less violent in nature. Arrest data from the Uniform Crime Reports (1988) indicate that, since 1978, women have continued criminal activities at an increasing rate in nonviolent crimes, such as larceny, primarily shoplifting and forgery; while male crimes increased in all categories, violent and nonviolent, including murder and non-negligent manslaughter. The largest increases in female crimes reported were in the categories of embezzlement (135.2%); curfew/loitering laws or public offenses, e.g., gambling, prostitution, alcohol and drug related offenses (130.9%); assaults (80.8%); offenses against family and children (82.4%); and violation of liquor laws (85.4%) (Pollock-Byrne, 1990; U.S. Dept. of Justice, 1988).

Although many arrests may not be directly due to drug and alcohol offenses, most crimes committed by women are motivated by drugs. A 1989 survey of 5,675 women inmates in 424 jails revealed that more than half of convicted females had used drugs in the month prior to the current offense and nearly 40% on a daily basis; about one in every four had
committed her current offense for money to buy drugs; about 20% reported being under the influence of alcohol at the time of offense (U.S. Dept. of Justice, 1992b). Women are often accessories to male-instigated actions. Prostitution, reselling narcotics or assisting male drug dealers, and property crimes such as larceny/theft in most cases are drug related crimes to support the addiction (American Correctional Association [ACA], 1991; Pollock-Byrne, 1990).

A national investigation of homicides in the U.S. found that these offenses committed by women were seven times as likely to be in self-defense in reaction to repeated physical and violent abuse by a spouse or boyfriend as were homicides by males (Chesney-Lind, 1992; Ewing, 1987).

**Socioeconomic Background**

Studies based on national surveys of incarcerated women in the U.S., report that the majority of convicted women are young (under 30), poor, of an ethnic minority; more than two-thirds are mothers of whom one-third are married with children under 18 and nearly 50% of the children are preschool age (ACA, 1991; U.S. Dept. of Justice, 1992b; Ross & Fabiano, 1986); nearly half are victims of physical, sexual and emotional abuse at some time in their lives. Many come from backgrounds of poverty, neglect, and childhood abuses, with histories of serious emotional problems. Approximately 40% had grown up in a single parent household and 17% lived in a household without either
parent. Almost a third of all women in jail had a parent or guardian who abused drugs or alcohol or served time in incarceration and 34% reported a brother or sister having been incarcerated at some time in the past. About 50% had run away from home as youths and nearly 25% had attempted suicide.

Health and Health Risk Behaviors


Too few systematic empirical correctional health studies on specific health risks and conditions, particularly pertaining to women offenders, exist. Women are mostly included in male studies without consideration of female differences. Variables related to family and community at risk, i.e., subject’s children, recent birth prior to incarceration, sexual partners, caregiver responsibilities and their effects on the inmate’s health are not emphasized. The few recent studies that do focus on the women offenders and their health conditions all indicate that women have higher physical and psychological distress levels than men, are very anxious and depressed, and more
frequently express numerous health problems—most commonly headaches, back problems, dizziness and fainting, heart problems and hypertension—both at their entry into prison and throughout prolonged incarceration. At particularly high risk for depression or anxiety are women who killed their partners, child abusers, or those who have just delivered babies or whose children are having severe problems (Pollock-Byrne, 1990).

Over 25% of women inmates are reported to have histories of sexually transmitted diseases, most commonly gonorrhea and abnormal Papanicouli smears (cancer warning test). Nearly one-half have abnormal pelvic findings. Urinary tract infections are common. Menstrual disorders are the most prevalent gynecologic difficulties (Carp & Schade, 1992; Ingram-Fogel, 1991).

In the era of the AIDS epidemic, HIV risks and long-range implications of infection among women offenders are more recent correctional health concerns. Impacts of health risk behaviors among women offenders being recognized to have far-reaching effects, not only on the immediate prison population but on the community when they are released. Their infants and children, sexual partners, and caregivers are at risk.

Weisfuse et al. (1991) conducted a blind seroprevalence survey for HIV-1 infection among individuals entering New York City (NYC) prisons in 1989. Of the 2,236
inmates surveyed (1690 men, 546 women), 413 (18.5%) were HIV-1 positive. Compared to the men, women had a higher percentage of HIV-1 seropositivity (25.8% women vs. 16.1% men). Almost half of the seropositive women were intravenous heroin addicts and nearly a third tested positive for syphilis. A higher prevalence rate of women with HIV infection among female inmates were supported by The National Commission on AIDS report, 1991 (Weiner & Anno, 1992).

Patel, Hutchinson and Sienko (1990) undertook a 3-month blind serosurvey in 1988 for HIV infection of inmates entering the Michigan corrections system (658 males, 93 females). Although HIV-seropositive among the women was not stated, women reported higher rates of intravenous drug use (35.1% compared to 20% for men) and needle sharing.

While most inmate studies include both sexes, women represent only a small percentage of the total study population.

**The Incarcerated Population as a Public Health Concern**

A number of women committing nonviolent crimes would not need to be incarcerated if the reasons they committed their crime were addressed. Women offenders have special needs relating to pregnancy, child care, parenting, education, employment, being a victim of physical or sexual abuse, taking responsibility for their lives, basic living skills, staying in dysfunctional relationships, emotional illness, nutrition and the abuse of substances. (The American Correctional Association, 1991, p. 51)
Weiner and Anno (1992) state that neither public policymakers nor medical professionals have committed the resources needed to foster research in correctional health, train health professionals in this specific area, and enhance linkages with public health professionals.

Crime is a social disorder within an interrelated mesh of social factors that "play significant causal, effectual, or augmenting roles with regard to the state of health or illness of the group or society" (Hanlon & Pickett, 1979, p. 120). Crime is a public health concern with far-reaching consequences on the entire public—impacting on the community, family, and individual. The seriously increasing epidemic proportions of drug offenses and the high rate of poverty with their chain effects that are directly linked to the rising crime rate, particularly among women, present greater challenges to the public health sector than are actually realized.

The oftentimes neglected inmate population in general, and women inmates in particular, can be viewed as an opportunity to apply public health principles and approaches for improving society’s health. Efforts to enhance the health of incarcerated offenders, most of whom will be released back to society, also can contribute to crime prevention by helping inmates deal with adverse social pressures, addiction and health risk behaviors under controlled incarcerated conditions.
"Health" for an incarcerated woman or man cannot mean the same as for a free person. The literature is silent about a definition of "health" that applies to the incarcerated population. Yet, for correctional health care to be effective, a consensus toward a definition of health is clearly needed to set more uniform health goals for this population and facilitate program planning accordingly.

In 1968 the United Nations defined health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (Roy & Andrews, 1991, p. 19). This definition, while apropos for society-in-general, is not quite appropriate for incarcerated offenders. Nor are the definitions adequately described by Mason and McGinnis (1990) as "the ability to function fully and independently in society" (p. 441) or by Hanlon and Pickett (1979) as "one facet of the total interest and welfare of the individual and the society and as such, [health] is in constant competition with all other factors of greater or lesser importance to that individual and that society" (p. 90). On the other hand, Roy's (1984) views that health is "a state and a process of being and becoming an integrated and whole person and the lack of integration represents lack of health" (p. 24) are promising. Her concept of health is more sensitive to adverse life conditions such as incarceration. To become an integrated
and whole person means to have the ability to adapt to changing situations and environment.

Koos (1953) pointedly states a public health approach to "health," which could so well apply to correctional health:

What we can expect a community to provide, and its members to accept, in the way of health activities must therefore be viewed in a framework which is peculiar to that community. This in no way prevents the establishing of uniform goals or standards for health, but it does mean that community efforts directed toward better health are necessarily custom-built (p.466).

The incarcerated population share a peculiar community, viz., involuntary confinement in a correctional institution. As studies show, inmates are vulnerable to further ill health in physical, psychological, behavioral, emotional and spiritual terms. How the inmates adapt to conditions of incarceration depend on the multiplicity of interrelated factors. Thus, it can be assumed that responses to confinement and related stresses differ among individuals, groups of inmates with similar clusters of characteristics and between gender groups.

**Problem Statement**

Correctional health services and the health of inmates require scholarly investigation from a public health perspective. While socioeconomic backgrounds and effects of incarceration impact health problems, gender differences must be acknowledged and better understood. General
perceptions are not sufficient for effective health services planning.

Correctional institutions are stressful living environments. The inmate population continues to increase, overcrowding the system and depleting further limited resources. Factors associated with crime (i.e., poverty, illiteracy, substance abuse) are also conditions associated with poor health which must be addressed by a correctional health care system. However, as known, the correctional system is underfunded, understaffed, and designed to respond primarily to acute illnesses and infection control.

Women inmates always were a small minority of the incarcerated population. Although their incarceration rates are increasing at a faster rate than men, they still represent less than 6% of the total inmate population. Thus, women inmates must compete with nearly 94% male inmates for scarce resources. Their special needs and concerns other than the obvious biological and health related differences are not being adequately addressed. More so, they are not well known and understood.

The constraints pose challenges to the correctional health care system to search for new approaches to address the needs of women inmates. Health services planning requires a clear definition of health for an incarcerated population, knowledge of gender specific health behaviors and responses to incarceration, and predictive stress
indicators that impact health and health-related behaviors.

The focus of this exploratory study is to establish a baseline data base on imprisoned women in relation to the following questions.

1. What are the stressors that impact on the health status of imprisoned woman?
2. What is the overall health profile of inmate women? What is their health care utilization?
3. Is there an association between scheduled criminal justice or court events of imprisoned women and their requests for health services?
4. Do sociodemographic variables have any relationship to the quantity of health services requests and utilization?
5. Are sociodemographic variables associated with the frequency of health services requests and utilization?
6. Do crime histories of inmate women have any effect on their requests for health services?

These are a few of the questions that reflect the lack of information about health of imprisoned women.

Significance of the Research Problem

This study proposes to contribute to the development of a gender-specific health profile of imprisoned women. Identification of predictive stress factors associated with incarceration, their relationship to select sociodemographic variables, and their impact on health and health services utilization could facilitate more responsive and effective
health services planning for incarcerated women. Such a health profile could be used for grouping individuals with similar characteristics, backgrounds, health needs, and risks; for classification purposes to determine preventive programs and special needs services considerations as currently exist for housing, security and work programs decisions; and for planning of a correctional health programs. If indeed such stress factors can be identified in one gender group and comprehensive gender-specific inmate profiles established that include anticipatory health care needs components, then the theoretical framework can be further tested in studies elsewhere.

One of the goals of "HEALTHY PEOPLE 2000" National Health Promotion and Disease Prevention is to reduce health disparities among Americans by improving the health of at-risk population groups that are prone to premature death, disease, and disability, viz., the economically, educationally, and politically disadvantaged (Mason & McGinnis, 1990). This study should contribute to the goal of "HEALTHY PEOPLE 2000" by addressing one of the high risk groups of Americans—a group of women inmates in a correctional facility.

Crime-associated social factors must be understood as influential elements impacting the health of the inmates, their adaptation to the incarcerated situation, and their possible return to the community. Health rehabilitation and
change to healthier life styles may lead to achievable goals if the population’s health needs are better defined and applied to effective program planning.

**Purpose of the Study**

To better understand a vulnerable segment of our society from a public health perspective, this study focused on imprisoned women in Hawaii’s correctional facility with the objectives to:

1. derive a sociodemographic and health profile,
2. identify stress factors related to incarceration,
3. discern stress-related responses and behaviors,
4. examine the relationship of the factors with health care services requests and utilization, and
5. analyze relationships between and among identified stress factors, sociodemographic characteristics, and the number of requests and utilization for health services.

Data of imprisoned women in health and institutional records at the State of Hawaii Women’s Community Correctional Care facility (WCCC) were studied during the period January 1 through December 31, 1992.

This exploratory study was aimed at achieving the following:

1. a sociodemographic and health profile of the study group;
2. a profile of the number and frequency of (a) requests by individual inmates for health services in the
following categories: nursing sick calls, attending physician and mental health; and (b) health services utilization other than those requested by the inmate;

3. a determination of the prevalence of distress morbidity (complaints such as insomnia, fatigue, discomfort) documented in reasons for health services requests and determination of other documented reasons for follow-up utilization;

4. a documentation of dates of events during incarceration (criminal justice events or court dates, i.e., sentencing, parole hearing, misconduct hearing, program determinations);

5. an examination of relationships between precipitating factors (sociodemographics, health concerns, significant events—court hearings, outside news, misconduct hearings, program denials, transfers) and the number of requests for health services and follow-up utilization;

6. an identification of health services needs predictors of imprisoned women.

Specific research questions were addressed:

1. Do demographic variables have any relationship to the numbers of health services activities?

2. Do significant events experienced during incarceration have an effect on inmates’ requests for health services?
3. What, if any, are important stress factors and response effects that motivate women inmates to request health services?

Setting of the Study

The Women's Community Correctional Center (WCCC) is located on the island of Oahu, Hawaii. It is the only female facility of six correctional institutions in the state of Hawaii. At any given time, it houses between 90 and 110 inmates, ranging from pre-trial detainees, jail and prison inmates, pre-parolees, and those on furlough.

General Data on Women Offenders in Hawaii

Data on women offenders in Hawaii are limited and usually included with the male data. Of the total 2,739 inmate population (1,778 prison and 961 jail) for the fiscal year ending June 30, 1992, 167 (6.1%) were females of whom nearly half or 80 (48%) were sentenced felons. Female felons made up 4.5% of the total 1,778 prison population, which was 1.5% less than the previous year (6.0% fiscal 1991) (State of Hawaii Department of Public Safety, 1992a, 1994).

In 1990 the American Correctional Association (ACA) completed a needs assessment of women offenders in Hawaii. Data and information for the ACA final report were specifically gathered for the report by the State of Hawaii Department of Public Safety. The final report stated that the majority of felony offenses of women are considered less
serious "women's crimes" according to judges, probation and parole officers, and might be ameliorated by some form of job training. More than one-half (55.8%) of the sentenced females committed during 1989 to 1990 had no prior felony convictions and 95.3% had no prior violent felonies. More than one half (51.2%) were first time commitments (ACA, 1991).

During 1989, 78.9% of the 7,901 female arrests statewide were for nonviolent crimes involving property, fraud, forgery, larceny, prostitution, driving under influence (DUI), disorderly conduct, vagrancy, and narcotic drug laws. Most cases were dismissed, fined or placed on probation (ACA, 1991). As of June 30, 1990, the Department of Public Safety reports that 47.2% of the women convicted were confined for property and other nonviolent offenses, 24.7% were involved in drug offenses, 6.7% were probation and parole violators, and 12.4% were misdemeanants (State of Hawaii Department of Public Safety, 1992a).

**Assessment and Classification Process**

The assessment and classification process is described as it was followed prior and during the study year 1992. Upon entry into the trial detention, all women undergo the same assessment and evaluation process as the men at the Oahu Community Correctional Center (OCCC) intake unit, a predominantly male facility. In most cases, within 24 hours after arrest, the inmate is evaluated by a corrections
officer for housing and security placement, and program prescription (work and/or education). A brief Medical Admission Screening is performed by a social worker to determine any medical or mental health condition needing immediate attention. The only information specific to women on this form relates to pregnancy state, birth control pills and recent delivery. At this time the inmates are informed of available health services and how to request them.

Within two weeks of incarceration the inmate receives a complete physical examination by a physician or nurse practitioner, with subsequent review by a physician, and a mental health evaluation, performed by a social worker with subsequent review by a mental health coordinator. Any abnormal findings will be followed up and treated. A permanent medical record is established that is separate from the institutional file. With the exception of a copy of the initial Medical Admission Screening form, none of the information of the institutional file, i.e., court dates, placement, programs such as drug treatment programs or anger management, etc., are included in the medical record.

After the admission process, the inmate is assigned to a permanent facility. Women who are sentenced to jail (one year or less) or are severely mentally ill and handicapped remain at OCCC, if it is not overcrowded. Others are transferred to the WCCC after the intake process is completed. Most women of all crime classifications–severe
repeat felons, minor first time misdemeanants, pretrial or sentenced—are housed together at the women’s facility.

After transfer, the inmate is oriented to the health care unit at WCCC and the services available. Once more, she is briefly assessed by a nurse to determine whether she is well enough to fulfill any work assignments.

Health Care Services at WCCC During the Study Period 1992

In 1992, the health care unit at WCCC had onsite at least one Professional Registered Nurse (R.N.) or Licensed Practical Nurse (L.P.N.) 10 hours per day from Monday through Friday and 5 hours on the weekend. The total permanent staff consisted of: two full time L.P.N.s, one R.N. and one Psychiatric Social Worker; one part-time Psychologist (12 hours per week); one part-time Psychiatrist (8 hours per week); one part-time M.D.Internist (8 hours per week); one part-time Nurse Practitioner for physical exams only (8 hours per week); one full time clerk/stenographer.

After completion of the initial intake assessment and orientation, the inmate receives a routine examination every two years up to age 35 and yearly thereafter. Other routine preventive or primary care services may be offered when applicable and available, i.e, prenatal care, nutrition counselling, mammography, chronic illness care. Otherwise, to be seen by a health care provider between routine examinations, the inmate must initially request service in writing and state the reason on a Medical Request form or be
referred by correctional staff via a Medical Need Memo if any health problems are observed. Subsequent follow-up visits may be scheduled.

A request for service, initiated by the inmate, is sent to the health care unit and a nurse screens for response urgency. The inmate either will be seen immediately by a nurse or at the routine sick call time every morning, Monday through Friday. On weekends, the nurse responds to emergency calls at the health care unit. Routine sick call at WCCC means that the nurse goes to the housing unit to see the inmate at a designated time and assesses the health need. Minor episodic problems are treated by the nurse per protocol, including dispensation of nonprescription medications. All other health conditions are referred to the appropriate medical discipline, i.e., medical, dental or mental health. Outside specialty referrals are made by the attending physician. All sick calls are documented in a log (date, name, complaint, intervention) and in the medical record of the treated inmate. The medical request form becomes part of the inmate’s permanent medical record.

Assumptions

1. During the study period (January 1, 1992 to December 31, 1992), the subjects will have had equal access to health services on request.
2. The data to be examined from the records of the inmates and correctional units were entered under the same protocol and procedure during the study period 1992.

Limitations of the Study

This study consisted of a nonprobability, convenience sample; therefore, the results cannot be generalized beyond the study population. However, the results can serve as a stimulus for development of larger studies in other correctional facilities, both for males and females, to gain a better understanding and wider knowledge base of gender-specific health conditions and adjustment responses.

The accuracy of the archival data is dependent on the valid interpretation by those who administer and record the assessments, as well as accuracy of the information source, i.e., the inmate who gives the history and information.

Although exploratory studies can stimulate further research in understanding the female inmate characteristics and health needs, establishing causal relationships among variables was not within the scope of this study. In addition, compared to experimental or prospective studies, there are a number of confounding factors that are less likely to be controlled or measured. Because specific variables under study are identified within the context of a select point in time (i.e., between January 1 and December 31, 1992), they may show different characteristics at different times within different contexts.
The dearth of studies on female inmate characteristics, gender-specific health needs, and risk factors associated with incarceration represent a challenge in the development of methods to investigate the problems of a confined women population.
CHAPTER II
REVIEW OF RELEVANT LITERATURE

A comprehensive review of the literature is presented to provide a framework for understanding women inmates in a closed institutional environment and their health behaviors and responses during incarceration. The body of literature on correctional health and health service utilization is very limited and nearly absent on incarcerated women. Most correctional studies deal with male inmates. Women subjects are but a negligible percentage of the study groups. There are indications that interrelated and interacting stress factors do exist and may impact on the inmate’s health status resulting in health services needs.

Stress factors presuming health services needs among incarcerated women and the inmate’s responses to those needs are explored. The focus of this discussion is on (a) stress factors related to the environment and function of the correctional institution and factors surrounding correctional health services; and (b) on women’s health and health needs and effects from a public health perspective.

The scope of stress factors or forces driving health services utilization in a female prison can be better understood within a context of an agreed upon concept of
health. As discussed earlier, Roy's (1984) concept of health as an adaptation capacity is one view on health that has merit for the care of the incarcerated population. With effective coping skills, Roy postulates, the individual has the capacity of becoming a socially integrated person and to adjust effectively to changes in an ever changing environment. But that capacity may be hindered or be ineffective due to a multitude of stressors or forces and compromise the person's level of health.

To promote a capacity for healthful adaptation in an incarceration predicament requires a special understanding of stress factors surrounding that situation of being an inmate. Stressors related to the correctional institution and its functioning, and to the offending woman and her background, health and behavior during incarceration may impact the individual in ways that are not well understood.

Stressors Related to the Correctional Institution and its Functioning

Stress on the correctional institutions as a result of overcrowding, the surge of drug-related problems, and associated health risks cannot be overlooked as having an impact on the well-being of inmates. Within a decade between the end of 1981 and 1991, state and federal prison populations more than doubled, from 369,930 (4.2% women) to 823,414 (5.8% women) (U.S. Dept. of Justice, 1992b). Despite the overall dramatic surge in prison populations,
the significantly greater number of male offenders reportedly have diverted attention away from the needs of female offenders. The incarceration rate of the women continues to increase at a faster rate than men. But, the demands of additional facilities, expansion of existing facilities, more immediate alternatives, and additional programs and services are primarily focused on male prisons (Nesbitt, 1992).

Immarigeon and Chesney-Lind (1992b) report that in most states, the newer correctional facilities for women were constructed without a comprehensive, total systems planning. The number of women who could be cared for safely and how their specific needs could be addressed by community resources were not assessed. As of December 31, 1991, state prisons were estimated to be operating from 16-31% above capacity and some jurisdictions had to transfer prisoners to other local facilities (U.S. Dept. of Justice, 1992c). A corrections compendium survey of July, 1992 revealed that 27,443 female offenders were housed in 53 female-only facilities and 3,640 were housed in 32 co-ed facilities. By mid-year these prisons were already overcrowded. California experienced female overcrowding by 170% of bed capacity (Jones-Brown, 1992).

Though female overcrowding in Hawaii was not reported, the total female inmate population increased by 8.8% from 1985 to 1990 (State of Hawaii Department of Public Safety,
1992a). The ACA (1991) in their summary report of the study on alternatives to incarceration for women wrote: "... our review indicates that the State of Hawaii lags far behind other states in providing sufficient alternatives to jail and prison for women offenders" (p. 3). Even though a severe lack of programs was reported, existing community resources for female offenders were underutilized "due to the Department's [State of Hawaii Department of Public Safety] lack of purchase of service funding" (ACA, 1991, p. 13).

The federal "war on drugs" for the past decade accounts for the dramatic increase in convictions. In 1981 nearly one out of every 13 new prisoners, both males and females, had been convicted of a drug offense and by 1990, the ratio increased to almost one in three (U.S. Dept. of Justice, 1992c). Beginning in 1984, and every two years thereafter, Congress enacted laws that mandated minimum prison terms for defendants convicted of drug offenses or violent crimes. The average sentence for drug offenses increased from 62 months during 1986 to 71 months for mandatory guideline sentences during 1989 (U.S. Dept. of Justice, 1991). The prison term mandates have caused major stress on the nation's correctional institutions and their programs and services.

Assessment and Classification Processes

At the time of incarceration in most correctional facilities every inmate undergoes two assessment processes.
First, a classification process is conducted that involves assessments along various dimensions for security, custody designations, and work assignments, including the identification of acute medical illness and psychological crisis. Second, routine medical, mental health, and dental examinations are given within the first two weeks of incarceration. Each assessment process is separate and correctional records with respective data are kept separate from medical ones. Hence, the inmates' profile of sociodemographic data, including crime history and court determinations, are kept separate from a profile of health data and care needs. Yet, each profile reflects significant factors in the life of an inmate that are linked and impinge on the inmate's state of health and adjustment to incarceration.

Nearly all correctional facilities in the United States reportedly classify women by the same policies, procedures, and assessment tools as are used for men. A 1992 national survey (Corrections Compendium, 1992) revealed that of 85 correctional facilities housing females, only 10 reported having assessments and classifications designed specifically for female inmates; and only 26 of these facilities indicated having a separate reception-diagnostic center for women. The nature of criminal charges, prior crime record, security risk factors, prior incarceration history and drug dependence are seen and assessed in the same way as those of
the males but, as evidenced, women should be assessed according to female standards (Immarigeon & Chesney-Lind, 1992; Jones-Brown, 1992).

In the few instances where modifications have been made to accommodate differences in needs of men and women, those differences were identified on the basis of perception of the staff rather than on empirical studies (Burke & Adams, 1991; Compendium, 1992). In terms of health care needs, the focus remains on acute physical and mental health disabilities. Identification of stress factors, for which some interventions could be anticipated and preventive care programs provided, are not part of the classification considerations for either men or women (Jones-Brown, 1992; Nesbitt, 1992).

Institutional Conduct Rules and Regulations

The purpose of rules and regulations in correctional institutions is to maintain orderly conduct. Any infractions or violations of such rules or misconduct behavior carry consequences of varying degrees including verbal or written warnings, citations, or more severe disciplinary actions, i.e., solitary confinement (lockdown), restriction or loss of recreation privileges, or counted time against time toward release. Inmates are informed of disciplinary rules, surveillance and procedures which vary among institutions and correctional jurisdictions.
Studies and reports on misconduct or rule-breaking behavior during incarceration have been covered by the criminal justice, social science, and psychology disciplines but not by the health sciences. Pollock-Byrne (1990) summarized a comprehensive literature search and reported that, compared to men, incarcerated women (a) tend to be more open, emotional, and spontaneous in their affection and aggression, (b) committed more aggressive acts toward others, property, and themselves, (c) were more likely to commit noisy disturbances and exhibit psychiatric symptoms as opposed to more covert actions in rule-breaking behavior (e.g., gambling, drugs, or black market) among males, (d) break rules at greater rates but less severe, i.e., insubordination, and (e) seem to be more strictly controlled under a greater number of rules and regulations which are pettier in nature.

A recent comprehensive study by McClellan (1994) confirms many findings summarized by Pollock-Byrne (1990), indicating that women are more often cited for less serious rule violations than men but punished more severely. McClellan's findings reveal stress factors that may impact the women to the point of needing health services. She examined disciplinary practices of female inmates (N=245) in two Texas women's prisons and compared them with those found in the prison for males (N=271). Both populations were closely matched in demographic and criminal history
characteristics. Though disciplinary rules and procedures were the same in all institutions studied, she found rather striking differences in disciplinary practices and explained them to be "best understood as a function of gender-specific interpretation and application of state-wide correctional policy" (p.72). The female wardens in the women prisons initiated a strict principle on rule-violating behavior to be "recorded on sight and handled through formal mechanisms" (p.86) while the male warden in the male prison exercised more discretion through informal reprimand and confiscation of contraband.

Such differences in approach meant that women were more often formally cited with violations of posted rules such as drying undergarments, or "excessive artwork" which might refer to too many family photographs on display, or "possession of contraband" which might refer to an extra bra or pillowcase (McClellen, 1994). Such practices may tax a stress level to emotional outbursts of anger, only to exacerbate the situation and lead to a chain reaction of events. Women inmates may adapt by adopting an abrasive and hostile attitude toward the experience. Anger outbursts against correctional officers could lead to punishments of solitary confinement.

McClellan (1994) found that of the three most severe sanctions, i.e., solitary confinement, loss of good conduct time, and reduction in time-earning status, a total of 771
sanctions were imposed on women compared to 149 for the 10% larger sample of men. She further states that in solitary confinement, for instance, the woman has to ask the correctional officer for everything, including sanitary items or toilet paper, which is especially demeaning and humiliating for a woman, even worse when the officer is a man. McLellan's findings suggest that misconduct behavior could be motivated by heightened distress or might be an indicator of ineffective coping capacity to deal with the institutional disciplinary practices.

Pollock-Byrne (1990) reported various assumptions to be considered for rule breaking behavior of incarcerated women: (a) "a relationship between menstruation and rule breaking" (p.74); (b) a profile of "most prone to prisonization [adaptation and socialization to the prison subculture]" (p.74); and factors including maternal loss before age ten, severe parental punishment, and uncontrolled or impulsive lifestyle. Although most of the assumptions were based on inmate self-reports or correctional officers' observations, differences among reasons for rule breaking behaviors remain open for further investigation.

**Correctional Officer Staff**

Whether a female prison should be staffed by female officers has been discussed in the literature for many decades. Lekkerkerker (1931) describes the role of matrons
in female institutions to be a vital one to function as a supervisor, teacher, counselor, and guide.

The officers should undoubtedly be women who know life and the world at large, and who have what may be called a convincing personality . . . It is especially important that the officers have a wholesome and objective understanding of and attitude towards sex, for they have to deal with sexual problems, and it is almost entirely through the attitudes and reactions of the officers that the inmates have to gain a correct interpretation of sexual questions which many of them so badly need (p. 273).

Yet, as it was then and is today, such enlightened staff is hoped for but rarely exists in any custodial institution. The temptation to succumb to abuse their position remains. As with the male staff, "women staff are just as capable of using their positions to unnecessarily taunt and humiliate the inmates under their control" (Pollock-Byrne, 1990, p. 113). Female staff tend to maternalize their relationship with inmates and not recognize the inmate woman's adulthood. On the other hand, it has been documented that women who had been battered suffered flashbacks when male officers worked in the housing units. They felt intimidated by the size and physical strength of the officer (Jose-Kampfner, 1992).

There is no clear evidence as to whether staffing according to gender is better or whether a male or female approach is more effective. But there is agreement that effective characteristics of the staff in correctional programs, regardless of gender, are social competence and
the ability to model prosocial interpersonal and problem-solving skills (Ross & Fabiano, 1986; Pollock-Byrne, 1990).

Programs

Programs for female prisoners are barely providing the necessary elements for future economic self-sufficiency. They tend to build on aspects of stereotypic feminine roles and domesticity, such as cosmetology, food services, housekeeping, nurse’s aide work, and minimal clerical skills development. Education may stop at the secondary level whereas often male offenders can proceed to the college level (Ross & Fabiano, 1986; Culliver, 1993).

Correctional Health Service, Needs and Utilization

Health Service

Correctional institutions are required by case law to provide the same level of health care to the inmates as is available to the general public (Cushing, 1986; Dubler, 1979). In order to comply with the law, most correctional facilities offer minimal custodial health care. This care includes routine physical examinations every two years for each inmate under age 35; medical and mental health treatment of acute illnesses and dental care when the need is identified; and treatments of general malaise episodes for which the inmate has to request a sick call. "Sick call" means that a nurse assesses the inmates’ health complaints, treats symptoms according to protocol or refers for further medical or mental health follow-up. Individual
institutions may offer a variety of additional services. In Hawaii, for instance, services include care of chronic illnesses, prenatal care, gynecologic care, nutritional counseling and others.

The prison environment is controlled and inmates have lost their freedom. The health care system in most cases is episodic; it responds to the acute health needs and illness treatment as required by law (Dubler, 1979; Ross & Fabiano, 1986; Cushing, 1986). The scope of health services varies greatly among correctional institutions. Culliver (1993) reports inadequate medical, nutritional, and substance abuse care in women’s prisons and overuse of psychotropic drugs. Experts agree that women’s health care in prisons needs to be specifically adjusted to women’s issues (Culliver, 1993; Kampfner, 1992; Weiner & Anno, 1992).

Services Needs

Rossi and Freeman (1989) contend that it is technically infeasible to measure the need of a population. Rather, they argue that demand for services can be measured because it will give a frequency score that can be compared with specific identified characteristics. They propose a specific type of needs assessment that also may be appropriate for correctional health: a study of "demand assessment." In most correctional settings, the inmates have to request or demand health services and state the reason for the request outside the routine health
assessments (every two years or yearly after age 35) or scheduled appointment. It is questionable though whether the stated reasons by the inmate for requesting services reflect her actual health need.

The inmate in her predicament may not be in a position to evaluate and clearly articulate her health needs, nor may she even understand her condition. The inmate's medical problems often reflect "ignorance, neglect, self-abuse behavior (including substance abuse), inadequate parental supervision and training, poor nutrition, poor health habits, limited access to health professionals . . . or indifference" (Ross & Fabiano, 1986, p.51). To reach a realistic match of health needs and services within the correctional setting requires an appreciation of complex realities that differ from those of the outside community.

Service Utilization

The few health service utilization studies of correctional facilities may give some insight as to the needs the inmates express. But hardly any of the few existing studies focus specifically on services requested by inmates. Rather, the focus of the analysis is on all services provided and their reasons. None compare the frequency scores of service utilization with inmate background factors or other identified characteristics.

Sheps, Schechter, and Prefontaine (1987) studied health service encounters for one month at six Regional
Institutions of the Correctional Services of Canada (CSC) on-site health care centers. Using a health clinic encounter form, a survey was done on 7,449 encounters. The mean encounter per inmate for that month was 5.2. The most common reasons for the encounters involved problems with the upper respiratory, gastrointestinal, and muscular skeletal systems (including back problems), and tension headache. The data focused on encounters only and not the profile of the inmates. In addition, data failed to distinguish between repeat encounters of the same inmates and new encounters of different individuals.

A record review survey of 87 randomly selected males at the Oahu Community Correctional Center (OCCC) in Hawaii revealed that male inmates who were incarcerated for the first time had considerably more frequent "sick call" requests during the first three to six months period of incarceration than those with repeat incarceration histories. Those individuals with a documented history of alcohol and drug abuse requested more sick calls within the first six months of incarceration than those with no substance abuse history. The most frequent reasons for sick call or clinic follow-up were mental illness, respiratory, skin, and muscular skeletal problems (Adams, Goldkuhle, Kelso, Rumambi & Vom Dorp, 1990).

Steadman, Holohean, and Dvoskin (1991) surveyed 3,684 inmates in the New York State prison system to estimate
mental health needs and service utilization among prison inmates. When the data were analyzed according to gender (only 4% were women), women scored higher at every disability level and thus sought significantly more services than men. These results support statistics from Hawaii. The 1991 Department of Public Safety, State of Hawaii, Medical Service Statistics show that, compared to male inmates at OCCC, the use of psychiatric consultations were considerably higher among women inmates at WCCC (75% at WCCC and 17% at OCCC) as were the sick call visits (2.36% at WCCC and 1.27% at OCCC).

Specifically, Steadman, Holohean, and Dvoskin (1991) attempted to run a discriminant analysis separately for men and women. They found that patterns of utilization differed significantly by sex. A greater proportion of women compared to men received mental health services (37.4% and 13.4% respectively). Clinical factors associated with reception of mental health services varied considerably by sex. For women inmates, for example, depression ranked seventh on a subscale while for men it ranked first as a factor associated with reception of mental health services. For women, of greater importance was whether their convictions were for violent crimes and the length of sentencing. Maximum sentence ranked second and violent crime third for the women while for men, maximum sentence and their violent crimes ranked sixth and seventh.
respectively. But in both groups, the proportion receiving services had a strong relationship to the subjects’ psychiatric disability level, measured by psychiatric disability subscales (e.g., Disruptive-Agitated-Irritability, Psychotic Symptom, Confusion, Depression) and functional disability level subscales related to Activities of Daily Living.

Women’s Health Perception and Status

A question can be raised as to whether women in general or when in prison confinement perceive their health care needs differently than men do. A prospective study on health care utilization outside correctional institutions, conducted by Tessler, Mechanic and Dimond (1976) may help clarify this issue. Data were collected on 327 patients at a prepaid health maintenance organization (HMO). Effects on physician utilization were tested. Unlike other utilization studies, aspects of the supportive findings and study design present some understanding of women and health behaviors outside the prison that relate well to women inmates.

The HMO study is unique among noncorrectional and correctional health studies because it distinguishes measures of health care utilization between total office visits (referrals, return visits and general check up) and visits initiated by patients with presenting symptoms. The researchers considered patient-initiated visits more
sensitive to the health perception of the individual (Tessler, Mechanic & Dimond, 1976).

Findings revealed that among patients with presenting symptoms, particularly among women, distress was a statistically significant variable in both initiation and follow-up health services, though stronger in respect to initiated visits. The health symptoms presented by the women related to a list of 34 chronic health problems (e.g., asthma, bronchitis, arthritis) for which physician visits were justified. The symptoms were reported to have been most important in transmitting the effects of distress without addressing distress directly. The researchers concluded that psychosocial needs are triggers for physician utilization (Tessler, Mechanic & Dimond, 1976).

Monat and Lazarus (1977) extensively studied stress responses and point out three basic theoretical positions relating the interdependency of stress and physical illness that could explain some of the health-seeking behaviors described in the health services utilization studies. Stress responses, initially described and theorized by Selye (1956), have a predictive pattern of physiological reactions, referred to as the general adaptation syndrome (GAS). The GAS theory has influenced the development of behavioral and psychological conceptions of stress and adaptation to adversities.
The first type of response is that which occurs under acute stress. There is intense release of hormones creating dramatic alterations in bodily functions, i.e., pounding heart, sweating, and trembling. With prolonged stress, physiological exhaustion occurs. The defenses break down and somatic symptoms appear, e.g., loss of appetite, insomnia, headache or muscular skeletal pain or other focus of discomfort. A second stress response is manifested by engaging in coping activities that are damaging to health, i.e., altered style of life characterized by poor nutrition, minimal rest, and substance abuse, which increase the likelihood of tissue damage and disease. A third response is manifested by the adaptation of psychological and sociological factors that consistently lead the person to minimize the significance of various symptoms and mistrust health care professionals, resulting in acute somatic illness and distress morbidity (Monat & Lazarus, 1977). Though well recognized in the behavioral sciences and psychology, the phenomenon of GAS and linkage to health seeking behavior was not considered in the health care utilization studies.

Kessler (1986) reviewed three main types of empirical health care utilization studies focusing on sex differences: self-report surveys, health examination, and delay in treatment studies. He found that it was widely accepted that women have much higher rates of physician utilization than
men and present complaints of mild symptoms, even when controlled for childbearing-connected visits. Many of the reported symptoms were related to mental health. He stated in his concluding arguments that most utilization surveys failed to recognize the importance of interrelated factors and interactions involving perceived illness. He proposed reanalysis of survey studies with sensitive methods that search systematically for subgroup effects among respondents who reported symptoms.

Whether the women’s health services utilization behavior differs from those within or outside the correctional institution requires more investigation than now exists. However, there is evidence that women in general, in prison or outside prison, do express their health needs differently than men. Women more readily seem to present physiologic, nonspecific symptoms as signals of distress and utilize services more frequently.

Ingram-Fogel (1991) surveyed 135 newly incarcerated, non-pregnant women with sentences of at least two years at a minimum and maximum security facility for women. Data on health status were collected through structured interviews and chart review at the time of incarceration to document the physical and psychological health problems. After six months, a subsample of 55 women was reinterviewed. She found that two-thirds experienced depressive symptomology and high distress with malfunctioning. Frequent findings in
both groups included headaches, backaches, fatigue, heart problems, hypertension, dental, and mental problems. Additionally, physical distress was reported as being high among incarcerated women, including many symptoms related to gynecological problems. Yet, the subjects did not perceive themselves as unhealthy.

Hurley and Dunne (1991) screened 92 imprisoned women for psychological distress and psychiatric morbidity with the 12-item General Health Questionnaire, the Hamilton Depression Rating Scale, a Recent Stressful Life Events questionnaire and the Structured Clinical Interview for DSM-III-R. Their findings revealed that stressors from outside of the prison included such events as court appearance, recent separation from children, family and friends, loss of control over domestic affairs, and serious arguments with relatives or major financial crises; inside stressors included conflicts with fellow inmates and prison staff, assault, victimization or crises in homosexual relationships. These were linked to significantly higher stress scores. Also, women held in maximum security or who had a previous prison record had significantly higher stress scores than those with lesser security or incarceration histories. Symptoms of insomnia, anxiety, demoralization, depression and coping problems were much more common among women prisoners than among women in general.
Health Needs and Effects from a Public Health Perspective

Redman, Hennrikus, Bowman and Sanson-Fisher (1988) in their evaluation study of various methods of assessing women’s health services needs, concluded that assessment methods often fail to identify accurately nonphysical aspects of health related to emotional and social well-being such as socioeconomic factors, rape and abuse, motherhood and womanhood. Their effects may differ from those of men. Background factors related to public health problems are collectively more pronounced among incarcerated women. Their interrelated health effects may significantly impact health services utilization in correctional facilities.

Abuse

Many women come into prison with a history of childhood neglect and abuse—physical, sexual or both. More than 4 in every 10 women compared to more than 1 in every 10 men reported being abused at least once before their last admission to prison (U.S. Dept. Of Justice, 1994). Strong evidence exists that domestic violence is associated with criminality (Blount, Kuhns & Silverman, 1993; Chesney-Lind & Rodriguez, 1983; Daly, 1994; Gilfus, 1992; Miller, 1986).

The abuse and neglect described in the studies involved varying degrees of intensity, frequency and excessiveness. Sexual abuse and incest were often inflicted by various family members or friends. The pattern usually started at a very early age with touching for favors, escalating to
intercourse in the early teens. Methods of threats, seductions, and promises under strict secrecy were used to gain consent to the sexual requests.

Physical abuse usually reflected a pattern beginning in early childhood with frequent and recurrent disciplinary spankings that would escalate to violent beatings into adolescence, often resulting in severe injuries for mild or innocent behavior. In most cases, one or both parents (or guardians) had significant problems with drugs or alcohol which often led to neglect and family violence. Most of the women in the studies had seen their mothers battered by male family members and then in turn were battered by their mother or father (or male partner) or both.

Neglect and deprivation of the basic needs is a documented component of abuse. A sense of safety, belonging, being nurtured, and security gave way to chaotic situations of irrational beatings and sexual victimization as a childhood experience. As Chesney-Lind and Rodriguez (1983) state: "[The women prisoners] have been the victims of an astonishing amount of severe child abuse" (p. 52).

Acts of coping, self-protection or survival strategies "pushed the young women into finding illegal ways of supporting themselves" (Gilfus, 1992, p. 77).

Leaving home at an early age, often coupled with teenage pregnancy, meant that adulthood began early for these women. Patterns of repeated victimization, drug addiction, street work, relationships with men involved in street crime, and the demands of mothering are the
themes that mark their transition from childhood to adulthood. (p.78)

**Survival Strategies**

Running away from home, caring for others, and dreams for a successful future are the survival strategies that gave way to escape and survival in the street. Delinquent and illegal activities are characteristic patterns of abused women (Gilfus, 1992; Miller, 1986).

Gilfus (1992) explored patterns by which women enter into criminal activities. From in-depth life history interviews of 20 incarcerated women, Gilfus recorded a chilling and detailed account of the lives of the subjects. Fifteen women had experienced recurrent severe physical child abuse, which resulted in bodily injuries, and 13 experienced childhood sexual abuse. Many considered suicide and 10 actually attempted it; 13 ran away from home. Once in the street, a new cycle of danger and revictimization began that was closely associated with alcohol and drug use, truancy, stealing, staying away from school, sleeping in cars, and hustling for money by panhandling and prostitution; Miller (1986) described it as "deviant street networking" (p. 35). Most of all, a new exposure to male violence began.

Sixteen of the 20 women reported experiences of rape, assault, and even attempted murder. They became involved in battering and had co-addict relationships. They shared the
"activities of securing and injecting drugs, but had a
gendered division of labor for illegally obtaining money for
drugs" (Gilfus, 1992, p.79). The woman was expected to
supply money from working as a prostitute and shoplifting
while the man, if working other than pimping, committed
robbery. If she didn’t supply enough or he felt she spent
too much money, he often would beat her severely.

Pimps or other controlling members of the street
network, also described by Miller (1986), often recruit
teenagers, as young as 12 years old, and groom them into
loyal and dependent prostitutes who promote for them. They
use methods of isolation, romantic overtures, physical
violence, drugs and often shelter. Fourteen of the 20 women
in the Gilfus study had fallen into relationships with men
who shared and encouraged drug use, and illegal activities;
they used violence to keep the women "in line."
As such, the cycle of violence and intensified co-dependence
continued from childhood into adulthood for 80% of the women
in this study.

Mothering was identified as another strong theme.
Thirteen women became pregnant as teenagers of whom four
kept their first baby. The others miscarried, aborted, or
gave their babies up for adoption and "deeply mourned the
loss and felt that the loss had pushed them further into
drug abuse and illegal activity" (Gilfus, 1992, p. 80).
They soon became pregnant again and kept custody of their baby.

In summary, survival strategies of women who experience severe childhood abuse appear to lead a continual search for the dream of a successful future of nurture, security, love, and a sense of belonging through any means: street life, motherhood, relationships, and crime. Such lives contribute to health risk behaviors of alcohol and drug abuse in their early teens, evolving to intravenous drug use addiction among 15 (75%) of the 20 studied by Gilfus (1992), who were also involved with prostitution. These findings show the same pattern reported by Chesney-Lind and Rodriguez (1983) and other related studies on the subject (Daly, 1994; Pollock-Byrne, 1990; Ross & Fabiano, 1986).

**Battered Women Who Kill**

A frequently battered woman who has suffered serious injuries in the course of rapidly escalating physical abuse, may eventually kill her batterer. She is more likely to have been raped and sexually abused, threatened with death, and menaced with weapons. She may live in an environment where weapons are available. Her batterer may be a drug and alcohol abuser, and may have battered her children. She often is older, less well educated and socially more isolated than the battered woman who does not kill (Johann & Osanka, 1989; Jones, 1980). Most of the killings occur
during marital discord out of self-defense or self-preservation (Johann & Osanka, 1989).

**Health Effects**

**Substance Abuse.** Alcohol and drug use has been identified in nearly all studies on childhood abuse as one of the serious long-term effects of the abuse. Substance abuse is associated with prostitution (Gilfus, 1992; Miller, 1986). Aside from the health risks to every system of the body, the long-term psychosocial effects of substance abuse on women are less considered in the literature. Miller (1986) reports that, although drug use is part of the street life, once women have become heavy drug users or dealers, they often become outcasts. A man who is a heavy drug user himself may prefer recruiting women who are only occasional users. Heavily dependent women were considered either too "hot" (under scrutiny of the narcotics squad), too "used up" (unattractive because of physical changes accompanying addiction), or too "strung out" (crazy, desperate, unreliable). "In short, when the addict most needs the deviant street network, she has the least to give it and is, in fact, perceived as a threat to it" (p. 111). In this highly addicted state and shunned by the street network, women are most vulnerable to arrest and incarceration.

**Battered Woman Syndrome (BWS).** "The Battered Woman Syndrome (BWS) is a sociological theory of behavior pattern in battering relationships which are characterized by
physical and psychological abuse" (Johann & Osanka, 1989, p. 27). Abused women suffer an increasing deterioration of their ability to cope or to seek outside help. They experience an erosion of a mental and emotional state at a level of decline wherein "she is, by medical criteria, unable to distinguish right and wrong actions in her struggle for physical and emotional safety" (Eisenberg & Dillon, 1989, p. 39). According to Eisenberg and Dillon (1989), women who suffer from BWS use excessive sleeping pills, psychotropics and others prescribed for conditions that are incongruous. Characteristically, the initial symptoms for which the abused women seek medical attention is of a chronic nature, often recurrent and covert as being either coincidental or incidental to other problems of the individual or events in the family.

Eisenberg and Dillon (1989) consider BWS a disease. To treat BWS requires a wholistic approach. They state that "the disease is in fact an acutely active illness of psychological and physical dimensions with invariable chronic quiescent, or inferential symptomatology" (p. 40).

Certain characteristics and behaviors of women who suffer BWS has been identified among the prison inmates. They show low self-esteem and have traditional views about female sex roles and home. They accept guilt and blame for the battering and think, if they improve, the men would stop beating them. They experience severe stress reactions with
psychophysiological complaints and feel that no one can help them unless they improve themselves (Johann & Osanka, 1989).

**Trauma during incarceration.** Women who have been sexually abused may relive the trauma when subjected to body searches during their imprisonment. After such searches, some women report symptoms associated with post-traumatic stress disorder, such as hearing voices (often of the perpetrator), panic attacks, eating disorders, nightmares, insomnia, and flashbacks. Tranquilizers and other psychotropic medications may be prescribed without acknowledgement of the abuse that the inmates have suffered or the validity of their pain. The use of medication implies that they have a medical problem, rather than addressing their victimization, pain, and need to heal (Jose-Kampfner, 1992).

**Poverty**

Incarcerated women are mostly poor and from low socioeconomic conditions (ACA, 1991). Poverty often leads to street life of begging, shoplifting, prostitution, and drug and alcohol abuse (Carlen, 1988).

Slater and Carlton (1985) reviewed a series of national and international studies and reports on behavior, lifestyle, and socioeconomic variables as determinants of health status. They report that an overwhelming evidence exists on the relationship of morbidity and mortality and income, education, and occupation. The authors concluded
that health practices and the health status of individuals are related to their socioeconomic status. In fact, they reinforced Cassel's (the late, internationally recognized social epidemiologist) assertion that social factors are even more important determinants of our health status than the availability of medical care, and that disease rates are more clearly related to social phenomena than other factors.

The U.S. Public Health Service "... consistently reports income as a correlate of health status. The higher the level of family income, the higher the health status; conversely, the lower the family income, the more likely will health problems limit family members' work and other activities" (Slater & Carlton, 1985, p. 28). Significantly higher mortality rates have been found among laborers and service workers than professionals and technical workers. As the individual's income increases, the risk of mortality decreases. This relationship was reported to be stronger for males than females. But in terms of education, as the years of formal education acquired increased, mortality rates showed a significant stronger decrease among women than men (Slater & Carlton, 1985). These findings may have some implication for program emphasis in women's prisons.

Daly (1989) analyzed data from a set of studies by Wheeler, Stanton, Weisburd, and Bode (1982, 1988) to contrast varieties of men's and women's white-collar crime, their respective socioeconomic profile and motivation of
crime involvement. Although this was a select group of white-collar offenders, the comparative findings are supportive of significant gender differences. The data consisted of 1,342 defendants (14% female) who were convicted of white collar offenses. Findings indicated that women were somewhat younger than men; they were much less likely to have completed four years of college; and they were more likely to have familial dependents outside a marital context. They occupied lower level jobs and were poorer than the men. Nearly 60% were bank tellers compared to 14% of the men who were more often bank officers or financial managers. Most women embezzled funds by taking cash or negotiable instruments in contrast to the men who manipulated accounts rather than directly taking cash. Both men and women were far from affluent but the median value of assets owned for women was much less. Assets ranged from none to $2,500 for the women; and from $5,500 to $8,500 for the men.

Another emphasis on poverty and women is the relationship between poverty and the motivation to commit crime. Daly (1989) also reported gender difference in motivations for the crime. Motives differ between men and women in importance of self and family in need-based justifications and in the degree to which they were being influenced by others. Although men were just as likely to say they needed money for themselves or for their families,
family need dominated women’s need-based motives more than men’s (35% and 15%, respectively). Also, more women were influenced by others, either by coercion, following orders, or doing a favor. Such co-dependent pattern appears to be a strong characteristic among the incarcerated women and may influence the behavior in prison.

Motherhood

Seventy-five percent of the incarcerated women in the U.S. are mothers with young children and only one third are married (ACA, 1991; Ross & Fabiano, 1986). Hence, the stress effects of separation were prominent (Gilfus, 1992; Jose-Kampfner, 1992; Muraskin & Alleman, 1993; Ross & Fabiano, 1989; Ward & Kassebaum, 1965). Separation from children is the worst aspect of prison for women, according to Pollock-Byrne (1990) "... the need to connect with their children is one that expresses itself far more clearly and anxiously among female offenders" (p. 74). To an item response of a survey question for N=1,830 imprisoned women: "Who is the most important person in your life right now?" the majority (51%) of the inmates responded "missing the child/children" (ACA, 1991).

Visitation varies from rare to weekly, but often the children have no means of transportation. Documented interviews reveal that the mothers feel shame, guilt, and embarrassment that their crime led to separation from their children (Culliver, 1993).
Gilfus (1992) in her study found that prior to their incarceration, 15 of the 20 imprisoned women or 75% had custody of their child(ren). While incarcerated, most had entrusted their child(ren) to their mothers, although their mothers may have been physically and emotionally abusive. But to the women this was a better alternative than giving custody over to the state and risking permanent loss. "One of the recurring themes expressed by the women was the pain and guilt they felt about their children" (p. 81). Most saw themselves as good and loving mothers who tried very hard to protect their children from the negative effects of their own illegal activities. They were increasingly "...torn between the competing demands of addiction, mothering, and hustling" (p. 81).

Womanhood

A woman’s biological processes, such as menstruation, lactation, and menopause and their effects on health and well-being have been presented, though not without controversies, in some literature on offending women (Johann & Osanka, 1989; Pollock-Byrne, 1990; Ross & Fabiano, 1986). It is presumed that a relationship exists between premenstrual syndrome (PMS) and criminal behavior. Females are prone to more violent behavior, acting out, or other types of deviance in relation to the menstrual cycle. But the evidence is more based on self-reports, and the duration of menstrual cycles and symptoms differ greatly among
individuals. Thus, the issue of a relationship with crime remains a controversy (Pollock-Byrne, 1990; Ross & Fabiano, 1986). PMS has been introduced in the court in cases of battered women who kill. It has been used as defense of diminished capacity and self-defense to reduce the murder charge (Johann & Osanka, 1989).

Women inmates may report PMS symptoms (both physical and psychological) and behavior changes may be recognized. Sudden feelings of sadness, being tearful, anger, and irritability; marked depressive moods; lack of energy, fatigue, appetite changes; or headaches, joint or muscle pain; or a sensation of "bloating" or weight gain may be involved. These disturbances may seriously interfere with social activities or work performance and may need medical attention (Johann & Osanka, 1989; Ross & Fabiano, 1986).

From the literature review it can be inferred that the health predicament most women bring with them to prison seem to be linked to public health related factors. The factors are multiple and interconnected. But the question is which factor or combination of factors has greater stress effects on the health of incarcerated women. Or, which ones prompt group effects impacting utilization of health services? Most studies, as discussed, focus on individual stress factors and their health effects separately.

Daly (1994) studied various combinations of stress factors related to the inmate's background. Her study is of
interest because she identified and categorized differentiating women inmate groups who shared common background characteristics and behaviors that lead to crime. Their background reflects public health problems which also has health implications that could impact correctional health services. Daly reduced from a New Haven data set of felony court records (N=189) a deep-sample set of women who had been convicted (N=40) and sentenced for interpersonal violence, i.e., homicide, assault, risk of injury, arson, and rape. She developed a typology of their background characteristics to describe five pathway categories that lead them to felony court:

Street Women: Pushed out or ran away from an abusive household and went to the street or got involved in petty hustles; became drug addicted and engaged in prostitution, theft, and selling drugs to support drug habit; well-developed record of arrests and some time incarcerated.

Harmed and Harming Women: Abused or neglected as a child; identified as a "problem child" or one who acts out; gets violent when drinking alcohol; may be drug addicted and have psychological problems; unable to cope with current situation

a. Violence and alcohol: "Out-of-control" or violent behavior evidenced as a child or in adolescence; gets violent when drinking alcohol; may also have psychological problems

b. Violence and drug addiction: "Out of control" or violent behavior evidenced as a child or in adolescence; addicted to heroin or cocaine and engaged in some crime to support habit; psychological problems

c. Psychological problems coping: Unable to cope with current circumstances; feels aggrieved toward parents or siblings; psychological problems
Battered Women: In a relationship with a violent man, or recently ended such a relationship

Drug-connected Women: Uses or sells drugs in connections with boyfriends or family members

Other: Immediate economic circumstance or greed; none is a street woman, a harmed and harming, or drug-connected woman. (Daly, 1994, pp. 47-48)

Daly’s study was found to be the only one that addressed systematically categories of interrelated background factors of women inmates and their group effects. In this case, the effects were identified as having lead to a path of crime. But as seen, the categories of interrelated factors are also stressors that have health effects and may impact correctional health services differently than known so far. The study invites further development of typologies of group characteristics that point to health risk predictors of women upon incarceration and the impacts on health services utilization.

Correctional health service is largely managed medically. But, as revealed in the review of the literature, the overwhelming background characteristics of the inmate population reflect public health related problems. Their effects on the inmate’s health of either gender in an incarceration environment are hardly understood. As indicated, incarcerated women utilize health services more frequently than men. Why that is requires empirical investigation.
CHAPTER III
METHODOLOGY

General Approach to Qualitative Research

This exploratory study was undertaken to search for a better understanding of a select group under specific adverse conditions: women in prison. Its aim is to operationalize a systematic scientific enquiry method, as described by Crabtree and Miller (1992), that identifies possible associations between characteristics of the women and the effects of incarceration and their health care needs.

Benoliel (1984) identifies four broad areas in which unstructured, qualitative approaches appear most promising in the health care field: (1) environmental influences on care-giving systems; (2) decision-making processes; (3) people's adaptation to critical life experiences, such as chronic illnesses or developmental changes; and (4) the nature of nurse-client social transactions in relation to stability and change. This study examines external influences and behaviors of an incarcerated group of women. Incarceration is a critical life experience which may elicit health care seeking behaviors of individuals yet unknown to health care providers.
Qualitative research is based on the premise that "knowledge about humans is not possible without describing human experience as it is lived and as it is defined by the actors themselves" (Polit & Hungler, 1993, p.325). Compared to quantitative research, qualitative research produces a wealth of data about a much smaller number of people. Depth and detail are needed to better explain complex phenomena of human behavior, particularly, where outcome measurements have not been developed and tested, as is the case in this study. For this reason, it is more appropriate to gather descriptive information for indepth case elaboration that will give more substance to an area of focus.

Qualitative data, as described by Patton (1990), are collected by in-depth open-ended interviews, direct observation, analysis of written documents or a combination of these. Such method generates descriptions and possible associations. In contrast, quantitative methods of data collection require the use of carefully constructed instruments, standardized measures, and controlled response categories.

While validity in quantitative research depends on the well constructed instrument and standardized procedures, validity in qualitative enquiry is embodied in the researcher (Patton, 1990). The investigator in this study is a nurse expert in health services who has the knowledge
and experience in medical, nursing, and psychosocial terminology and medical record interpretation.

Maintenance of empirical integrity in qualitative research often raises concerns. These concerns are addressed by various methods of data collection and analysis suggested by Crabtree and Miller (1992), Strauss and Corbin (1990), and Patton (1990). They propose strategies of triangulation that contribute to verification and validation of qualitative analysis and identify four methods: (1) methods triangulation—checking consistency of findings by different data-collection methods; (2) triangulation of sources—checking consistency of different data sources with the same method; (3) analysis triangulation—using multiple analyses to review findings; and (4) theory/perspective triangulation—using multiple perspectives or theories to interpret the data.

In this study, triangulation of sources and analysis triangulation methods were applied. The latter method involves comparing qualitative data with data collected through quantitative methods. Quantified sociodemographic findings, according to Strauss and Corbin (1990), can be used to validate qualitative analysis.

**Study Design**

This exploratory study was designed to generate information on the health behavior of imprisoned women. It attempts to explain empirically derived relationships among
health behaviors, pre-existing characteristics and stress factors during incarceration. Three national surveys conducted by the American Correctional Associations's (ACA) Task Force on the Female Offender in 1987 (ACA, 1990) and the Statistical Distributions of Inmate Populations in Hawaii, compiled by the State of Hawaii Department of Public Safety (1992), provided the various categories of sociodemographic variables.

This study extracts profile characteristics of imprisoned women in the Women's Community Correctional Center (WCCC) in the State of Hawaii during 1992. Health services activities and their documented reasons, particularly those requested by the women inmates are explored. Data were collected from existing records for cross-sectional analysis.

Results of this applied research, however, can be generalized only within its limited application context.

**Conceptual Model For Enquiry**

With consideration of the interwoven complexities of biological and psychosocial dimensions of individuals’ experiences within the context of involuntary institutional confinement, a conceptual model was developed for enquiry to be flexible and broad enough to allow for maximum exploration of concepts.

Engel (1977) proposed a biopsychosocial model that is compatible with social and behavioral science concepts and
allows for the incorporation of new information of the interaction between the biological state, psychological processes and social functioning. McHugh and Vallis (1985) state that "in this [biopsychosocial] model the biological, psychological and social context are considered as equally important dimensions, with none having a priori superiority and understanding of the nature of human behavior in health and disease" (p. 1). Leigh and Reiser (1985) have provided one of the few operationalizations of the biopsychosocial model, a Patient Evaluation Grid (PEG), to define and understand the context of patient's complaints. Although the researchers focused on medical practice, the overall PEG dimensions of the biopsychosocial model can be used in this study. Thus, the independent variables in this study will include the following factors that are associated with an inmate prior to her incarceration and identified during the initial assessment screening.

**Sociodemographic Dimensions:** Variables include: age, sex, ethnicity, race, marital status, number and ages of children, extended family, friends, occupation, employment status, income, education, religion, crime data and history.

**Biological Dimensions:** Variables include health status and health risks such as drug and alcohol abuse, history of physical, sexual and mental abuse.

**Psychosocial Dimensions:** Variables include those that involve interpersonal relations, e.g., conflicts, losses,
 separations, or other significant events that occurred before the recent incarceration.

Stressors that may contribute to health seeking behavior may also affect incarcerated populations. Of particular interest were stressors, identified by Hurley and Dunne (1991), linked to higher stress scores of the women inmates. They were stressors from the outside of the prison impacting on the inmate while incarcerated, i.e., court appearances, news from the family, or change in financial state; and stressors from the "inside" of the institution, i.e., conflicts with fellow inmates or staff. Categories of events during incarceration that might elicit stress reactions were selected as intervening variables to test the assumption that the inmate's health seeking behavior would be impacted. Events that could be categorized as stressors and serve as intervening variables are:

**Life Events**—stressors such as the recent birth of a child, death in the family, loss of job or income in the family, or any other significant event concerning the family or other support systems.

**Scheduled Events**—stressors such as program determinations, court dates, parole hearings, misconduct hearings, transfers to other facilities.

**Precarious Events**—stressors such as those related to conflict situations with staff or others, injury, or other unpredicted events.
Response or dependent variables for this study include: (1) the number, frequency and reasons for health services requested by the inmate and (2) the number, frequency and reasons of health services referred by others. Health services include nursing sick calls, medical care and mental health services.

Figure 1 presents a conceptualized model for the analysis.
INMATE PROFILE
Sociodemographic Dimensions
Biological Dimensions
Psychosocial Dimensions

STRESSORS
Life Events
Scheduled Events
Precarious Events

RESPONSES
Health services
requests & utilizations
and reported reasons
Precarious Events

Independent Variables
Intervening Variables
Dependent Variables

Figure 1. Conceptual Model for Enquiry and Data Analysis
**Study Sample**

Several steps were taken to achieve a final sample of cases that met the selection criteria. These criteria include women who: (1) were age 18 years and above, (2) were convicted of a felony, (3) were sentenced to one year or more, and (4) were at WCCC at any time during the study period January 1 through December 31, 1992.

A complete roster of sentenced felon inmates who were at WCCC during the calendar year 1992 could not be retrieved at the Department of Public Safety Research and Information Systems Office. Therefore, several approaches were taken to ensure accurate sampling. First, the sample size was estimated: during 1992, the census of imprisoned women averaged 63 with a low of 55 and a high of 68 (State of Hawaii, Department of Public Safety, 1992). With an average of one-third turnover in the population per year, approximately 84 individual subjects \((63+21=84)\) were at the facility during 1992. As such, the estimated sample size would range between a minimum of 63 to a maximum of 84 subjects.

Second, statistical distributions of the "Sentenced Felon Population by Location as of December 31, 1992" and "Sentenced Felon Releases of the Calendar Year 1992" were obtained from the Department of Public Safety Research and Information Systems Office. From these documents, inmates could be identified by location, identification number
(SID), name, sex, date of birth (DOB), ethnicity, admission, and release date. Initially 82 sentenced felon women were identified who were at WCCC during 1992 and who met the selection criteria.

Of the 82 subject sample, a final sample of 67 subjects was used for the study. The other 15 subjects had incomplete sets of records. Either the inmate file or the medical record or both could not be retrieved, were locked in court, had been transferred to other facilities, or could not be located. Of note is that the WCCC has been relocated to a new facility since 1992 and some records were stored at different locations; some were in unmarked boxes and could not be found.

**Instrument Construction**

The data collection instrument (see Appendix A) was constructed to gather data from existing records. These records included: (1) the medical admission screening form, which contains brief observational and health history information to determine the safety and immediate health risk of the inmate (filled out by a correctional intake officer or social worker); (2) the medical history and physical examination forms, which includes information of a more complete health history and physical examination (filled out by a health care professional, i.e., nurse practitioner or physician); and (3) the mental health intake screening form, which includes psychosocial information and
notes on the crime committed (filled out by mental health professionals).

All information related to the health care rendered to the inmate during incarceration, including medical, nursing and mental health, are kept in the medical records. These records contain objective health care data and subjective narratives entered by the treating health care provider. The narratives elaborate on health services provided and reasons for care and treatments rendered, including sick call requests.

The inmate records contain sociodemographic data, data on the crime history, court determinations, program decisions, inmate institutional conduct and other significant information of social events, activities or socioeconomic data related to the inmate, her family, and significant others.

The data collection instrument was designed to identify variables and structure the information from two sets of records. It was organized into three sections: Section I, the **Profile** segment, includes demographic, psychosocial and health risk variables; Section II, **Stressors**, includes variables associated with scheduled events and precarious events; and Section III, **Response**, includes variables related to requests and reasons for, and referrals to health services.
Data Collection

Data were collected between May and July of 1994. The medical records were kept in the Health Care Unit of the facility. To safeguard and maintain confidentiality, a medical records clerk would retrieve and return records from a secure file cabinet upon request. The review took place under semi-observation in areas of the Health Care Unit where the investigator could be seen by the health care staff and a correctional officer who is always present with inmates. In addition, the investigator was able to observe health care services activities.

The inmate records were kept in the administration office in a separate building from the Health Care Unit. Again, for security and confidentiality purposes, inmate records were retrieved and returned to a secure file cabinet by a record clerk. The investigator could either review the documents in the secretaries' or social worker's office while under observation.

To achieve maximum internal consistency of the data, some decisions were made during the data collection process. For example, in the absence of a central information system, sociodemographic information was gathered and entered by staff of various agencies and offices for different purposes. Medical and inmate records are rarely shared. Both have sociodemographic data that often are conflicting
or incomplete. It was decided that information of the most consistent entries would be used.

Each inmate record contains a Presentence Diagnosis and Summary Report which is prepared by a Probation Officer in preparation for sentencing hearing. This document includes: (1) court information, i.e., original charge, final charge, sentencing date(s), pretrial detention dates; (2) identification data, i.e., legal name, alias, sex, birth place, age, identification numbers, address, height, weight, color of eyes, visible marks; (3) offense information; (4) victim's statement; (5) restitution; (6) defendant's statement; (7) juvenile record, which either contains extensive juvenile history or indications that a juvenile offense history existed; (8) adult criminal record dates summary; (9) a general inmate assessment based on recorded sources and inmate interview, including factors supporting a sentence to imprisonment, character, attitude, history of offenses; and (10) disposition. In most cases, this summary report was rather extensive in sociodemographic data and crime history and was always updated for new hearings. Pertinent data, e.g., court dates, misconduct hearings, birthplace, and marital status were cross-checked with official documents or entries in several places in the record. This summary report also gave an extensive family history, often inconclusively and inconsistently documented in the medical records. In most cases the sociodemographic
information that was found in the medical record could be verified in the summary report of the inmate record. Also considered was any information that had the most recent update to 1992, including court documents.

To distinguish information that had been retrieved from a particular record, the data for this study were recorded in two colors: red for the inmate record and blue or black for the medical record. Often, entries were copied verbatim to keep the information in context. Health services entries were copied as recorded in terms of date and reason(s); often the entries, particularly the mental health notes, were further summarized to keep the reasons in context. For example, an inmate described as "agitated" due to a fight with another inmate was differentiated from agitation due to an organic personality disorder needing medication adjustment.

To preserve subject anonymity, several measures were taken during the data collection process. Initially, all information was recorded into the data collection instrument (Appendix A). Since data were retrieved from two separate sets of records and an official statistics roster, the official inmate identification number (SID) was used without the inmate's name. The SID numbers were cross-checked with the names on the inmate roster to assure the same subject. After completion of the data collection, information of each subject was entered into a computer at which time the
inmates' ID numbers were excluded and new research codes were assigned to each study subject. At the completion of data collection, all lists with inmate SIDs were destroyed.

Data Analysis.

The data analysis involved qualitative and quantitative analyses. Methods included content analysis of inmate and medical records, the investigator's summary and field notes, and statistical analyses of quantitative measurements.

Content analysis, described by Patton (1990) and Crabtree and Miller (1992), involves identifying variables, organizing data, coding, and categorizing the primary patterns in the data. In this study, identification of variables in particular cases began while reading through the institutional documents, inmate profiles, medical records, and health service utilization summaries. The data collection instrument was the guiding tool to remain focused on the study. Additional field notes were taken as certain patterns, thoughts and observations of interest were noted.

Several steps were used in the analysis:

1. Organization of data relating to the profile of the study population, e.g., sociodemographic, biological, and psychosocial dimensions.
2. Measurement of observations related to profile variables.
3. Coding and categorization of intervening variables and responses.
4. Univariate and cross tabulations to describe the sample profile, including patterns and characteristics of the study group and associations between inmate characteristics, intervening variables and responses.

Organization of Data

The collected data were transferred from the data collection instrument and organized into three columns: (1) independent, (2) intervening and (3) dependent variable categories.

Measurement of Sociodemographic Observations

Sociodemographic observations were assigned measurements according to their discrete or continuous characteristics, level and properties as described by Walsh (1990). Discrete variables classify observations according to the kind or quality of their characteristics. For instance, yes/no, black/white, male/female are dichotomous discrete variables while multicategory discrete variables are examples of religious affiliation, ethnic origin or income. Continuous variables can have any value between two points on a scale and be classified according to their magnitude and quantity as in age.

The numbers assigned to the specific study variables reflect various levels of measurement and respective measurement properties. The various levels are defined as nominal, ordinal, interval, and ratio levels of measurements that have distinct properties that are hierarchial and
cumulative (Walsh, 1990). Nominal and ordinal variables are qualitative measurements. They are mutually exclusive. Gender represents a nominal variable. Ordinal measurements have nominal properties that can be ordered in gradation without defined intervals, e.g., health services utilization ranked as low, medium or high. Interval and ratio level variables are quantitative measurements with properties of equal units. Interval measurements are of equal magnitude and lack a starting point of zero. Ratio measurement starts at zero. Examples of ratio scales are age, income or length of stay in the institution (Walsh, 1990).

Forty-eight sociodemographic variables were identified and assigned measurements. For a complete summary of the variables and their codes, categories, and measurements, see Coding System I, Appendix B.

Coding and Categorization of Health Care Services Requests and Utilizations

Techniques for coding and categorizing of primary patterns in the data were adapted from Patton (1990) and Strauss and Corbin (1990). Strauss and Corbin (1990) describe three major types of coding: (1) open coding—a process of breaking down, examining, comparing, conceptualizing, and categorizing data; (2) axial coding—a process of relating subcategories to a category; and (3) selective coding—a process of selecting the core category, systematically relating it to other categories, validating
those relationships, and filling in categories that need further refinement and development.

Open coding was chosen for this study. Coding was done manually in the following way.

I. All health services requests and follow-up utilizations (hereafter referred to as requests and utilizations) were classified with color codes to differentiate those initiated by the inmate versus referrals by various health care personnel or other staff members.

II. Numerical codes (see Coding System II, Appendix B) were assigned to:

A. the response variables, identified as (a) types of requests, i.e., initiated by inmate, staff or correction officer, or other persons and reasons for the request, i.e., medical or mental health complaints; (b) the medical and mental health complaints related to specific body systems or mental health categories; (c) types of utilization, i.e., routine, counseling, medical evaluation, follow-up or referral and their reasons; (d) types of injuries; and

B. the intervening variables, identified as (a) life events, (b) scheduled events, and (c) precarious events.

III. After the initial code assignments, intervening and response variables on each subject were entered chronologically with dates into separate categories.
Service requests and follow-up utilizations were differentiated with "r" and "u" codes respectively. The type of service was noted: (r) sick call, (r) mental health worker, (r) psychiatrist, (r) medical doctor, (u) nurse, (u) psychiatrist, (u) mental health worker, (u) medical doctor, or (u) nurse practitioner (PNP).

Upon completion of this coding phase, the general pattern of health services activities of each subject was analyzed. Clusters of use of and reasons for services were identified by color coding. This facilitated the summarization of individual codes for each subject. Summary scores of all study subjects were entered on a spreadsheet for further clustering and categorization.

Before entering the code scores into the computer for cross tabulations, several categories were further collapsed based on an assessment of summary scores. For instance, in the request categories of 1,097 requests, only 14 were for a psychiatrist and 64 for a medical doctor. Since the reasons for a mental health worker were similar to those for a psychiatrist and those for sick call similar to those for a medical doctor, these requests were collapsed into 'mental health' and 'sick call,' respectively. Most requests were initiated by inmates. Only 14 were initiated by correctional staff and one by the cook. Staff requests were therefore categorized as referrals and included in the category of nursing (RN) utilization.
Categories of utilizations remained more distinct except those provided by a PNP or nurse practitioner. Services provided by the PNP, i.e., medical treatment and prescription of medications, did not differ from those of the medical doctor. Thus, the 'PNP' category was collapsed with the category of the 'medical doctor.' Unlike request categories of mental health, the utilization categories of mental health did show distinct service differentiation and thus were kept as separate categories of 'mental health worker' and 'psychiatrist.'

Because of the numerous reasons for seeking health care services, codes of similar categories were further collapsed to form broader categories of health concerns. Final categories of reasons for services with inclusion of symptom or complaint clusters are included in Coding System II (see Appendix B).

Univariate and Bivariate Analyses

Adapting Rossi and Freeman's (1989) model of "demand assessment" for services as discussed earlier, frequency scores of requests for services by the inmate and follow-up utilization for health services were the dependent variables compared to independent and intervening variables of the inmate's profile. The data analysis process is described as follows.

First, to analyze the sample population and describe the distributions of the variables, univariate summary
statistic analyses were conducted, utilizing the SAS computer program.

Second, variables of health services requests and follow-up utilizations were initially compared to identify any mean differences between them. A t-test was conducted to compare frequencies of services requests and follow-up utilizations and whether any difference existed between the two outcome variables.

Third, to determine significant differences among and between multiple means, an ANOVA (analysis of variance) was conducted. ANOVA focuses on variances within and between sample groups to identify variable relationships. A general linear models procedure of ANOVA was used to determine if two or more means differed but not which ones. To identify which pair or pairs of means differed, a Scheffé test was included. A Scheffé test was appropriate for this analysis because it allows for comparing unequal group sizes. It is a test of statistical significance used for post hoc multiple comparisons after an ANOVA. It is a conservative test that tends to err on the side of underestimating significance and deals well with unequal cell sizes (Walsh, 1990).

To conduct bivariate analyses with compatible group sizes, some demographic variables were combined into categories and assigned values on either a nominal or interval scale as seen in the Variable Categories list (see
Appendix C). This adjustment was necessary because of limitations inherent in the relatively small study population (N=67).

For instance, family size background was determined by the inmates’ number of siblings. Subject sample was split into two groups: group 1 = large family (three or more siblings) and group 2 = small family (less than three siblings, including none). Different categories of marital status were combined and split into two groups, each group representing nearly 50% of the study population: group 1 = those who are or were married; group 2 = never married. The reason for distinguishing between married and never married is that the married group includes categories of common experiences of life stressors observed from the other group, such as marriage, separation, divorce or widowhood.

Categories of the variable "inmates and children" were collapsed into specific groups to identify specific categories: (1) groups of inmates with and without children, (2) groups of inmates who have three and more or less than three children, and (3) groups with children of specific age categories, e.g., 18 years and above or less than 18 years were also identified.

History of abuse was another variable for which categories were collapsed. Physical and sexual abuse were combined to form one group since both involve physical violence. Related variables to history of drug abuse
included various categories of methods of intake which were divided into three groups for comparison statistics: (1) those who mainly used intravenous (IV), (2) those who used inhaled or oral methods and (3) those who did not use any drugs (see Variable Categories, Appendix B).

Summary

This exploratory study aimed at identifying, describing, generating hypotheses and identifying possible associations of select variables relating to health care needs of incarcerated women. A biopsychosocial model was developed as a conceptual framework for the study enquiry. The study sample consisted of 67 imprisoned women who were (1) age 18 and above, (2) convicted of a felony, (3) sentenced to one year or more, and (4) at WCCC in the State of Hawaii at any time during the calendar year 1992.

An instrument was designed to collect data from existing documents of inmate records, medical records and statistical reports on sentenced felons in the State of Hawaii. Data included sociodemographic, biological and psychosocial dimensions related to the inmate profile; stressors or stress events that occurred during the study year; and health services activities, i.e., requests for services and follow-up utilizations, and reported reasons for those services. Data were collected between May and July 1994.
Data analysis involved qualitative and quantitative analyses. Methods included the use of content analysis of inmate and medical records and statistical analysis of quantitative measurements by applying univariate and bivariate analyses.
CHAPTER IV
RESULTS

Results of quantitative measures and findings of qualitative analyses are presented in this chapter to identify a sociodemographic and health service profile of 67 women imprisoned at WCCC during 1992. Univariate analyses of sociodemographic, biologic, and psychosocial variables are described. Numbers and frequencies of health service activities and stress events are related along with some preliminary exploration of relationships between variables. The analyses addressed the following questions:

1. Do demographic variables have any relationship to the number of health service activities?

2. Do significant events experienced during incarceration have an effect on health service activities?

3. What, if any, are important stress factors that motivated the women inmates to request and utilize health services?

Sociodemographic and Health Services

Profile of the Study Group

The study group consisted of 67 women imprisoned for felony crimes at WCCC during the calendar year 1992. The subject length of stay during calendar year 1992 varied from
15 to 365 days. The median and mean length of stay was 219 days. Only 23.9% of the women had spent the entire year (365 days) at WCCC. Most of the inmates were either in transition to or from alternative placements or released from custody.

**Sociodemographic Dimensions**

The sociodemographic variables are presented in categories modeled after a comprehensive nationwide survey summary conducted in 1987 by the American Correctional Association's Task Force on the Female Offender (ACA, 1990). The categories include: Personal History (ethnicity, place of birth, age, marital status, number of children, caregiver for the children); Home Life (background of inmate's parents, siblings, incarceration of family members, history of runaway or suicide); Criminal History (arrests, conviction, juvenile offenses); Education Background; and Employment/Income.

When applicable, data were compared with the 1991 National Survey of Women in Prison in State correctional facilities (U.S. Dept. of Justice Statistics, 1994) and the 1987 ACA report on women offenders (ACA, 1990).

**Personal History.** The personal history of inmates included ethnic background, place of birth, age, marital status, children, and care of children.

Table 1 shows that Hawaiian/Part Hawaiian was the largest ethnic group (55.2%), followed by Caucasian (26.9%).
Other (6.0%), African American (4.5%), Filipino (3.0%), Samoan (3.0%), and Chinese (1.5%) followed.

In comparison with the state’s population, in the study group Hawaiian/Part Hawaiians were overrepresented by a factor of nearly three. In addition, Samoans were overrepresented by a factor of ten and African American by a factor of three. On the other hand, Chinese were underrepresented by a factor of nearly three and Filipinos by a factor of 3.4. Most notably, though, is that while 20.4% of the state’s population is represented by Japanese, there was none in the study group (see Table 1).

Table 1
Comparison of the Study Group and the General Population of Hawaii by Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Study Group (N=67)</th>
<th>Hawaii Pop. 1990 (N=1,089,572)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaiian/Part Hwn</td>
<td>55.2 %</td>
<td>18.8 %</td>
</tr>
<tr>
<td>Caucasian</td>
<td>26.9</td>
<td>24.1</td>
</tr>
<tr>
<td>Filipino</td>
<td>3.0</td>
<td>11.4</td>
</tr>
<tr>
<td>African American</td>
<td>4.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Samoan</td>
<td>3.0</td>
<td>.3</td>
</tr>
<tr>
<td>Chinese</td>
<td>1.5</td>
<td>4.7</td>
</tr>
<tr>
<td>Korean</td>
<td>0.0</td>
<td>1.1</td>
</tr>
<tr>
<td>Puerto Rican</td>
<td>0.0</td>
<td>0.3</td>
</tr>
<tr>
<td>Japanese</td>
<td>0.0</td>
<td>20.4</td>
</tr>
<tr>
<td>Other b</td>
<td>6.0</td>
<td>17.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>


Consists of persons of mixed ancestry, Hispanics, and other Asians and Pacific Islanders.
The majority of the women (64.2%) were born and raised in Hawaii; 35.8% came from the continental United States of whom 13.4% had resided less than ten years in Hawaii.

The age range of the study group was 19 to 55 years, with a mean age of 33, a median age of 33.5 and a mode of 28 years. The largest group (47.8%) fell in the age group of 25 to 34, followed by the 35 to 44 group (37.5%), then the 18 to 24 group (10.5%). The lowest proportion of prison inmates in this study and the national data was in the 45 years and older categories.

Table 2

Comparison of the Study Group and National Data of State Prison Female Inmates by Age Category, 1991*

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Study Group 1992 (N=67)</th>
<th>National Data 1991 (N=13,986)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 24</td>
<td>10.5 %</td>
<td>16.3 %</td>
</tr>
<tr>
<td>25 to 34</td>
<td>47.8</td>
<td>50.4</td>
</tr>
<tr>
<td>35 to 44</td>
<td>37.2</td>
<td>25.5</td>
</tr>
<tr>
<td>45 to 54</td>
<td>3.0</td>
<td>6.1</td>
</tr>
<tr>
<td>55 or older</td>
<td>1.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Median age</td>
<td>33.5</td>
<td>31</td>
</tr>
</tbody>
</table>

Figures for marital status and children are shown in Table 3. Almost one half of the women were never married and nearly one third were either divorced (20.9%) or separated (11.9%).

Almost two thirds (65.7%) of the women had children of whom 33.1% had three or more children. Nearly 80% of the mothers had one to five children whose ages were younger than 18. Compared to the national data, the study sample had a larger proportion of women with no children.

Child care, the whereabouts of the children, or custody of the younger children prior to and during the inmate’s incarceration were not consistently documented. But it is noteworthy that of the 36 documented cases, 44.5% were reported to have had the children placed with the inmate’s mother or grandparent and 11.1% with the child’s father. The remaining 44.5% had placed their children with either another relative or in a foster or adopted home.

Family Background. There was not consistent documentation on family background.

Table 4 presents a general overview of the inmate’s family background. Nearly two thirds of the women came from a home whose parents were either never married (4.5%), separated (7.5%), divorced (28.4%), deceased or had other living arrangements, e.g., with boyfriends, group homes (23.8%).
## Table 3
Marital Status and Number of Children of Study Group and National Data of State Prison Female Inmates, 1991

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>11.9 %</td>
<td>17.3 %</td>
</tr>
<tr>
<td>Never married</td>
<td>49.3</td>
<td>45.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>20.9</td>
<td>19.1</td>
</tr>
<tr>
<td>Separated</td>
<td>11.9</td>
<td>12.5</td>
</tr>
<tr>
<td>Widowed</td>
<td>3.0</td>
<td>5.9</td>
</tr>
<tr>
<td>Not specified</td>
<td>3.0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Have children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>34.3 %</td>
<td>21.9 % *</td>
</tr>
<tr>
<td>yes</td>
<td>65.7</td>
<td>78.1</td>
</tr>
<tr>
<td>under age 18</td>
<td>(52.3)</td>
<td>(66.7)</td>
</tr>
<tr>
<td>18 and over</td>
<td>(13.4)</td>
<td>(11.4)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of children under age 18</th>
<th>Study Group 1992 (n=35)</th>
<th>Nat’l. Data 1991 (n=25,744)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>31.4 %</td>
<td>37.3 %</td>
</tr>
<tr>
<td>2</td>
<td>28.6</td>
<td>29.9</td>
</tr>
<tr>
<td>3</td>
<td>22.8</td>
<td>18.1</td>
</tr>
<tr>
<td>4</td>
<td>8.6</td>
<td>8.5</td>
</tr>
<tr>
<td>5</td>
<td>8.6</td>
<td>6.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0 %</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>


* p< 0.05 (Z-test)
Discounting step-siblings of the subjects documented in the records, most women had several siblings, ranging from 1 to 11; only 11.9% had no sibling. Over 67% had three or more brothers and sisters of whom over half had five and more siblings.

Almost one half of the women (47.8%) had family members who also experienced incarceration. This reflects the 1991 national data in which 46.6% of women had family members who had been incarcerated (U.S. Dept. of Justice Statistics, 1994). Table 4 indicates that 38.8% of the subjects reported one or more family members or a boyfriend, who was the father of the inmate's child, being incarcerated.

Fifty two percent of the women in the study group were runaways one to three times as juveniles. Thirty two percent had a history of attempted suicide. These figures were comparable to the U.S. data set for runaways (46.5%) and attempted suicide (27.9%), respectively (ACA, 1987).
<table>
<thead>
<tr>
<th>Marital Status of Inmates' Parents</th>
<th>Percent (N=67)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never married</td>
<td>4.5 %</td>
</tr>
<tr>
<td>Married</td>
<td>35.8</td>
</tr>
<tr>
<td>Separated</td>
<td>7.5</td>
</tr>
<tr>
<td>Divorced</td>
<td>28.4</td>
</tr>
<tr>
<td>Deceased or multiple changes</td>
<td>23.8</td>
</tr>
<tr>
<td>Total</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most of Childhood Raised by:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Both parents</td>
<td>29.9 %</td>
</tr>
<tr>
<td>Mother</td>
<td>13.4</td>
</tr>
<tr>
<td>Father</td>
<td>1.5</td>
</tr>
<tr>
<td>Parent and stepparent</td>
<td>22.4</td>
</tr>
<tr>
<td>Grandparents</td>
<td>13.4</td>
</tr>
<tr>
<td>Foster Home</td>
<td>4.5</td>
</tr>
<tr>
<td>Aunt and other</td>
<td>1.5</td>
</tr>
<tr>
<td>Multiple changes</td>
<td>13.4</td>
</tr>
<tr>
<td>Total</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Incarceration of any Family Member in 1992</th>
<th>61.2 %</th>
<th>38.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father/stepf.</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Sibling(s)</td>
<td>10.4</td>
<td></td>
</tr>
<tr>
<td>Husband</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Boyfriend</td>
<td>16.4</td>
<td></td>
</tr>
<tr>
<td>Child(ren)</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Any combination</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0 %</td>
<td></td>
</tr>
</tbody>
</table>
Criminal History. Table 5 indicates the original felony charges for which the women were sentenced and incarcerated at WCCC. Violations that occurred after the original felony, i.e., parole violations or offenses while still serving time in prison, are not included.

The majority of the women were serving sentences for nonviolent crimes, either for direct drug offenses (37.3%), property offenses (28.4%), or both (14.9%). Among non-drug offenses, 73.1% were drug- and 28.4% alcohol-related. The percentage of study subjects incarcerated for drug offenses was greater than the proportions in the 1987 ACA survey (20.7%) but comparable to the 1991 national data (32.8%).

The proportion of the study group incarcerated for violent offenses was significantly less than that of in the national data.

Ninety seven percent of the study group had prior incarcerations compared to 71.2% in the 1991 national survey. Arrests began as juveniles in 56.7% of the subjects.
Table 5

Crime History of Study Group and National Data of State Prison Female Inmates, 1991*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Convicted Felonies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violent offenses</td>
<td>19.5 %</td>
<td>32.2 % *</td>
</tr>
<tr>
<td>Assault</td>
<td>9.0</td>
<td>6.2</td>
</tr>
<tr>
<td>Robbery</td>
<td>6.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Murder</td>
<td>4.5</td>
<td>11.7</td>
</tr>
<tr>
<td>Other b</td>
<td>-</td>
<td>6.5</td>
</tr>
<tr>
<td>Property offenses</td>
<td>28.4 %</td>
<td>28.7 %</td>
</tr>
<tr>
<td>Burglary</td>
<td>7.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Theft</td>
<td>11.9</td>
<td>11.1</td>
</tr>
<tr>
<td>Forgery/Fraud</td>
<td>9.0</td>
<td>10.2</td>
</tr>
<tr>
<td>Drug Use/Traffic</td>
<td>37.2 %</td>
<td>32.8 %</td>
</tr>
<tr>
<td>Multiple c</td>
<td>14.9 %</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
<td>100.0 %</td>
</tr>
</tbody>
</table>

Number of Adult Sentences Prior to Last Conviction (N=38,038)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>3.0 %</td>
<td>28.9 % *</td>
</tr>
<tr>
<td>1 to 2</td>
<td>14.9</td>
<td>36.9</td>
</tr>
<tr>
<td>3 and more</td>
<td>82.1</td>
<td>34.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
<td>100.1 %</td>
</tr>
</tbody>
</table>

Criminal History as Juvenile

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrests and Detention</td>
<td>41.8 %</td>
<td></td>
</tr>
<tr>
<td>Arrests only</td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>43.3</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
<td></td>
</tr>
</tbody>
</table>


bIncludes negligent manslaughter, kidnaping, rape, other sexual assault.

cCombination of crimes, usually public-order offenses and drug- and alcohol-involved.

* p< 0.01 (Z-test)
Educational Background. Table 6 shows that 32.8% of the study group were high school graduates. This proportion is higher than the 22.7% reported in the 1991 national survey (U.S. Dept. of Justice Statistics, 1994). Eighteen percent of the study group received a General Equivalency Diploma (GED) at a later time in their life, mostly while incarcerated. Two inmates in the study reported to have some college education prior to incarceration.

Table 6

<table>
<thead>
<tr>
<th>Educational Background of the Study Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent (N=67)</td>
</tr>
<tr>
<td><strong>Completed Education</strong></td>
</tr>
<tr>
<td>grade 9 or less</td>
</tr>
<tr>
<td>grade 10</td>
</tr>
<tr>
<td>grade 11</td>
</tr>
<tr>
<td>grade 12</td>
</tr>
<tr>
<td>grade not specified</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>High School Dropout Reasons</strong> (n=45)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
</tr>
<tr>
<td>Detention</td>
</tr>
<tr>
<td>Run Away</td>
</tr>
<tr>
<td>Illegal activities</td>
</tr>
<tr>
<td>Work</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
**Employment History and Main Income Source.** Table 7 indicates that 83.6% of the study group had no history of regular employment prior to their incarceration compared to 53.3% in the national survey (U.S. Dept. of Justice Statistics, 1994). Over 61% received income from prostitution or other illegal activities.

In contrast, the nationwide 1987 ACA survey showed that 60.1% of women received welfare assistance prior to incarceration. The remaining nearly 40% were reported to have had clerical or service jobs (ACA, 1991). Income from illegal activities was not reported in the ACA survey.

<table>
<thead>
<tr>
<th>Employment</th>
<th>Percent (N=67)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>83.6 %</td>
</tr>
<tr>
<td>One year or more</td>
<td>13.4</td>
</tr>
<tr>
<td>Not documented</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income Source Prior to Incarceration</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welfare</td>
<td>19.4 %</td>
</tr>
<tr>
<td>Employment</td>
<td>10.4</td>
</tr>
<tr>
<td>Illegal activities</td>
<td>34.3</td>
</tr>
<tr>
<td>Prostitution/Escort</td>
<td>26.9</td>
</tr>
<tr>
<td>Other (Worker's Comp.)</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>
Biologic Dimensions

Two major variables were examined: (a) Health Risk Factors and Behaviors (history of physical and sexual abuse, emotional neglect, substance abuse, smoking, and prostitution); and (b) Health Treatment.

Health Risk Factors and Behaviors. Almost one-half of the women (46.3%) were reported to have experienced physical abuse either as a child or adult or both. Most of the abusers were family members: parent (14.9%), stepparent (9.0%) or multiple family members (10.4%). Eighteen women (26.8%) reported sexual abuse; 88.9% of these cases occurred during childhood. Over one-half of the study group (53.7%) experienced emotional neglect during childhood (e.g., frequent abandonment, alcoholic parents, a feeling of "no one cared" or constant verbal put downs or punishments).

Table 8 shows that 74.6% of the subjects had a history of alcohol, 67.2% cigarette, and 83.6% other drug abuse. In all cases, some type of substance abuse began during their teen years. Prior to incarceration, 50.7% of the women were using alcohol and 76.1% were using other substances.

Prostitution as another health risk behavior was reported among 37.3% of the women with prior arrests and/or convictions.
### Table 8
Alcohol, Tobacco and Other Drug Use and Abuse

<table>
<thead>
<tr>
<th></th>
<th>Percent (N=67)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alcohol Abuse</strong></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>74.6 %</td>
</tr>
<tr>
<td>no</td>
<td>25.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
</tr>
<tr>
<td><strong>Smoking</strong></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>67.2 %</td>
</tr>
<tr>
<td>no</td>
<td>32.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
</tr>
<tr>
<td><strong>Drug Abuse</strong></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>83.6 %</td>
</tr>
<tr>
<td>no</td>
<td>16.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
</tr>
<tr>
<td><strong>Type of Drugs Used</strong></td>
<td></td>
</tr>
<tr>
<td>Marijuana</td>
<td>10.4 %</td>
</tr>
<tr>
<td>Cocaine</td>
<td>40.3</td>
</tr>
<tr>
<td>Heroin</td>
<td>7.5</td>
</tr>
<tr>
<td>Poly Drugs</td>
<td>19.4</td>
</tr>
<tr>
<td>Crystal Meth.</td>
<td>6.0</td>
</tr>
<tr>
<td>None</td>
<td>16.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
</tr>
<tr>
<td><strong>Method of Drug Intake</strong></td>
<td></td>
</tr>
<tr>
<td>Inhaler/oral</td>
<td>40.3 %</td>
</tr>
<tr>
<td>IV plus other</td>
<td>43.2</td>
</tr>
<tr>
<td>None</td>
<td>16.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0 %</td>
</tr>
</tbody>
</table>
**Health Treatment.** Over one-half of the women in this study (53.4%) participated in alcohol and drug treatment programs one or more times prior to incarceration. This compares with 63.6% of women in prison reported in the 1991 national survey who had been on drugs prior to their arrest and had participated in a drug treatment program (U.S. Dept. of Justice Statistics, 1994).

Over one-third (34.3%) of the study group received mental health treatment at some time before their last imprisonment. Comparable national data were not available.

**Psychosocial Dimensions**

Psychosocial variables include those involving interpersonal relations, e.g., conflicts, losses, separations that occurred before the last incarceration. The only variables that could be identified among the study population were related to pregnancy and childbirth. One inmate had given birth three weeks prior to her last arrest. There was no further record of the whereabouts or care arrangements for the baby. In six cases, subjects entered prison while pregnant. Of these, one inmate delivered the baby during the study year and two were released on furlough prior to delivery.

**Stress Events Occurring During 1992**

Table 9 summarizes significant stress events from the inmate records including (1) life events (significant news the subjects received from outside of the prison either by
telephone, letter or visitation), (2) scheduled events (transfers to other correctional facilities, court hearings, program determinations, hearings on misconducts), and (3) precarious events (injuries).

Table 9
Stress Events Experienced During 1992

<table>
<thead>
<tr>
<th>Stress Events</th>
<th>Percent (N=67)</th>
<th>Range per Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfers</td>
<td>40.3 %</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Court Dates</td>
<td>47.8</td>
<td>1 - 4</td>
</tr>
<tr>
<td>Outside News</td>
<td>19.4</td>
<td>1 - 6</td>
</tr>
<tr>
<td>Program Denial</td>
<td>16.4</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Misconducts</td>
<td>47.8</td>
<td>1 - 7</td>
</tr>
<tr>
<td>Injuries</td>
<td>53.7</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

Life Events

Life events were significant news in which stress to the inmate was documented (e.g., a letter from a spouse proposing divorce or threatening breakup, death or illness in the family, crisis with the inmates' children. Thirteen cases received significant messages between one and six times while at WCCC during 1992.

Scheduled Events

During the study year, at least one court hearing for adjudication and at least one hearing on in-house misconduct
was recorded for nearly one-half of the study group members, more than all other types of events listed in Table 9. Subjects who had misconduct hearings, had between one and seven hearings during the study year.

Program denials reflect determinations made on program requests initiated by the inmate (e.g., to work in the garden or to get out of required kitchen duty). Eleven women had between one and five program requests denied (e.g., library or education assistant, garden work) during the study year.

Precarious Events

Sixty-four injuries among 53.7% of the subjects were recorded during the study year. They experienced between one and five injuries each. The largest category of injuries were muscular skeletal related (22.4%) due to falls, sprains, strains, and tripping. Some injuries happened during kitchen work, e.g., cuts (16.4%) and burns (11.9%). In 15% of the cases, injuries occurred as a result of striking others or being struck (7.5%), or punching walls out of anger or frustration (7.5%).

Profile of Health Services Activities During 1992

Health services activities were divided into two groups: (1) health services requests that the inmate initiated and (2) follow-up utilization services that were referrals.
Health Services Requests and their Reasons

Table 10 summarizes the number and frequency of service requests and the types of services. Sixty seven subjects requested a total of 1,131 services during 1992, ranging between 0 and 50 with a mean of 16.9 requests per inmate and a standard deviation of 11.9.

Table 10
Types of Health Service Requests in 1992
(N=67)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>All requests</td>
<td>1,131</td>
<td>16.9</td>
<td>11.9</td>
<td>0 - 50</td>
</tr>
<tr>
<td>sick call</td>
<td>941</td>
<td>14.0</td>
<td>10.3</td>
<td>0 - 45</td>
</tr>
<tr>
<td>mental health</td>
<td>133</td>
<td>2.0</td>
<td>3.5</td>
<td>0 - 23</td>
</tr>
<tr>
<td>medical care</td>
<td>57</td>
<td>0.8</td>
<td>1.6</td>
<td>0 - 10</td>
</tr>
</tbody>
</table>

Table 11 specifies the different reasons for the service requests. When multiple reasons or health concerns per service request were recorded, only the documented primary concern was counted.

Reasons for Sick Call Requests. The most frequent reasons for sick call requests were upper respiratory infections (URI) (79%) and muscular skeletal problems (70%), ranging between one and 18 and one and 15 requests per inmate respectively. It is to note that Ob/Gyn related complaints were less frequently recorded reasons.
Reasons for Mental Health Requests. Stress and anger was a concern of 42% of the women requesting mental health services, with a range of one to nine requests per inmate. Examples were outbursts of anger and frustration against others, program decisions, or general institutional rules. Among the five mental health reason categories, 'stress and anger' and 'conflict with family or staff' have the broadest frequency range of requests per inmate.

Reasons for Medical Services. Eleven categories of reasons for 64 medical services requests were identified. The two most stated reasons were URI and muscular skeletal of 16% and 12% subjects, respectively, as they were for sick call requests. It is not surprising that only few women requested medical services for these same reasons because sick call is the immediate access to health services. The other nine categories of reasons (e.g., gastro/intestinal, skin problems, urinary tract infection (UTI), gynecological, cardiovascular, job clearance, nightmares, stress/agitation, seizure) were sporadically distributed among the subjects in very small numbers.
Table 11
Reasons for Health Services Requests

<table>
<thead>
<tr>
<th>Reasons for Requests</th>
<th>Percent (N=67)</th>
<th>Range per Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sick Call</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper respiratory infections (URI)</td>
<td>79 %</td>
<td>1-18</td>
</tr>
<tr>
<td>Muscular skeletal</td>
<td>70</td>
<td>1-15</td>
</tr>
<tr>
<td>Skin</td>
<td>70</td>
<td>1-9</td>
</tr>
<tr>
<td>Gastro intestinal (GI)</td>
<td>40</td>
<td>1-7</td>
</tr>
<tr>
<td>Ob/Gyn</td>
<td>40</td>
<td>1-6</td>
</tr>
<tr>
<td>Urinary tract infection (UTI)</td>
<td>31</td>
<td>1-5</td>
</tr>
<tr>
<td>Drug withdrawal</td>
<td>27</td>
<td>1-8</td>
</tr>
<tr>
<td>Medications</td>
<td>22</td>
<td>1-5</td>
</tr>
<tr>
<td>Cardiovascular related</td>
<td>19</td>
<td>1-5</td>
</tr>
<tr>
<td>Vision problems</td>
<td>18</td>
<td>1-2</td>
</tr>
<tr>
<td>Other (seizure, diabetes, job clearance)</td>
<td>23</td>
<td>1-5</td>
</tr>
<tr>
<td><strong>Mental Health</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress and anger</td>
<td>42 %</td>
<td>1-9</td>
</tr>
<tr>
<td>Relationship with other inmates</td>
<td>20</td>
<td>1-6</td>
</tr>
<tr>
<td>Fear and grief</td>
<td>16</td>
<td>1-1</td>
</tr>
<tr>
<td>Conflicts with family and staff</td>
<td>13</td>
<td>1-8</td>
</tr>
<tr>
<td>Other (seizure, medication, depression)</td>
<td>21</td>
<td>1-4</td>
</tr>
<tr>
<td><strong>Medical Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper respiratory infections (URI)</td>
<td>16 %</td>
<td>1-10</td>
</tr>
<tr>
<td>Muscular skeletal</td>
<td>12</td>
<td>1-5</td>
</tr>
<tr>
<td>Other (e.g., skin, gastro/intestinal)</td>
<td>8</td>
<td>1-2</td>
</tr>
</tbody>
</table>
Follow-up Health Service Utilization and Reasons

Table 12 summarizes the types of follow-up health services rendered to the 67 subjects during the study year. They are referrals from health care personnel or correctional staff. A total of 1,468 follow-up health services were rendered. Individual services ranged between 0 and 92 per inmate, with a mean of 22.4 and standard deviation of 22.4. Of all follow-up services rendered, the most intensive was mental health social work rendered to 43.7% of the study group with a mean of 9.6 and frequency range of 0 to 72 visits per inmate. Mental health services combined—psychiatry and mental health social work—reflect almost twice the number of medical visits (919 mental health versus 451 medical) as well as a higher range of follow-up visits per inmate.

Table 12

Types of Health Services Follow-up Utilization
(N=67)

<table>
<thead>
<tr>
<th>Health Care Utilization</th>
<th>Total</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,468</td>
<td>22.4</td>
<td>22.4</td>
<td>0 - 92</td>
</tr>
<tr>
<td>Nursing</td>
<td>98</td>
<td>1.5</td>
<td>1.9</td>
<td>0 - 11</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>278</td>
<td>4.1</td>
<td>6.5</td>
<td>0 - 36</td>
</tr>
<tr>
<td>Mental health</td>
<td>641</td>
<td>9.6</td>
<td>14.2</td>
<td>0 - 72</td>
</tr>
<tr>
<td>Medical service</td>
<td>451</td>
<td>6.7</td>
<td>5.9</td>
<td>0 - 23</td>
</tr>
</tbody>
</table>
Table 13 presents the types of follow-up services with specific categories of health concerns or reasons for which treatment was provided. When multiple reasons or health problems were recorded, only the primary problem was considered.

**Reasons for Psychiatry Follow-up.** Among the six categories of reasons for psychiatric follow-up services, medication management (39%) and stress and agitation (37%) were the most stated reasons among the largest groups of subjects. Stress or agitation also had higher frequencies of services per inmate, ranging between one and 19.

**Reasons for Mental Health Follow-up.** Among the seven categories of reasons for follow-up services by a mental health social worker, monitoring mental health conditions of inmates who had previously shown acute distress were the largest group (63%). They included women who were placed in a lockdown unit (e.g., isolation unit for disciplinary purposes or for a temporary severely emotional disturbed inmate). The next largest groups receiving services were for stress and anxiety (50%) and conflict issues (49%) which also had a broader frequency range of visits per inmate.

**Reasons for Medical Services Follow-up.** In most cases, the medical follow-up services were rendered following a sick call and referral. Among ten categories of reasons for medical services follow-up, muscular/skeletal (60%), ob/gyn
problems (42%) and "feeling sick" (42%) were the most common among subject groups.

Table 13

Reasons for Health Services Follow-up Utilization

<table>
<thead>
<tr>
<th>Reasons for Follow-up</th>
<th>Percent (N=67)</th>
<th>Range per Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychiatry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication check</td>
<td>39 %</td>
<td>1 - 8</td>
</tr>
<tr>
<td>Stress &amp; agitation</td>
<td>37</td>
<td>1 - 19</td>
</tr>
<tr>
<td>Monitoring</td>
<td>22</td>
<td>1 - 9</td>
</tr>
<tr>
<td>Depression</td>
<td>22</td>
<td>1 - 10</td>
</tr>
<tr>
<td>Personality disorders</td>
<td>22</td>
<td>1 - 2</td>
</tr>
<tr>
<td>Relationship problems</td>
<td>16</td>
<td>1 - 8</td>
</tr>
<tr>
<td><strong>Mental Health</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring mental health status</td>
<td>63 %</td>
<td>1 - 69</td>
</tr>
<tr>
<td>Stress and anxiety</td>
<td>50</td>
<td>1 - 17</td>
</tr>
<tr>
<td>Conflict issues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(inmates, staff)</td>
<td>49</td>
<td>1 - 13</td>
</tr>
<tr>
<td>Loss and grief</td>
<td>31</td>
<td>1 - 9</td>
</tr>
<tr>
<td>Depression</td>
<td>15</td>
<td>1 - 6</td>
</tr>
<tr>
<td>Concerns over children</td>
<td>15</td>
<td>1 - 6</td>
</tr>
<tr>
<td>Other (questions, medications)</td>
<td>13</td>
<td>1 - 2</td>
</tr>
<tr>
<td><strong>Medical Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscular/skeletal</td>
<td>60 %</td>
<td>1 - 13</td>
</tr>
<tr>
<td>Ob/Gyn</td>
<td>42</td>
<td>1 - 13</td>
</tr>
<tr>
<td>&quot;Feeling sick&quot;</td>
<td>42</td>
<td>1 - 7</td>
</tr>
<tr>
<td>Skin</td>
<td>31</td>
<td>1 - 14</td>
</tr>
<tr>
<td>Gastro/intestinal</td>
<td>24</td>
<td>1 - 6</td>
</tr>
<tr>
<td>Urinary tract infection (UTI)</td>
<td>13</td>
<td>1 - 3</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>12</td>
<td>1 - 4</td>
</tr>
<tr>
<td>Eye problems</td>
<td>12</td>
<td>1 - 2</td>
</tr>
<tr>
<td>Stress and agitation</td>
<td>10</td>
<td>1 - 7</td>
</tr>
<tr>
<td>Other (medication, job clearance)</td>
<td>12</td>
<td>1 - 2</td>
</tr>
</tbody>
</table>
Exploration of Relationships Between Sociodemographic Characteristics and Stress Events and Health Services Activities

The total frequencies of the two outcome variables of health services activities—requests and follow-up utilizations—were examined to determine whether they differed significantly. The total number of health care services requests (1,131) and the total number of services follow-up utilization (1,468) differed by 337 service visits among the 67 subjects with a mean difference of 5.5 per inmate. A t-test between the total number of requested services and the total number of follow-up utilization per inmate was conducted. Results indicated that there was no significant mean difference between the two groups.

As request for health services is initiated by the inmate, it may be considered a stronger stress indicator than the follow-up utilization services. Therefore, the variable health services request, as opposed to the follow-up utilization, was selected as the outcome variable for bivariate analysis to answer the first question: Do sociodemographic variables have any relationship to the number of health services activities?

The total number of health services request categories were combined into four interval groups based on their frequency range between 0 to 50 requests per inmate. The group included subjects who requested: (1) 1 to 10 requests;
(2) 11 to 20 requests; (3) 21 to 30 requests; and (4) 31 to 50 requests (see Variable Categories, Appendix C).

Question #1: Do Sociodemographic Variables have any Relationship to the Number of Health Services Activities?

To identify differences of multiple means among and between groups of independent variables related to the subjects' demographic characteristics and the health services requests, one-way ANOVA (Analysis of Variance) tests were conducted. To further clarify which specific group pairs showed a difference, each ANOVA test was followed by the Scheffe test.

Independent variables selected for this ANOVA series included: ethnicity, age, education, type of income, family size, marital status, number of children; history of high school drop out, juvenile runaway, method of drug intake, sexual/physical abuse, alcohol abuse, attempted suicide, prostitution, crime history, juvenile arrests and detention (see Variable Categories, Appendix C).

Significant results in Table 14 indicate that the method of drug intake and history of attempted suicide were the only variables showing significant mean differences within and between groups of health care requests at the p < 0.05 level. Results of the Scheffé tests further indicated that the comparison of the method of drug intake (IV, inhaler/oral, or no drugs) between Group 3 (21-30 requests) and Group 1 (1-10 requests) showed a significant
mean difference at the p< 0.05 level. As to the variable "history of attempted suicide," the Scheffé test did not reveal which pairs of service request groups accounted for the significant difference.

Table 14
Analysis of Variance for Sociodemographic Variables on Groups of Health Care Services Requests

<table>
<thead>
<tr>
<th>Group</th>
<th>1 - 1 to 10 requests/inmate</th>
<th>2 - 11 to 20 requests/inmate</th>
<th>3 - 21 to 30 requests/inmate</th>
<th>4 - 31 to 50 requests/inmate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>SS</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>PR &gt;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hx. of Attempted Suicide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>between groups</td>
<td>1.87</td>
<td>3</td>
<td>0.63</td>
<td>3.05</td>
<td>0.0349 *</td>
</tr>
<tr>
<td>within groups</td>
<td>12.90</td>
<td>63</td>
<td>0.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>14.77</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparison of Means - Scheffé
no significance between specific groups

<table>
<thead>
<tr>
<th>Method of Drug Intake</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>between groups</td>
<td>42.47</td>
<td>3</td>
<td>14.16</td>
<td>3.64</td>
<td>0.0174 *</td>
</tr>
<tr>
<td>within groups</td>
<td>245.14</td>
<td>63</td>
<td>3.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>287.61</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparison of Means - Scheffé
Group 3 compared to Group 1 *

* p< 0.05
Though the findings in Table 14 show that the method of drug intake may make a difference in the higher or lower frequencies of requested health services, they do not show, however, which method of drug intake (IV, inhaler/oral, or no drugs) accounted for the differences. Because over 83% of the study population had reported drug involvement (see Table 8) and over 53% of the women were reported to have been involved in at least one or more alcohol and drug treatment programs prior to the last incarceration, factors relating to drugs and their impact on health services were examined further. Another series of ANOVA and Scheffé tests were conducted to identify any specific category of methods of drug intake that had influence on specific health requests. In this series, the three groups of the methods of drug intake (IV, inhaler/oral, and no drugs) were analyzed with variables on all health services requests and their different categories (see Variable Categories, Appendix C).

Results of the ANOVA tests in Table 15 show significant mean differences between and within groups of methods of drug intake and the frequency of requests for mental health services at the p< 0.05 level. Scheffé tests indicate that both groups, Group 1 (IV) and Group 2 (inhaler/oral), accounted for the differences in frequency of requests for mental health services at the p< 0.05 level while Group 3 (no drugs) revealed no difference.
Table 15

Analysis of Variance for
Health Care Services Requests and Methods of Drug Intake

<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>SS</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>PR &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requests for Mental Health Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>between groups</td>
<td>98.96</td>
<td>2</td>
<td>49.48</td>
<td>4.58</td>
<td>0.0139  *</td>
</tr>
<tr>
<td>within groups</td>
<td>692.02</td>
<td>64</td>
<td>10.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>790.98</td>
<td>66</td>
<td></td>
<td>4.58</td>
<td>0.0139  *</td>
</tr>
</tbody>
</table>

Multiple Comparison of Means - Scheffe

- Group 3 compared to Group 1  *
- Group 3 compared to Group 2  *

* p< 0.05

The significant variables, histories of attempted suicide and drug abuse (Tables 14 and 15), were further examined to identify any prevalent sociodemographic characteristics linked to these variables. Groups of (a) history of attempted suicide versus no suicide attempt (HAS vs. non-HAS hereafter) and (b) history of drug abuse versus non-abuser (HDA vs. non-HDA hereafter) were compared with sociodemographic variables, health services requests and follow-up utilizations, and stress events of misconduct hearings and injuries that occurred during incarceration. Notable differences between the groups were summarized in
Tables 16 and 17. Findings and biographical narratives related to the presumed stress factors were further explored to elaborate on the descriptive statistics.

**History of Attempted Suicide (HAS)**

Thirty-two percent (21/67) of subjects in this study had HAS. This is comparable to findings of a national sample (ACA, 1991) and a study by Daly (1994). In other studies of women inmates, Gilfus (1992) reported HAS in 50% (10/20) of subjects while Chesney-Lind and Rodriguez (1983) reported HAS in 63% (10/16) of study subjects. However, the numerical findings alone may be misleading. The term 'attempting suicide' is both vague and ill defined. The accuracy of the definition depends on the perception and understanding of the inmate, her willingness to self-disclose during an interview or, as in this WCCC study, the interpretation of those who made the documentation in the inmate files. However, within the context of a biographical profile of special groups, i.e., incarcerated women and their life history, the factor HAS becomes more significant, as demonstrated in the qualitative studies by Chesney-Lind and Rodriguez (1983), Daly (1994), and Gilfus (1992).

The women in the HAS group of this WCCC study share a common event in their life: attempted suicide. It is one of several coping strategies while living in an abusive environment (Gilfus, 1992; Miller, 1986). Fourteen of the 21 women (66.7%) in the HAS group compared to 17 of the 46
women (37%) in the non-HAS group were either sexually or physically abused or both (see Table 16).

Table 16
Comparison of Sociodemographic Characteristics, Health Services and Stress Events by History of Attempted Suicide (HAS) and Non-HAS

<table>
<thead>
<tr>
<th></th>
<th>HAS Percent (n=21)</th>
<th>Non-HAS Percent (n=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sociodemographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Runaway as teenager</td>
<td>76.2 %</td>
<td>41.3 % **</td>
</tr>
<tr>
<td>Physical/sexual abuse</td>
<td>66.7</td>
<td>37.0 *</td>
</tr>
<tr>
<td>Prostitution history</td>
<td>47.6</td>
<td>32.6</td>
</tr>
<tr>
<td><strong>Health services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requests</td>
<td>19/inmate</td>
<td>16/inmate ***</td>
</tr>
<tr>
<td>sick call</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilization</td>
<td>20/inmate</td>
<td>6/inmate ***</td>
</tr>
<tr>
<td>mental health</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stress events</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misconduct hearings</td>
<td>2/inmate</td>
<td>1/inmate</td>
</tr>
</tbody>
</table>

* p< 0.05 (chi-square)
** p< 0.01 (chi-square)
*** p< 0.05 (numbers rounded to the nearest tenth)

Running away from home is another survival strategy and also the beginning path of illegal activities (Gilfus, 1992; Miller, 1986). As seen in Table 16, histories of childhood abuse and teenage runaway were significantly more prevalent among the HAS group members. These strategies reflect the path of "street women" as described by Daly (1994) and Miller (1986). "Street women" have a history of having run
away from abuse and violence at home. They support themselves and in most cases their drug addiction through prostitution and illegal activities such as stealing or truancy.

Mary (not real name), case 49 in the WCCC study, illustrates the profile of "street women" and the profile of the majority of the HAS subjects. Her record entry reads: "She attempted suicide twice," without further information surrounding the events. In most cases, there was a similar lack of documentation on HAS. However, with chronological ordering of biographical data in both, the inmate record and the health record, a profile emerged representing characteristics of most of the women in the total study group, i.e., traumatic childhood, alcohol, drug abuse, marginal education and economic deprivation. What differentiates Mary and other HAS inmates from the total study population are the coping and survival strategies. Part of her biography illustrates the path of a "street woman" to felony (Daly, 1994). She was convicted and sentenced to prison for promotion of drugs and burglary.

Her case history as follows provides a vivid account of her pain:

Mary is 24 years old, a single part Hawaiian mother of a nine year old boy. She was born in Hawaii and raised by her mother and stepfather. She never met her biological father. She has six half-sisters between the ages of seven and 22. "She was the only one in the family who was physically abused by her stepfather," as stated in the record. At the age of 10, a severe learning disability related to auditory
processing was identified. She had anger outbursts, acted out feelings, showed masochistic tendencies and enjoyed punishments. She ran away from home numerous times since she was nine years old.

She became pregnant at age 14 and left school after the ninth grade.

Since Mary was eight years old, she increasingly consumed alcohol, smoked cigarettes and marijuana and later developed a serious drug dependency on codeine and IV (intravenous) heroin between the age of 17 and 20 during which time she was employed at a nightclub as a hostess and dancer and also prostituted.

Her crime history began at age 13. She was in juvenile court numerous times for defiance toward school authority, truancy, robbery, assault, and harassment and was sent to a residential treatment facility. As an adult, her crimes escalated to robbery, theft, burglary, prostitution, and promotion of drugs for which she became a sentenced felon and was imprisoned. When placed in a halfway house, she escaped and was returned to prison.

Attempting suicide is an act of deliberate self-harm, an indicator of high distress and a social determinant that stands out as a marked relative risk associated with stressful life events (Haefner & Welz, 1989; Hurley & Dunne, 1991). A higher concentration of stressful life events, particularly of events involving personal relationships and changes in economic status, occupation, and place of work, as reported by Haefner & Welz (1989), was found to be the phenomenon in this study and illustrated in Mary's biography.

Expressions of distress such as feelings of anxiety, insomnia, demoralization, depression, coping problems, and difficulty getting along with others, as reported in other studies (Haefner & Welz, 1989; Hurley & Dunne, 1991), also appeared to be more intensified among the HAS group members
than the non-HAS group members. The HAS group requested 19 health services per inmate compared to the non-HAS group’s 16 per inmate and had an average of 17 mental health follow-up services per inmate compared to 6 per inmate of the non-HAS group from a mental health social worker (see Table 16).

More revealing are the reasons for the mental health services. Aside from monitoring emotional state, stress and anxiety, and conflict issues as seen in Table 13 were the most prevailing reasons. Specifically, conflicts involving relationship issues between girlfriends caused many angry outbursts and fights, described as "inside stressors" (Hurley & Dunne, 1991). These are reflected in Mary’s record entries:

- Relationship difficulty; inmate wishes to terminate with inmate girlfriend but girlfriend doesn’t want to give up.
- Was accused of sexual assault by other inmate but feels other inmate caused the problem.
- Is frustrated and punched wall because other inmate is leaving; feels [she] is getting hurt.
- Difficulty sleeping, nightmares; fears men will attack because other inmate set her up.

These expressions of reasons for mental health services are not unique to the HAS group members. But when appreciated within the context of the related higher frequency utilization of mental health services, they could be suspect of behavior indicators of intensified distress levels.
Of the stress events during incarceration, anticipated misconduct hearings for rule breaking revealed a difference between the groups. Though twice as many misconduct hearings per inmate were recorded from the HAS group members than the non-HAS (2 HAS vs. 1 non-HAS per inmate), the findings again should be seen as interrelated factors of other behavioral indicators and appreciated as exploratory findings. The numbers are too small to draw any inferences.

**History of Drug Abuse (HDA)**

History of drug abuse was the background of the majority (83.6%) of the women in the study population. Crack Cocaine was the preferred drug and IV (intravenous) the intake method of 51.8% of the women while the others inhaled or took drugs orally.

A characteristic substance abuse profile was detected among most women with HDA, as illustrated in Mary’s biographical sketch. It begins with smoking cigarettes at the age of 11 to 12, sniffing glue or paint in many cases, and is soon followed by drinking beer. At the age of 14 to 15, smoking marijuana begins, and soon is replaced by crack cocaine or heroin. Between the ages of 18 to 20, the methods of intake often change from oral or inhaling to intravenous. Some of the women then become polydrug users. This drug profile among incarcerated women has been consistently reported during the past decade (ACA, 1991;
Increasing substance abuse is usually associated with an increase in street crimes (prostitution, shoplifting, theft, fraud) to support the habit (Daly, 1994; Gilfus, 1992; Miller, 1986). Of the 67 women subjects in this study, 25 (37.3%) had a recorded history of prostitution for which they were arrested at some time. The actual number may be much higher as some women may choose to not disclose the information. It is not surprising that 24 of the 25 women with a history of prostitution were in HDA group (see Table 17).

Some notable differences in sociodemographic characteristics between the two groups, HDA and non-HDA, were seen. A greater number of women in the HDA group did not complete high school and had run away from home as teenagers, but fewer were either physically or sexually abused and significantly less women had children. This fits the profile of the the "street women," "drug-connected women," and possibly "harmed and harming women" (Daly, 1994).
Table 17

Comparison of Sociodemographic Characteristics, Health Services and Stress Events by History of Drug Abuse (HDA) and Non-HDA

<table>
<thead>
<tr>
<th></th>
<th>HDA Percent (n=56)</th>
<th>Non-HDA Percent (n=11)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sociodemographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school dropout</td>
<td>67.9 %</td>
<td>54.9 %</td>
</tr>
<tr>
<td>Runaway as teenager</td>
<td>53.3</td>
<td>36.4</td>
</tr>
<tr>
<td>Prostitution history</td>
<td>44.9 %</td>
<td>9.1 % *</td>
</tr>
<tr>
<td>Children (yes)</td>
<td>60.7</td>
<td>90.9 % *</td>
</tr>
<tr>
<td>Physical/sexual abuse</td>
<td>48.2</td>
<td>63.6</td>
</tr>
<tr>
<td><strong>Health services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sick call</td>
<td>13/inmate</td>
<td>20/inmate **</td>
</tr>
<tr>
<td>mental health</td>
<td>2/inmate</td>
<td>5/inmate **</td>
</tr>
<tr>
<td>Utilization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mental health</td>
<td>12/inmate</td>
<td>25/inmate **</td>
</tr>
<tr>
<td><strong>Stress events</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misconduct hearing</td>
<td>45%</td>
<td>65% *</td>
</tr>
</tbody>
</table>

* p< 0.01 (chi-square)  
** p< 0.05 (numbers rounded to the nearest tenth)

With the exception of prostitution and children, profile characteristics of the respective groups only vary in degrees but the behavior indicators during incarceration appear to differ more significantly. The HDA group had requested and utilized significantly less health services, particularly mental health. A significantly lower percentage of women in the HDA group faced misconduct hearings (Table 17).
Due to considerable size differences of the groups and the overwhelming drug abuse factor among the study population, these findings may represent a chance association. But the non-HDA group members could be identified as a minority group. They represent less than 20% of the inmates in this study and of incarcerated women in general (ACA, 1991). These women may not be viewed as a population with special needs, nor have they been identified in the published literature. As a group, they do not fit into any specific typology described by Daly (1994).

Individual case reviews of the 11 non-HDA subjects revealed some clues that may warrant further investigation. Three background characteristics emerged as being somewhat more pronounced in this group than among all other groups: (1) the three subjects in the study who had a murder conviction were in this non-HDA group. Of those, two women had been convicted each of murdering their own child and one of murdering her boyfriend; (2) eight of the 11 non-HDA group members seemed to have had (as described in the record) a more extreme abusive childhood and adult life compared to others in the study group; and (3) six women were supporting other family members through drug promotion.

The two women convicted for murdering their child faced additional serious stress from their fellow prisoners. They were repeatedly harassed and shunned by other inmates because of the perceived heinousness of the crime. Several
times they requested to be placed in isolation in order to be separated from the other inmates. On the other hand, the woman who had stabbed her boyfriend was fully accepted by the other inmates.

The following case summary excerpt of Joan's biographical data (not real name, case 67) illustrates a trauma background and isolation from the other inmates due to the child murder:

Joan, age 35, was beaten, molested, sexually abused by stepfather and stepbrother; mother unwilling to listen about abuse; abusive relationship with former spouse; 2nd husband molested their 8 year old child and beat inmate while pregnant, left family locked up during the day with minimum food and no money and threatened to kill all. Other inmates always comment on her crime and accuse her of insulting staff and other inmates.

Joan matches the profile of "women who kill" (Johann & Osanka, 1989; Jones, 1980; Miller, 1986). They are the women who, aside from being battered so severely, are often older, less well educated and socially more isolated. They suffer the Battered Woman Syndrome (BWS) with severe psychological and physical illness dimensions, expressed in "inferential symptomology" (Eisenberg & Dillon, 1989).

The notion that women's motivation to engage in crime, as described by Daly (1989), are strongly influenced by pressures of family for support or by following orders or doing favors for other men, was found to be particularly true among the non-HDA women. As indicated, six women in this group were strongly motivated by family forces or by
pressures from other men within or outside the family to promote drugs and/or engage in prostitution for financial support, and by following orders or doing favors. That such co-dependency circumstances could have intense stress responses of psychophysiological complaints during incarceration is demonstrated in the biographical sketch of Lisa (not real name, case 1):

Lisa is a 28 year old mother of three, ages 10, 8, 6, has a record of drug promotion, theft, burglary, forgery, assault to "support my family and raise my kids." She has no history of drug or alcohol abuse herself. Her husband, the father of the children, and her brother are also incarcerated for drug promotion. Drug promotion has been a family business. She comes from an alcoholic home, had a physically abusive background and was raised in an environment where the means of income were through crime. Inmate's history of property crimes also began as a juvenile. She ran away from home, spent time in foster homes, youth shelters and detention homes.

"Inmate considered not persistent offender, not professional criminal, not dangerous person, not multiple offender" [record entry by parole officer].

Lisa's profile and behavior during incarceration are also characteristic of BWS (Johann & Osanka, 1989). During the study year, she was seen by a health care professional, on the average, nearly every fifth day, mostly by mental health staff. She also had seven hearings for multiple misconducts: lying and harassing staff, sexually assaulting other inmate, and refusing to obey.

The profiles of the women in the non-HDA group together represent intensified profiles of "harmed and harming women" and "battered women" without the drug connection (Daly, 1994). This non-HDA group also includes the "women who
kill" who display all characteristics and behaviors of BWS (Johann & Osanka, 1989; Jones, 1980). Non-HDA indeed may be a direct or indirect stress predictor of health status during incarceration and a behavioral indicator for intensified health services utilization.

In summary, the statistical analyses and further exploration of interrelated sociodemographic characteristics revealed that presumed stress factors as behavioral predictors of response effects may exist among the inmate population, but not in isolation. Histories of attempted suicide and drug abuse or non-abuse and the associated effects of intensified health services requests and follow-up utilizations may have been statistically significant only because of the interrelated factors of sociodemographic background characteristics and intervening variables of stress events during incarceration.

**Question #2: Do Significant Events Experienced During Incarceration Have an Effect on Health Service Activities?**

The intervening variables that include anticipated or significant events experienced by the subjects during the study year, i.e., misconduct hearing date, court hearing date, program determinations and/or significant news, are variables of greater interest in this study because of their anticipatory nature and impact.
Table 18
Analysis of Variance of Significant Events and Groups of Health Care Services Requests

<table>
<thead>
<tr>
<th>Group</th>
<th>1 to 10 requests/inmate</th>
<th>11 to 20 requests/inmate</th>
<th>21 to 30 requests/inmate</th>
<th>31 to 50 requests/inmate</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Sources of Variance</th>
<th>SS</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>PR &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misconduct Hearings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>between groups</td>
<td>49.09</td>
<td>3</td>
<td>16.36</td>
<td>6.09</td>
<td>0.0011 **</td>
</tr>
<tr>
<td>within groups</td>
<td>169.39</td>
<td>63</td>
<td>2.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>218.48</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Multiple Comparison of Means - Scheffé
Group 3 compared to Group 1 *
Group 4 compared to Group 1 *
Group 2 compared to Group 3 *

* p< 0.05
** p< 0.01

As with the demographic variables, initial ANOVA tests, followed by the Scheffé test, were conducted to analyze the specific events categories with the four different frequency groups of health services requests as used in Table 14.

Significant findings of ANOVA in Table 18 indicate that, of the different categories of specific events occurring during incarceration, the number of misconduct hearings showed a significant mean difference within and between groups of health services frequency requests at the p< 0.01 level. Not indicated in Table 18 are ANOVA tests of the follow-up utilizations that were also done. Results
show the same association significance as those of the health services requests. Results of the Scheffé test further indicated that mean differences between pairs of nearly all different groups of service requests accounted for the differences at the p< 0.05 significance level.

**Misconduct Hearings**

While incarcerated women act out more frequently than men, incarcerated men tend to be more covert in rule-breaking behavior (e.g., gambling, drugs, or black market) Pollock-Byrne (1990). Among this study population there were no documented reasons for misconduct hearings which involved covert actions, i.e., gambling, dealings with drugs and contrabands. Recorded reasons for misconduct hearings extracted from subject cases illustrate the acting out behavior of punishable infractions.

- Refusing to obey officer; use threats or use of force to a correctional officer.
- Unauthorized contact with inmate [usually some type of intimate contact].
- Using abusive language; unauthorized possession; engaging in sex acts.

Misconduct or other anticipated hearings were not recorded in the health records. This study revealed that anticipation of misconduct hearing may be presumably associated with health services requests and follow-up utilization. Of the study population, 48% had between one and seven misconduct hearings and utilized a total of 568 psychiatric/mental health follow-up services or 17.8 per
inmate. This figure compares to the 52% subjects without misconduct hearings who utilized 351 psychiatric/mental health follow-up services or 11.0 per inmate. Though too few in numbers to determine statistical significance, it may be noted that more injuries were recorded among the group with misconduct hearings than those without (1.3 versus 0.7 per inmate, respectively).

The findings related to misconduct hearings only indicate the notion that misconduct as an intervening stress variable may intensify associations with behavioral indicators. Among the interconnected factors in relation to the significant findings of HDA and HAS, misconduct hearings surfaced as a related stressor.

Question #3: What, if any, are Important Stress Factors that Motivated the Women Inmates to Request and Utilize Health Services?

Most of the stress factors which were highlighted and discussed in the literature support a theme of distress and behavioral indicators noted in this study.

Health Status

Within the limits of the data collection method of record review and a minimal focus on medical diagnostic testings and laboratory test results, relatively few inmates were found to be physically ill or having had diseases. For instance, of the 67 inmates, only seven had documentation of the following diseases: diabetes (2), HIV disease (1),
hypertension requiring medication (1), seizure disorder (1), rheumatoid arthritis (1); and repeated abdominal abscesses that required surgery (1). In most cases, recorded impressions on the most recent health assessment form indicated: "healthy" or "WNLD" (within normal limitation of development).

Carp and Schade (1992) and Ingram-Fogel (1991) reported a high prevalence (25%) of women with sexually transmitted diseases and gynecological related disorders which was not revealed in this study sample. There also was a near absence of recorded HIV seropositivity findings while national studies report higher rates (Weiner & Anno, 1992; Weisfuse et al., 1991).

Prevalence of mental illnesses (as opposed to high emotional distress) was even more difficult to define. Most of the mental health diagnoses recorded by the psychiatrist were either mood disorders, organic personality disorders, or manic depressive personality. In numerous cases, one inmate may have had a different diagnosis recorded on subsequent visits for which antidepressant, antipsychotic or tranquilizing medications were prescribed. Recordings of the mental health worker described emotional distress behaviors which in most cases were similar in nature, i.e., anger and frustration outbursts and inmate relationship conflicts.
Health Services

Each inmate was seen by a health care provider a mean of 39 times during the study year or nearly every sixth day (based on mean of 219 days of stay per subject). Of those 39 visits, each inmate initiated nearly 17 health services requests, not including dental and dietician services.

A distinct incongruence was discovered between the majority of reasons presented by the inmates when requesting health services and the majority of types of follow-up services provided. For example, of the total 1,131 initiated requests, 941 (14 per inmate) were for sick call services and only 133 (2 per inmate) for mental health services (Table 10). Most reasons for sick call were medically related symptoms or general complaints as reported by Sheps, Schechter and Prefontaine (1987), i.e., headache, back pain, or rash (see Table 11) for which, in most cases, the inmates were treated. On the other hand, of the total 1,468 follow-up services, only 451 (6.7 per inmate) were for medical interventions while nearly twice as many or 919 (13.7 per inmate) were for interventions in mental health as shown in Tables 12 and 13).

This incongruent picture does not seem to support a possibly higher prevalence of medical illness or disease as may be assumed. Rather, it appears to reflect behavior of distress (Eisenberg & Dillon, 1989; Hurley & Dunne, 1991; Johann & Osanka, 1989). Batter and abuse (Eisenberg &
Dillon, 1989), motherhood (Gilfus, 1992; Jose-Kampfner, 1992; Muraskin & Alleman, 1993; Ross & Fabiano, 1989; Ward & Kassebaum, 1965), for instance, may be some of the specifically intense distress factors and interwoven forces related to the women inmates that reflect the health seeking behavior seen in this study.

Extractions of three inmate records and part of their sick calls below provide evidence for an inability to cope or to seek outside help, or to express needs appropriately, all of which are effects of distress syndromes (Eisenberg & Dillon, 1989). The examples also illustrate stress reactions expressed in somatized complaints that are psychophysiological in nature (Monat & Lazarus, 1977; Selye, 1956):

Case 28
1/7 congestion, general malaise.
1/27 dizzy
1/28 constipation
2/4 need hormone check
2/10 neck and shoulder pain
2/24 back pain
3/3 stressed, too much noise in dorm

Case 19
11/5 leg pain
11/8 sore neck
11/13 need glasses
11/30 rash both lower legs
12/8 want lower bunk to sleep

Case 41
3/30 shoulder pain
4/6 nausea & vomiting
4/7 fear of seizure
4/8 cold symptoms
4/9 nightmare
4/11 wrist brace request
4/12 rash under breast
The patterns of psychophysiologic symptoms are also revealing in the "sick call" examples. At times, daily requests appear in clusters or during short intervals, but the symptoms are unrelated and not necessarily indicative of an acute disease. This pattern was noted frequently and may be another behavioral indicator of distress. Somatic symptoms for sick call did not differ among study subgroups. The differences were in the frequencies of requests.

Motherhood

Women with dependent children were identified in the group of non-HDA women as a related significant differentiation from the HDA group but did not differentiate as a subgroup from the study population. It was noted, however, that while the majority of mental health services of the women with dependent children dealt with inmate conflicts, not once was a documented reason for services related to concerns about younger children. If any concerns were raised, they were about the older children and fear of their drug or crime involvement as Reta (not real name, case 38) illustrates:

Reta is a single mother of four children, age 23, 21, 15, 11; each child from a different father; the two older children are incarcerated, the 15 y/o is a Ward of the Salvation Army and information of the youngest was not documented. She was seen for health services 67 times (178 days) or nearly every 2.7 days of which 25 were for mental health, 27 for sick call, and 15 for medical. "I am afraid my son will turn out gay lifestyle." "What will happen to the two who are locked up." "Today my son was sentenced for something he did not do." Many times she expressed stress because she
wanted to visit the older children at the Correctional facility, but no mention of the younger child.

Could it be that for some mothers, having young children and knowing that someone will care for them is, in relation to all other stressors, more reassuring? As recorded, most of the young children were being cared for by some family member. When the older children are in trouble, the mothers in several cases were found to express their concerns and show indications of higher stress inflicted by "pain and guilt they [mothers] feel about their children" (Gilfus, 1992, p. 81).

In response to question #3, findings in this study related to stress factors and response effects that may motivate women inmates to request health services appear to involve multiple factors. Definitive statements cannot be drawn from any particular stress factor. Rather, aside from the other stress indicators that were found to have statistical significance, a combination of interrelated stressors that are more specific to women inmates and less to illness or disease, may explain some of their health status and behaviors. Batter and abuse and motherhood, for example, may add to the intensified response behaviors. They also may account for the incongruence between reasons expressed by the inmates when requesting health services and the somatic expressions of erratic patterns that seem to have emerged from the study findings.
CHAPTER V

SUMMARY, CONCLUSION AND IMPLICATIONS

Summary

This exploratory study was stimulated by (a) reports that women inmates manifest more health-related symptoms and disability and request and utilize more health care services than men; (b) a near absence of studies exploring underlying factors or stressors that intensify health care needs of women during incarceration; and (c) a lack of gender specific assessment methods in corrections that identify nonphysical aspects of health related to emotional and social well-being.

Unlike previous published studies on imprisoned women, this investigation explored stress factors and their interrelatedness as to their impact on health service seeking behavior of imprisoned women and subsequent follow-up services. Certain profile characteristics and stressful events that existed during incarceration were examined as to their influence upon health services activities. A method of triangulation was applied to examine possible behavioral indicators through descriptive analysis and statistical testing. Forty-seven sociodemographic variables were examined relating to such factors as ethnicity, age,
education, family size, marital status and children, history of juvenile runaway and delinquency, substance abuse and methods of use, sexual/physical abuse, attempted suicide, prostitution, and inmate and family crime history.

Combinations of sociodemographic characteristics and interrelated stress factors were further explored through qualitative enquiry to explain behavioral indicators that may reflect the health and health needs of the women inmates. Some preliminary results of statistical testing and qualitative enquiry produced a number of insights in response to several of the study questions.

Profile of Study Group

Sociodemographics

The majority of the subjects were Hawaiian/Part-Hawaiian (55%) and born and raised in Hawaii (64%). The age of the subjects ranged between 19 and 55 years, with a mean age of 33. Most had either never married (49%) or were divorced or separated (33%). Nearly two-thirds of the women had between one and five children (66%). Over one-half (52%) had dependent children under the age of 18. Most of the younger children were in the care and custody of close family members, i.e., inmate's mother, grandmother or other relatives.

Nearly two-thirds of the women subjects came from a single parent or divorced or separated home (64%) and had three or more siblings (67%). At some time in their lives,
almost one-half of the inmates had at least one family member being incarcerated (48%). Over half had run away from home at least once as a teenager (52%) and nearly a third had attempted suicide (32%). Many had a history of juvenile arrests and detention (42%); a majority had at least three arrests prior to their last incarceration (82%). The most common offenses were drug related (73%) and crimes against property (35%).

Over two-thirds of the women left high school before graduation (67%) due to loss of interest, drugs or other illegal activities, pregnancy or a combination of the foregoing factors. A majority had no employment history (84%) and their main income source was from illegal activities, including prostitution (61%).

Forty six percent of the women had experienced some form of abuse, physical or sexual or both. Fifty four percent were seriously neglected as a child. A majority had a history of illicit drug use (84%) of whom 70% began using drugs as teenagers. The most common drug of choice prior to incarceration was cocaine (40%), and the preferred method of intake was intravenous (IV) (43%). The women had histories of alcohol abuse (51%) and smoking (62%). At least once prior to their last incarceration, over one-half had undergone some type of alcohol and drug treatment.
**Stress Events Experienced During 1992**

Forty eight percent of the subjects experienced stress events involving court dates or hearings on misconduct. Other events such as transfers from or to another facility (40%) and receiving significant outside news (20%) or internal program denials (16%) were identified. Over one-half of the women sustained between one and five injuries (54%) resulting primarily from falls (22%), cuts and burns (28%), and physical altercations with others (15%).

**Health Care Services Activities**

Seventy two percent of the subjects initiated an average of 20 requests for health services of which 83% were for sick calls and 12% for mental health problems. The main reasons for sick calls were upper respiratory infections (79%), muscular/skeletal complaints and skin problems (70% each). Mental health services requests were primarily due to stress and anger (42%) or relationship issues with other inmates (20%).

Sixty one percent received up to 20 follow-up health services which were, in most cases, provided by a medical doctor (31%) or mental health worker (44%). Medical reasons related to muscular/skeletal complaints (60%), obstetric or gynecologic problems (42%), or just "feeling sick" (42%). Inmates were monitored by a mental health worker when they were deemed psychologically or emotionally stabilized (63%). They were counseled when found to be stressed and anxious...
(50%), when in conflict with others (49%), and when experiencing concerns or a sense of loss (31%). Concerns expressed related to issues of family and feelings of loss including grieving over a death, or as a result of the transfer of correctional staff.

**Findings Related to the Study Questions**

**Question #1 Relating to Demographic Variables and Health Services Requests and Follow-up Utilizations**

Among the 47 sociodemographic variables examined, two variables revealed a possible association with health services requests: histories of attempted suicide and drug abuse.

A history of attempted suicide (HAS) showed a possible association with the number and frequency of health services requests. In addition, of the sociodemographic characteristics shared by most women inmates, histories of childhood abuse, teenage runaway and prostitution were notably more prevalent among the members of the HAS group than the non-HAS group. Specifically, the HAS group members (a) used considerably more mental health services for reasons related to staff and inmate conflicts, (b) requested more sick calls for reasons related to somatic symptoms, and (c) incurred a greater number of misconduct hearings during the study year than the non-HAS group members.

History of drug abuse (HDA) by either method of intake, IV or oral/inhaled, was inversely associated with the number
and frequency of health services requests, particularly for mental health services. This association was statistically significant (p<0.05). The HDA group represented a higher health risk since nearly all the study subjects who had a history of prostitution (24 of 25) belonged to this group. However, those with a drug abuse background, on the average, requested nearly one third less sick calls (13.0 vs. 19.5) and almost two-thirds less mental health services per inmate (1.7 vs. 4.7) than those without a drug abuse problem. As a group, the HDA subjects displayed less distressed behavior. They utilized less than half as many mental health follow-up services (4.7 per inmate vs. 11.6 non-HDA), and had less injuries and fewer misconduct hearings during the study year.

Question #2 Relating to Significant Events Experienced During Incarceration on the Frequency of Requests for Health Care Services

Among the four stressful event variables—court hearing, misconduct hearing, program determinations and/or significant news—only misconduct hearing was significantly associated with requests for health services. Among the types of services, significantly higher use of psychiatric and mental health follow-up services was identified. Results indicate that misconduct hearings may be an intervening stress factor associated with health service utilization behavior.
Question #3 Relating to Stress Factors and Response Effects that Motivate Women Inmates to Request Health Services

Conclusions as to predictive stress factors that would lead to more frequent health service requests by women inmates cannot be drawn from the statistical results of this study. The findings of this exploratory analysis did reveal, however, that certain profile characteristics of the inmates' background may, in combination with other sociodemographic variables, represent behavioral indicators of intensified distress during imprisonment that are associated with increased health services activities. These profile characteristics were history of attempted suicide and a background free of drug abuse. Misconduct hearings were an associated intervening stressor. The characteristics may be distress factors that could be differentiated as leading to higher frequency requests and increase in follow-up utilization of health care services. They may also be behavior triggers reflective of greater difficulties in adapting to the complexities of a stressful prison environment.

A combination of characteristics specific to women was further explored to gain a more comprehensive understanding of the health behaviors and levels of distress during imprisonment. Batter, abuse and neglect experienced in varying degrees during childhood and/or adulthood and their
effects may contribute to the somatic reasons when requesting health services and the more intensified utilization of mental health follow-up services.

**Conclusion**

The sociodemographic profile of the 67 women prisoners in this study closely resemble the profile of incarcerated women in general on a national level (ACA, 1991; U.S. Dept. of Justice, 1994). The majority of female inmates are young and from an ethnic minority group. They grew up in socioeconomically deprived homes, are single mothers with young children, have experienced some type of abuse as a child and/or adult with often serious emotional effects, and ran away from home. Their education and work skills are marginal and they are likely to have a record of substance abuse around which most of their delinquent and criminal activities evolved.

This disadvantaged background of the offending women has placed them into a health predicament that challenges all who are committed to their care during incarceration. Considerable information on who the women are (ACA, 1991; U.S. Dept. of Justice Statistics, 1994) and what led to their criminal behavior (Carlen, 1988; Culliver, 1993; Pollock-Byrne, 1990) is found in the published literature.

Discussions are shared on long-standing health risk behaviors of the offending women, their health habits, and neglect of self-care in healthful living (Pollock-Byrne,
1990; Ross & Fabiano, 1986). The physical, emotional, and psychological effects on health seen in the women as they enter incarceration have been examined (Daly, 1994; Eisenberg & Dillon, 1989; Gilfus, 1992; Hurley & Dunne, 1991; Ingram-Fogel, 1991; Johann & Osanka, 1989; Jose-Kampfner, 1992; Steadman, Holohean, & Dvoskin, 1991). Studies specifically related to women, their victimization, and road to crime have been presented and dramatically described in the literature (Carlen, 1988; Chesney-Lind & Rodriguez, 1983; Daly, 1994; Gilfus, 1992; Jone, 1980; Miller, 1986). In all, the described sociodemographic profile of offending and incarcerated women remains consistent.

Thus, it should not be surprising that, based on the described profile and the health predicament of women offenders, the women coming to prison are not well. In fact, one would expect that their health is severely compromised. And indeed it is (Carp & Shade, 1992; Ingram-Fogel, 1991; Jose-Kampfner, 1992; Pollock-Byrne, 1990). But how compromised is the health of the women inmates and what are the behavior indicators to show the level and degree of compromised health? Or what level of health could one hope to attain for the women in an incarcerated environment? These questions have not yet been answered and remain open to speculation. The findings of this study may have offered
some clues regarding behavior indicators that may lead toward eventual answers.

The medical-oriented health care approach, practiced in most correctional institutions (Cushing, 1986; Ross & Fabiano, 1986), was also applied in the care of this study group. Treatments of illness, disease, and episodes of discomfort were provided. The general health condition of the women studied could presumably be described as being physically well but emotionally distressed. Their health care services pattern, including the types, reasons and frequencies of the services, seems to illustrate a comprehensive picture of distress behavior. Such picture of distress behavior stimulates thoughts and possible explanations and suggestions for program development in correctional health and urgently needed research on health related to imprisoned women.

**Health Needs and Services Pattern**

On the average, each inmate was seen by a health care provider 36 times during the study year. Nearly one-half of the contacts (17) were initiated by the inmate and primarily related to acute and/or chronic somatic health problems. The remaining 19 contacts were follow-up visits of which nearly twice as many were for mental health interventions rather than for medical service.

In most cases, when requesting health services, the women expressed health symptoms related to upper respiratory
tract symptoms, muscular skeletal pain, and the like (see Table 11). In addition, an erratic frequency pattern of sick call requests was discovered. Such pattern is suspect of distress behavior that is driven by factors other than the reasons or needs stated by the women. This health service seeking behavior among the study population was presumably triggered by underlying motivations of psychosocial needs as was found by Tessler, Mechanic, and Dimond (1976) in their study outside the correctional institution. Recurrent symptoms of a chronic nature as presented reasons for seeking medical attention often are reported to be covert reasons characteristically expressed by women who suffer Battered Woman Syndrome (BWS) (Eisenberg & Dillon, 1989). Over 50% of the women in the study group had experienced some type of abuse; though the percentage may be higher had the women been interviewed. Specifically, the health seeking behavior of the HAS and non-HDA subgroups which also had a higher abuse record raises the suspicion that BWS may be quite prevalent among these groups and possibly among imprisoned women in general.

The controlled environment in prison could be an opportunity for the correctional health service providers to identify and treat BWS. According to Eisenberg and Dillon (1989), BWS is an acute illness with psychological and physical dimensions. The symptoms are inferential and
invariably chronic in nature. The treatment requires a wholistic approach of intensive health care interventions (Eisenberg & Dillon, 1989). Though the entire study group did receive intensive health care intervention, any suggestions for identification and treatment of BWS was not apparent, nor is BWS discussed in the literature on correctional health services.

Subgroup Effects

The small sample size of the study precludes drawing any subgroup conclusions. However, in the absence of any discussion in the literature on subgroup effects of incarcerated women on health and health seeking behavior, overall findings evolving from this study highlight the need to further study. Among the commonly shared sociodemographic characteristics and stressors, some factors, i.e., histories of attempted suicide (HAS) and drug abuse (HDA) or non-HDA indicate that varying distress levels and behavior effects may exist among inmate subgroups. Subgroup frequency patterns and presented reasons for initiating health services may be indicators of the presence or absence of healthful adaptation to a stressful environment.

Subgroup effects, however, ought to be viewed with caution and in the context of other interrelated factors as explored and discussed in Chapter IV. An example of the complexities of interrelated variables and their possible
interpretations could be seen in relation to the HDA group. Among the HDA group, for instance, some sociodemographic variables were more prevalent (i.e., high school dropout, teenage runaway, history of prostitution) while others were less prevalent (i.e., being married, having children, physical/sexual abuse) compared to the non-HDA group. Though conclusions cannot be drawn from the comparisons, one could speculate as to why the HDA subgroup displayed significantly less distress behaviors.

The HDA women reflect a history of an early unstable and more independent life. They ran away as teenagers and dropped out of high school and had significantly less children. They engaged in higher risk-taking behavior as "street women" with drug involvement than was found among the non-HDA women. Such a life history may have "toughened up" the HDA women and lessened their distress vulnerability to stressful environments such as a prison. Second, the fewer histories of physical and sexual abuse and attempted suicide among the HDA group may all have contributed to a lesser intensity of distress behavior during incarceration. Third, drug treatment programs were offered to the HDA women at WCCC and may have had a health effect, while similar programs appropriate for non-HDA women may not have existed.

HDA, as well as other possible stress predictor variables, may only be significant in relation to other interrelated factors. Before any inferences and conclusions
can be drawn, additional empirical evidence is needed. Effects of treatment programs on the coping and adaptation capacities of subgroups during incarceration remain to be explored. A better understanding of subgroup effects could assist in health services program development in order to meet the health care needs more efficiently and effectively.

**Difference in Service Patterns**

The study group utilized nearly twice as many follow-up services in mental health than in medical care (see Table 12). Intensified mental health utilization among incarcerated women was also reported in the literature (Hurley & Dunne, 1991; Steadman, Holohean, & Dvoskin, 1991). But the studies failed to assess the mental health interventions within the context of the women's health services seeking behavior and the reasons that were presented by the inmates at the time health care was accessed.

In this study, the majority of reasons given when requesting health services were related to chronic, medically-oriented problems and somatic symptoms. Yet, most of the mental health services focused on monitoring or treating situational distress and anger and conflict resolution with fellow inmates (see Table 13). The incongruence between the women's health complaints and the reasons documented for intensive mental health follow-up may reflect a conflict between the actual health needs and
demands for services as described by Rossi and Freeman (1989).

According to published reports, women in general tend to express their health needs differently than men. Underlying reasons for medical attention are expressed through chronic, medically-related problems or somatic symptoms, particularly when the health needs are related to psychosocial factors (Kessler, 1986; Monat & Lazarus, 1977; Tessler, Mechanic & Dimond, 1976). The more intense the distress, the more severe the stress reactions with complaints of inferential psychophysiological symptoms (Eisenberg & Dillon, 1989). If, under such conditions, women outside prison suffer increasingly severe stress reactions, it could be assumed that incarceration may add further intensity to the distress with resulting effects.

The variance of the unstated reason from the health service seeking behavior may trigger unrelated treatment responses, creating a need-service difference as described by Rossi and Freeman (1989). Except their existence, not much is known about need-service differences and their effects on health care and the health on the people seeking the care. More investigation is required than now exists. But such phenomena was observed in this study.

If actual health needs of incarcerated women are not articulated, identified or recognized, the services provided may well be inadequate. The study population, as documented
in the medical records, appeared generally to be medically healthy. But the frequency patterns, the types and reasons for requests and utilization of health services challenge the understanding of health pertaining to incarcerated women. One may suspect that unfulfilled social health needs among the women inmates may be the triggers for intensified health service initiating and follow-up services.

**Misconduct Hearings**

The findings related to anticipation of misconduct hearings may be of interest to health care providers in correctional institutions. Though they were not recorded in the health records, misconduct hearings surfaced repeatedly as a possible intervening stress variable.

Rule breaking behavior has been addressed in the literature as a conduct issue. Some assumptions as to reasons why women break rules more frequently but less severely than men have been offered (McClellan, 1994; Pollock-Byrne, 1990). But the behavior difference is not understood as a phenomenon related to health, health behavior or an expression of "not being well." In light of the study findings, it could be suggested that misconduct may be a symptom of the same reasons for seeking health services and not an intervening stress factor. Further study may offer a better understanding.

Anticipated court hearings, on the other hand, were not found to be associated with health services requests. Yet,
they also determine inmate incarceration status. One possible explanation is that court hearings are part of the incarceration process the inmate can more easily accept, while misconduct hearings are added frustrations that are not part of the "incarceration deal." Evidently, the intervening variables related to stress events during incarceration need to be researched in greater detail by the health care providers as to their impact on health services activities.

In summary, findings of this exploratory study revealed the complexities of interrelated stress factors, their impact on health services seeking behavior and utilization activities among imprisoned women. The concept of health for this special population is not well understood. Under incarcerated conditions, the strength or weakness of somatic defenses and adaptive capacity among individuals and groups may intensify. Aside from individual differences, group distinctions may emerge. Groups collectively may display intensified behavioral indicators of distress, as reflected in this study. Types and reasons for seeking health services can be studied empirically. Significant stress predictors and their behavior indicators could possibly be isolated.

Implications of the Findings

The findings of this study point toward a number of recommendations that could strengthen correctional health
care services for women and add to the knowledge base of the health behavior of incarcerated women. The following are several specific areas that could be pursued.

**Development of a Comprehensive Health Profile Assessment**

Histories of attempted suicide (HAS) and drug abuse (HDA) were two stress indicators that seem to affect the number of health services requests and their utilization. These indicators, when examined with other sociodemographic characteristics—e.g., history of childhood and/or adulthood abuse, teenage runaway and high school dropout—continue to show their importance relative to the influence on request for health services and their utilization. These findings suggest that a comprehensive sociodemographic profile of the inmate be part of the initial health assessment and be incorporated into the inmate’s health record. The profile should include stressful life events, family history, and ideally crime category or motivation for crime. Such a profile may help identify women who are vulnerable to intensified distress behavior. It may help to improve the management of women’s health and provide correctional staff with an increased understanding of behavioral indicators and their effect on health services requests and utilization.

**Information System Within the Women’s Facility**

Misconduct hearings were found to be a significant stress factor or, possibly, a symptom of stress, influencing health services utilization. Frequency of misconduct
hearings also was found to be connected with frequency of injuries. These clues of distress, in turn, influence health service seeking behavior. Other significant events (e.g., program determinations, court hearings, anticipated parole, and outside news), however, did not reveal any influence on health services activities. Though these findings are indications only, they do stimulate questions as to how beneficial certain information may be. Information on inmates' daily activities and behavior may be helpful in planning health services.

While information regarding significant events surrounding the inmate’s life during incarceration and misconduct behavior could be accessed by health care providers, the need for such information exchange has not been identified. A better knowledge base needs to exist whether special events and activities during imprisonment influence health service activities. Based on the findings in this study, it could be assumed that information on misconduct in relation to the inmate’s health service utilization could be important in developing therapeutic approaches that may have an effect on the behavior surrounding health service activities.

Commitment to Public Health Interventions

Incarcerated women are a socially deprived group who, in many instances, display insufficient education and limited work skills. These women are beset with poor health
behaviors and unhealthy lifestyles, e.g., substance abuse, physical and/or sexual abuse, neglect, family violence, and dysfunction. Many fall victim to crime and prostitution and are at high risk for sexually transmitted diseases as well as physical and psychological distress. With such backgrounds, many of the women may not have developed the knowledge, skills and perception of more healthful lifestyles and behaviors.

As a group, incarcerated women present a multitude of public health services needs. Considering the national increase of incarcerated women, upgrading health programs and services to become more public health oriented is called for. The women in the study group received various social programs (e.g., drug treatment, anger management, and parenting programs) in an attempt to address some public health needs. But the need for those programs were established and case-managed separately from health services. Perhaps, evidence of collaborative case management efforts between health care services and social programs and their impact on health and health care seeking behavior would significantly contribute to a better understanding of women’s health services needs.

Implications for Future Research

This study explored interrelated variables of biopsychosocial dimensions for a better understanding of incarcerated women, their health and behavior in a stressful
environment. It revealed some tentative findings on differentiating groups and clues of intensified stress factors among subgroup inmates (e.g., history of attempted suicide, absence of drug abuse). Whether these stress factors are triggers for seeking health services under distress conditions are still subject for further investigation.

Another possible research approach to further explore stress predictors is to adopt Daly's deep-sample methodology (Daly, 1994) by repeating this study with selected sociodemographic characteristics from her pathway categories, i.e., "Drug-connected Women." This replication may strengthen the findings of this study. Daly's typology could be further developed for application in health services and lead to conceptualizing "health" for this special population. Her "pathway to felony" concept could be further developed to a "pathway from felony to health" and identify health and behavioral indicators for the incarcerated women.

Nursing provides a major component of correctional health. As illustrated in this study, nurses respond to initial health care requests, manage sick call, triage health services, and render care to episodic health problems. The nursing profession, in general, focuses its care not only on disease or illness but on all dimensions of human beings as they relate, experience, and respond to
events or situations surrounding health, well being, and illness. The nurse in a correctional setting, therefore, may be in the best position to shift the nursing care focus from a predominant episodic medical orientation to a more broadened public health focus. A broadened health care approach would include proactive collaboration with case managers of social programs.

The study findings, for example, revealed an association of public health related problems of the women and a frequency of seeking and utilizing mental health services. But whether managing the health care of individual inmates and inmate groups with a broadened public health approach is a more effective and approach is not known. Nursing within the correctional institution has an opportunity to develop and test collaborative health care management with other professional disciplines and evaluate their impact on the inmate’s health service utilization behavior.

Findings of this study could be stimulus for further nursing research of various biopsychosocial dimensions as they relate to incarcerated women, their health, and health responses. Such research may enhance an understanding of the care needed particularly for this population. It may offer further insight into approaches to rehabilitate, strengthen, and maintain an adaptive capacity that leads to more healthful living.
To provide more specific research foci for future investigations, the following hypotheses are proffered.

1. Health care seeking behavior as distress indicator of women inmates in prison includes the type, frequency, and reason for health service requests and the number of injuries and misconduct infractions.

2. Stress indicators associated with healthful adaptation to imprisonment are related to factors of the inmate's sociodemographic background, including history of abuse, educational level, attempted suicide, substance abuse, and health service seeking behavior.

3. Women without a history of drug abuse are at risk of intensified distress reflected in their health service utilization behavior and misconduct infractions.

4. Women with a history of attempted suicide are more vulnerable to difficulties in adaptation to a prison environment and more frequently seek health services, are more injury-prone, and commit more misconduct infractions than those without such history.
APPENDIX A
DATA COLLECTION INSTRUMENT

ID#____________________

SECTION I  Sociodemographic Dimensions

DOB_________ Age_________
Admit Date______________________

Race  A=Asian C=Chinese F=Filipino G=Guamanian
       H=Hawaiian HX=PartHI I=Am.Indian J=Japanese
       K=Korean N=African American P=Portuguese S=Samoan
       W=White X=Other U=Unknown

Marital status
   1=Marr____ 2=Sing____ 3=Div____ 4=Sep____ 5=Other____

Sexual orientation    1=hetero____ 2=homo____ 3=other____

Information on husband=H or significant other=S

Number of children _____ ages:
   boys ______________________
   girls____________________

Number of Brothers=B_____  Sisters=S_______
other extended family members and their connection to
inmate: (if deceased, give age, cause and date at time
of death)

Support systems outside the prison:
Other significant information:

Education

# of years

Occupation

Employment (when) empl unempl

Income Liabilities

Religious Orientation involvements

SUMMARIZED JUVENILE/ADULT RECORD
J=JUVENILE
A=ADULT

SUMMARY OF PRESENT OFFENSES

MENTAL HEALTH

MEDICAL REPORT

PROBATION OFFICER'S EVALUATION/ASSESSMENT
A=AGGREVATED FACTORS
M/MITIGATING FACTORS

PRECONFINEMENT PROBLEMS
A=PRIOR PROBATION/CORRECTIONS/ADJUSTMENTS
B=DRUG/ALCOHOL HX
C=PRIOR MENTAL HEALTH
D=EMPLOYMENT HX
E=MILITARY
F=FAMILY/COMMUNITY TIES

IQ/EDUCATION
Biological Dimensions (include dates)

Height ___________ Weight ___________

Health/illness status __________________________
(any illness, handicap, allergies, injury, significant findings, etc.)

pregnant______________ dates____________________

hx. of prostitution________________________________

hx. of substance abuse__________________________
(state any specifics, i.e., type, method of intake)

alcohol yes____ no____ how much/ how long ________________

drugs yes____ no____ how much/ how long ________________

hx. of smoking pack/day______________ length____

hx. of abuse ______________________
(state specifics, i.e., when, how long, by whom)
S=sexual  P=physical  M=mental

Psychosocial Dimensions

Variables that involve interpersonal relations that occurred before the recent incarceration:

SECTION II STRESSORS DURING INCARCERATION

Life events (birth, death, etc. related to inmate’s family, support system):

Scheduled events

court determinations and dates related to incarceration or release:
other significant events and dates relating to inmate, family and significant others:

Precarious events

conflicts with staff, inmates:

illness/injury:

Misconduct Record:

Program Change Requests a=approved d=denied

SECTION III: RESPONSES

Request and utilization of health services

nursing sick calls

<table>
<thead>
<tr>
<th>dates</th>
<th>reason</th>
<th>intervention</th>
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</table>

medical physician

<table>
<thead>
<tr>
<th>dates</th>
<th>reason</th>
<th>intervention</th>
</tr>
</thead>
</table>

mental health

<table>
<thead>
<tr>
<th>dates</th>
<th>reason</th>
<th>intervention</th>
</tr>
</thead>
</table>

dental

<table>
<thead>
<tr>
<th>dates</th>
<th>reason</th>
<th>intervention</th>
</tr>
</thead>
</table>

other:
APPENDIX B
CODING SYSTEMS I AND II

CODING SYSTEM I

FINAL MEASUREMENTS, CODES AND CATEGORIES WITH CLUSTER REASONS

Sociodemographic Background

<table>
<thead>
<tr>
<th>Race</th>
<th>Hawn/Part = 1</th>
<th>White = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filipino</td>
<td>3</td>
<td>Black = 4</td>
</tr>
<tr>
<td>Chinese</td>
<td>5</td>
<td>Samoan = 6</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>Am. Indian = 8</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Born &amp; raised in Hawaii</th>
<th>yes = 1</th>
<th>no = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>over 10 years in HI</td>
<td>= 4</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Age during 1992</th>
<th>19 ≤ = 1</th>
<th>20 - 24 = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25 - 29 = 3</td>
<td>30 - 34 = 4</td>
</tr>
<tr>
<td></td>
<td>35 - 39 = 5</td>
<td>40 - 44 = 6</td>
</tr>
<tr>
<td></td>
<td>45 - 49 = 7</td>
<td>50 &gt; = 8</td>
</tr>
</tbody>
</table>

Marital status of parents when growing up
(during early childhood, documented effect)

never mar. = 1  
mar. = 2  
sep. = 3  
div. = 4  
deceased or other = 5

Number of siblings  (incl. step-sibl.)
0,1,2,3,4,5,6,7,8,9=9>

Raised by (most of life under 18)

mo. = 1  
fath. = 2  
gr.par. = 3  
foster par. = 4  
both parents = 5  
par. & one step.par. = 6  
multiple changes = 7  
aunt & other = 8

Education grade:

9 ≤ = 1  
10 = 2  
11 = 3  
12 = 4  
not recorded = 5
<table>
<thead>
<tr>
<th>HS dropout due to</th>
<th>pregn. = 1</th>
<th>detention = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>run away</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>other</td>
<td>4</td>
<td>(lost interest, prostitution, drugs)</td>
</tr>
<tr>
<td>work</td>
<td>5</td>
<td>n/a = 5</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>GED</th>
<th>yes = 1</th>
<th>no = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>college cr</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment</th>
<th>never or short on/off = 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>one yr. or more prior to inc. = 2</td>
<td></td>
</tr>
<tr>
<td>other (long ago, sporadic) = 3</td>
<td></td>
</tr>
<tr>
<td>not docum.</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Type of employment</th>
</tr>
</thead>
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<tr>
<td>service (bartender, waitress, driver) = 1</td>
</tr>
<tr>
<td>clerical = 2</td>
</tr>
<tr>
<td>sales clerk = 3</td>
</tr>
<tr>
<td>none = 4</td>
</tr>
<tr>
<td>other (helped in fam. business, self-empl.) = 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of recent income (before inc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welfare = 1</td>
</tr>
<tr>
<td>employment = 2</td>
</tr>
<tr>
<td>illegal (drugs, theft, embezzle) = 3</td>
</tr>
<tr>
<td>prostit/escort (hostess, dancer in clubs) = 4</td>
</tr>
<tr>
<td>other (workman's comp.) = 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital status in 1992</th>
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</thead>
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<tr>
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<tr>
<td>never mar = 2</td>
</tr>
<tr>
<td>div. = 3</td>
</tr>
<tr>
<td>sep = 4</td>
</tr>
<tr>
<td>widowed = 5</td>
</tr>
<tr>
<td>other = 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of children</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,1,2,3,4,5,6,7,8, 9 or more</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of children age 18 and under (≤ 18)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Number of children over age 18 (&gt; 18)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Age when first child was born</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 and &lt; = 1</td>
</tr>
<tr>
<td>12-13 = 2</td>
</tr>
<tr>
<td>14-15 = 3</td>
</tr>
<tr>
<td>16-17 = 4</td>
</tr>
<tr>
<td>18 and &gt; = 5</td>
</tr>
<tr>
<td>not doc = 6</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Age of first pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-14 = 1</td>
</tr>
<tr>
<td>15-17 = 2</td>
</tr>
<tr>
<td>18 and &gt; = 3</td>
</tr>
<tr>
<td>not doc = 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of abortions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3 and more, not docum = 4</td>
</tr>
</tbody>
</table>
Legal custody of children under 18 (at least one)

\[
\text{inm} = 1 \quad \text{other fam. member} = 2 \quad \text{court} = 3 \\
\text{not recorded} = 4 \quad \text{out adopted} = 6
\]

Present care of minor children

\[
\begin{align*}
\text{inm. mother} & = 1 & \text{father of child} & = 2 \\
\text{adopt./foster} & = 3 & \text{niece/aunt/uncle} & = 5 \\
\text{inm. gr. par} & = 6 & \text{various other} & = 7 \\
\text{not recorded} & = 8 & \text{not applic} & = 9
\end{align*}
\]

Incarc. of any family member at any time prior to 1992

\[
\begin{align*}
\text{yes} & = 1 & \text{no} & = 2
\end{align*}
\]

Who?

\[
\begin{align*}
\text{mother} & = 1 & \text{father/step.fa} & = 2 \\
\text{sibling(s)} & = 3 & \text{husband} & = 4 \\
\text{boyfr/fiance} & = 5 & \text{child(dren)} & = 6 \\
\text{any combin.} & = 7 & \text{no} & = 8
\end{align*}
\]

Any family member incarc. during 1992

\[
\begin{align*}
\text{yes} & = 1 & \text{no} & = 2
\end{align*}
\]

Who?

\[
\begin{align*}
\text{mother} & = 1 & \text{father/step.fa} & = 2 \\
\text{sibling(s)} & = 3 & \text{husband} & = 4 \\
\text{boyfr/fiance} & = 5 & \text{child(dren)} & = 6 \\
\text{any combin.} & = 7 & \text{no} & = 8
\end{align*}
\]

Run away as juvenile

\[
\begin{align*}
\text{yes} & = 1 & \text{no} & = 2
\end{align*}
\]

History of attempted suicide prior to 1992

\[
\begin{align*}
\text{yes} & = 1 & \text{no} & = 2
\end{align*}
\]

Victim of physical abuse

\[
\begin{align*}
\text{child} & = 1 & \text{adult} & = 2 & \text{both} & = 3 & \text{no} & = 4
\end{align*}
\]

Physical abuser’s relationship to inmate

\[
\begin{align*}
\text{parent (mo, fa or both)} & = 1 & \text{step parent} & = 2 \\
\text{foster parent (either)} & = 3 & \text{sibling} & = 4 \\
\text{more than 1 fam. member} & = 5 & \text{gr. par} & = 6 \\
\text{uncle/aunt} & = 7 & \text{husb/boyfr} & = 8 \\
\text{other} & = 9 & \text{N/A} & = 0
\end{align*}
\]
Victim of sexual abuse

child = 2  adult = 2  both = 3  no = 4

Sexual abuser's relationship to inmate

parent (mo, fa or both) = 1  step parent = 2
foster parent (either) = 3  sibling = 4
more than 1 fam. member = 5  gr. par = 6
uncle/aunt = 7  husb/boyfr = 8
other = 9  N/A = 0

Victim of childhood neglect (emotional, abandonment, alcoholic parent or drugs, left to raise siblings)

yes = 1  no = 2

Adult Criminal History

Type of last felony for incarceration

assault = 1  burglary = 2  drug use = 3
drug traff = 4  robbery = 5  theft = 6
forgery = 7  multiple = 8  murder = 9

Crime(s) drug related

present yes = 1  previous yes = 3
present & previous yes = 5  pres. & prev. no = 6

Crime(s) alcohol related

present yes = 1  previous yes = 3
present & previous yes = 5  pres. & prev. no = 6

Year of last sentenced felon, WCCC admission

'85 = 7  '87 = 6  '88 = 5  '89 = 4
'90 = 3  '91 = 2  '92 = 1

Reason for latest incarceration during 1992

new crime = 1  parole/prob/furlough viol. = 2
escape = 3  other = 4

Days spent at WCCC during 1992
Number of adult arrests prior to last felony charge/arrest

1-2 = 1
3 & more = 2
none = 3

Juvenile arrests and detentions prior to age 18
arrests & detent. = 1
arrests only = 2
none = 3

Health Risks and Concerns prior to 1992

History of alcohol abuse

yes (teen and adult) = 1
teenage only = 2
adult only = 3
no = 4
occas. = 5

History of drug abuse

yes (teen and adult) = 1
teenage only = 2
adult only = 3
no = 4
occas. = 5

Type of drugs (latest and major)

Marijuana = 1
Cocaine = 2
Heroin = 3
PCP = 4
Poly drugs = 5
Crack Coc = 6
N/A = 7
Crystal meth. = 8

Major form of drug intake

p.o. = 1
inhaler = 2
IV = 3
IV plus = 4
p.o. plus inhaler = 5
other = 6
no = 8

Mental health treatment prior to last incarceration

yes = 1
no = 2

Alcohol/Drug treatment programs prior to last incarceration

(not consistently recorded)

once = 1
more than once = 2
no = 3

History of smoking

yes = 1
no = 2
sometime = 3

History of prostitution

yes = 1
no = 2
Health Care Services during 1992

Totals

Number of injuries
Number of sick call requests
Number of Mental Health services requests
Number of Medical services requests (MD & PNP)
Total number of services requests of each inmate
Number of nursing utilization services
Number of psychiatrist utilization services
Number of mental health worker utilization services
Number of medical utilization services
Total number of services utilization of each inmate
Total number of services (requ. & util.) of each inmate
Rate of total number of services per 100 days stay per inm.
Rate of total service requests per 100 days stay per inm.

Categories andClusters of related symptoms

Number of calls for reasons listed for sick call requests

URI - upper respiratory infections (cold symptoms, flu, fever, ear/nose/throat, head ache, allergies)
muscular/skeletal - pain (back, legs, arms)
cardiovascular (chest pain, blood pressure, circulation problems)
skin problems - blisters, sores, infections, rash

UTI - urinary track infection, painful urination, frequency; incl. vaginal infections, sex. transm. diseases;
GI - gastro-intestinal problems, abdominal probl., weight control, nausea/vomiting;

OB/GYN - obstetric/gynecological problems, preg., menstrual cramps, lower abd. pain, hemorrhoids;

medication issues - non-compliance, check;

seizure

eye/vision problems

Jonsing (drug withdrawl) - high stress, anger, distraught, nightmare, agitated, paranoia, anxiety;

other - Diabetes, job request clearance;

Number of calls for reasons listed for Psych/Mental Health services requests

conflicts - general, family members, staff;

relationship issues with other inm., girl-friend;

fear, loss, grieving - family, children, relative, staff;

stress - anxiety, anger, nightmares, paranoia;

other - seizure, medication check, depression;

Number of calls for reasons listed for Psychiatrist services follow-up utilization

stable condition, check up;

stress - anxiety, fear, agitation, nightmare, paranoia, distraught;

medication check up;

depression

organic personality disorder

relationship issues - children concern, other concern
Number of calls for reasons listed for Mental Health Worker services follow-up utilization

conflict issues with inmate girlfriend relation
general conflicts with staff, family;
orientation to facility, stable condition;
grieving - loss, concern of family, relative, staff issues;
stress - high anxiety, nightmares, agitation;
inmate's children issues
depression - suicidal
other - medication, chest pain, questions;

Number of calls for reasons listed for Medical & Nurse Practitioner (PnP) services utilization

orientation - stable condition;
URI - upper respiratory infection (cold, flu, infection, fever, feeling sick);
muscular/skeletal - back, leg, arms pain;
cardiovascular - chest pain, blood pressure problems;
skin problems - rash, blisters, sores, infections
UTI - urinary tract infection, vaginal problems;
GI - gastro-intestinal, abdominal problems, weight control;
OB/GYN - gynocological, obstetric problems, pregnancy, hemorrhoids, low abdominal pain;
eye/vision problems;
stress - agitation, anxiety, nightmares, distress;
other - medication, work clearance;
Number of injuries and reasons

- muscular/skeletal - fall = 1
- got hit by other = 2
- cut = 3
- burn = 4
- punched wall = 5

Events during incarceration in 1992

Number of total significant events during 1992

Number of each significant event:
- transfer, court dates, sign. news, program denial

Number of misconducts per inmate

CODING SYSTEM II
As entered into the computer for statistical analysis

Column

Id. number

3 Race
- Hawn/Part = 1
- Filipino = 3
- Chinese = 5
- Other = 7
- White = 2
- Black = 4
- Samoan = 6
- Am.Indian = 8

4 Born & raised in Hawaii
- yes = 1
- no = 2
- over 10 years in HI = 4

5 Age during 1992
- 19 < = 1
- 20 - 24 = 2
- 25 - 29 = 3
- 30 - 34 = 4
- 35 - 39 = 5
- 40 - 44 = 6
- 45 - 49 = 7
- 50 > = 8

6 Marital status of parents when growing up
(during early childhood, documented effect)
- never mar. = 1
- mar. = 2
- sep. = 3
- div. = 4
- deceased or other = 5

7 Number of siblings (incl. step-sibl.)
- 0,1,2,3,4,5,6,7,8,9>
8 Raised by (most of life under 18)

mo. = 1   fath. = 2   gr.par. = 3   foster par. = 4
both parents = 5   par. & one step.par. = 6
multiple changes = 7   aunt & other = 8

9 Education grade: 9 ≤ = 1   10 = 2   11 = 3
12 = 4   not recorded = 5

10 HS dropout due to

pregn. = 1
detention= 2
run away = 3
other = 4 (lost interest, prostitution, drugs)
work = 5
n/a = 5

11 Employment never or short on/off = 1
one yr. or more prior to inc. = 2
other (long ago, sporadic) = 3
not docum. = 4

12 Type of employment

service (bartender, waitress, driver) = 1
clerical = 2 sales clerk = 3 none = 4
other (helped in fam. business, self-empl.) = 5

13 Type of recent income (before incarceration)

Welfare = 1 employment = 2
illegal (drugs, theft, embezzle) = 3
prostit/escort (hostess, dancer in clubs) = 4
other (workman's comp.) = 5

14 Marital status in 1992

mar = 1 never mar = 2 div. = 3
sep = 4 widowed = 5 other = 6

15 GED yes = 1   no = 2 college cr = 3

16 Number of children 0,1,2,3,4,5,6,7,8,9 or more

17 Age when first child was born

11 and < = 1 12-13 = 2 14-15 = 3
16-17 = 4 18 and > = 5 not doc = 6
18 **Age of first pregnancy**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-14</td>
<td>1</td>
</tr>
<tr>
<td>15-17</td>
<td>2</td>
</tr>
<tr>
<td>18 and &gt;</td>
<td>3</td>
</tr>
<tr>
<td>Not doc</td>
<td>4</td>
</tr>
</tbody>
</table>

19 **Number of abortions**

<table>
<thead>
<tr>
<th>Number of Abortions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3 and more</td>
<td>4</td>
</tr>
<tr>
<td>Not docum</td>
<td>4</td>
</tr>
</tbody>
</table>

20 **Legal custody of children under 18 (at least one)**

<table>
<thead>
<tr>
<th>Custody Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inm</td>
<td>1</td>
</tr>
<tr>
<td>Other fam. member</td>
<td>2</td>
</tr>
<tr>
<td>Court</td>
<td>3</td>
</tr>
<tr>
<td>Not recorded</td>
<td>4</td>
</tr>
<tr>
<td>Out adopted</td>
<td>6</td>
</tr>
</tbody>
</table>

21 **Present care of minor children**

<table>
<thead>
<tr>
<th>Care Provider</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inm. mother</td>
<td>1</td>
</tr>
<tr>
<td>Father of child</td>
<td>2</td>
</tr>
<tr>
<td>Adopt./foster</td>
<td>3</td>
</tr>
<tr>
<td>Niece/aunt/uncle</td>
<td>5</td>
</tr>
<tr>
<td>Inm. gr. par</td>
<td>6</td>
</tr>
<tr>
<td>Various other</td>
<td>7</td>
</tr>
<tr>
<td>Not recorded</td>
<td>8</td>
</tr>
<tr>
<td>Not applic</td>
<td>9</td>
</tr>
</tbody>
</table>

22 **Incarc. of any family member at any time prior to 1992**

<table>
<thead>
<tr>
<th>Incarc. Status</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

23 **Any family member incarc. during 1992**

<table>
<thead>
<tr>
<th>Incarc. Status</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

24 **Who?**

<table>
<thead>
<tr>
<th>Role</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>1</td>
</tr>
<tr>
<td>Sibling(s)</td>
<td>3</td>
</tr>
<tr>
<td>Boyfr/fiance</td>
<td>5</td>
</tr>
<tr>
<td>Any combin.</td>
<td>7</td>
</tr>
<tr>
<td>Father/step. fa</td>
<td>2</td>
</tr>
<tr>
<td>Husband</td>
<td>4</td>
</tr>
<tr>
<td>Child(dren)</td>
<td>6</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
</tr>
</tbody>
</table>

25 **Ever incarc. family member prior to 1992**

(Use categories of #24)

26 **Run away as juvenile**

<table>
<thead>
<tr>
<th>Run away Status</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

27 **History of attempted suicide**

<table>
<thead>
<tr>
<th>Attempt Status</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

28 **Victim of physical abuse**

<table>
<thead>
<tr>
<th>Abuse Type</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child</td>
<td>1</td>
</tr>
<tr>
<td>Adult</td>
<td>2</td>
</tr>
<tr>
<td>Both</td>
<td>3</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
</tr>
</tbody>
</table>
29 Abuser’s relationship to inmate of #28

parent (mo, fa or both) = 1  step parent = 2
foster parent (either) = 3  sibling = 4
more than 1 fam. member = 5  gr. par = 6
uncle/aunt = 7  hsb/boyfr = 8
other = 9  N/A = 0

30 Victim of sexual abuse

child = 1  adult = 2  both = 3  no = 4

31 Abuser’s relationship to inmate of #30

(use categories of #29)

32 Victim of childhood neglect (emotional, abandonment, alcoholic parent or drugs, left to raise siblings)

yes = 1  no = 2

33 History of alcohol abuse

yes (teen and adult) = 1  teenage only = 2
adult only = 3  no = 4  occas. = 5

34 History of drug abuse

(same categories as #33)

35 Type of drugs (latest and major)

Marij. = 1  Cocaine = 2  Heroin = 3
PCP = 4  Poly drugs = 5  Crack Coc = 6
N/A = 7  Crystal meth. = 8

36 Major form of drug intake

p.o. = 1  inhaler = 2  IV = 3
IV plus = 4  p.o. plus inhaler = 5  other = 6
no = 8

37 Type of last felony for incarceration

assault = 1  burglary = 2  drug use = 3
drug traff = 4  robbery = 5  theft = 6
forgery = 7  multiple = 8  murder = 9

38 Crime(s) drug related

present yes = 1  previous yes = 3
present & previous yes = 5  pres. & prev. no = 6
39 Crime(s) alcohol related

(same categories as in #38)

40 Reason for reincarceration to WCCC during 1992

<table>
<thead>
<tr>
<th>Reason</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>escape</td>
<td>1</td>
</tr>
<tr>
<td>new crime</td>
<td>4</td>
</tr>
<tr>
<td>Parole viol.</td>
<td>2</td>
</tr>
<tr>
<td>misconduct</td>
<td>3</td>
</tr>
<tr>
<td>other</td>
<td>5</td>
</tr>
<tr>
<td>not applic.</td>
<td>6</td>
</tr>
</tbody>
</table>

41 Number of adult arrests prior to last felony charge/arrest

<table>
<thead>
<tr>
<th>Number of Arrests</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>1</td>
</tr>
<tr>
<td>3 &amp; more</td>
<td>2</td>
</tr>
<tr>
<td>none</td>
<td>3</td>
</tr>
</tbody>
</table>

42 Juvenile arrests and detentions prior to age 18

<table>
<thead>
<tr>
<th>Type of Arrest/Detention</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>arrests &amp; detent.</td>
<td>1</td>
</tr>
<tr>
<td>arrests only</td>
<td>2</td>
</tr>
<tr>
<td>none</td>
<td>3</td>
</tr>
</tbody>
</table>

43 Mental health treatment prior to last incarceration

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>1</td>
</tr>
<tr>
<td>no</td>
<td>2</td>
</tr>
</tbody>
</table>

44 Alcohol/Drug treatment programs prior to last incarceration

(not consistently recorded)

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>once</td>
<td>1</td>
</tr>
<tr>
<td>more than once</td>
<td>2</td>
</tr>
<tr>
<td>no</td>
<td>3</td>
</tr>
</tbody>
</table>

45 History of smoking

<table>
<thead>
<tr>
<th>Smoking History</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>1</td>
</tr>
<tr>
<td>no</td>
<td>2</td>
</tr>
<tr>
<td>sometime</td>
<td>3</td>
</tr>
</tbody>
</table>

46 History of prostitution

<table>
<thead>
<tr>
<th>Prostitution History</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>1</td>
</tr>
<tr>
<td>no</td>
<td>2</td>
</tr>
</tbody>
</table>

47 Year of most recent sentenced felon and WCCC admission

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>'85</td>
<td>7</td>
</tr>
<tr>
<td>'86</td>
<td>6</td>
</tr>
<tr>
<td>'87</td>
<td>5</td>
</tr>
<tr>
<td>'88</td>
<td>4</td>
</tr>
<tr>
<td>'89</td>
<td>3</td>
</tr>
<tr>
<td>'90</td>
<td>2</td>
</tr>
<tr>
<td>'91</td>
<td>1</td>
</tr>
</tbody>
</table>

48 Reason for latest incarceration during 1992

<table>
<thead>
<tr>
<th>Reason</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>new crime</td>
<td>1</td>
</tr>
<tr>
<td>parole/prob/furlough viol.</td>
<td>2</td>
</tr>
<tr>
<td>escape</td>
<td>3</td>
</tr>
<tr>
<td>other</td>
<td>4</td>
</tr>
</tbody>
</table>

49, 50, 51 Days spent at WCCC during 1992

52 Number of injuries

53, 54 Number of sick call requests
Number of mental health services requests
55, 56

Number of medical services requests (MD&PNP)
57, 58

Total services requests of each inmate
59, 60

Number of nursing follow-up services
61, 62

Number of psychiatrist follow-up services
63, 64

Number of mental health follow-up services
65, 66

Medical follow-up services
67, 68

Total follow-up services of each inmate
69, 70

Number of injuries and reasons
71 muscular/skeletal - fall
72 got hit by other
73 cut
74 burn
75 punched wall

Number of calls for reasons listed for sick call requests
76, 77 URI - upper respiratory infections (cold symptoms, flu, fever, ear/nose/throat, headache, allergies)
78, 79 muscular/skeletal - pain: back, legs, arms;
80 cardiovascular - chest pain, blood pressure, circulation problems;
81 skin problems - blisters, sores, infections, rash
82 UTI - urinary track infection, painful urination, frequency; incl. vaginal infections, sex. transm. diseases;
83 GI - gastro-intestinal problems, abdominal probl., weight control, nausea/vomiting;
OB/GYN - obstetric/gynecological problems, pregn., menstrual cramps, lower abd. pain, hemorrhoids;
medication issues, non-compliance, check;
seizure disorder
eye/vision problems
Jonsing (drug withdrawal), high stress, anger, distraught, nightmare, agitated, paranoia, anxiety;
other - Diabetes, job request clearance;

Number of calls for reasons listed for Psych/Mental Health services requests

conflicts - general, family members, staff;
relationship issues with other inm., girlfriend;
fear, loss, grieving - family, children, relative, staff;
stress, anxiety, anger, nightmares, paranoia;
other - seizure, medication check, depression;

Total number of medical services requests per inmate
(manual breakdown of reasons due to low number)

Number of calls for reasons listed for psychiatrist services follow-up

stable condition, check up;
stress, anxiety, fear, agitation, nightmare, paranoia, distraught;
medication check up;
depression
organic personality disorder
relationship issues, children concern, medical concern (very few);

**Number of calls for reasons listed for mental health service follow-up**

105, 106 conflict issues with inmate girl friend relation
107 general conflicts with staff, family; orientation to facility, stable condition;
110 grieving, loss, concern of family, relative, staff issues;
111, 112 stress, high anxiety, nightmares, agitation;
113 inmate’s children issues
114 depression, suicidal
115 other - medication, chest pain, questions;

**Number of calls for reasons listed for medical & PNP services follow-up**

116 orientation, stable condition;
117 feeling sick - cold, flu, infection, fever;
118, 119 muscular/skeletal - back, leg, arms pain;
120 cardiovascular, chest pain, blood pressure problems;
121, 122 skin problems - rash, blisters, sores, infections
123 UTI - urinary tract infection, vaginal problems;
124 GI - gastro-intestinal, abdominal problems, weight control;
125, 126 OB/GYN - gynecological, obstetric problems, pregnancy, hemorrhoids, low abdominal pain;
127 eye/vision problems;
128 stress, agitation, anxiety, nightmares, distress;
other - medication, work clearance;

**Significant events during 1992**

- **130** Number of misconducts (Lock Down) per inmate
- **131** Number of transfers per inmate
- **132** Number of court dates per inmate
- **133** Number of significant news from outside per inmate
- **134** Number of program denial per inmate
- **135,136** Number of total events per inmate
- **137,138,139** Total services (requ. & util.)
- **140,141** Rate of total services (requ. & util.) per 100 days stay per inmate
- **142,143** Rate of total services requests per 100 days stay per inmate
- **144** Number of children under age 18
- **145** Number of children over age 18
APPENDIX C

VARIABLE CATEGORIES

Sociodemographic, Biologic and Health Care Activity Variables

Categorizations for Comparison Analysis

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family size</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = 3+&gt; siblings</td>
<td></td>
</tr>
<tr>
<td>2 = &gt;3 siblings</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = yes - ever married</td>
<td></td>
</tr>
<tr>
<td>2 = no - never married</td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = yes</td>
<td></td>
</tr>
<tr>
<td>2 = no</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = 3+&gt; childr.</td>
<td></td>
</tr>
<tr>
<td>2 = &gt;3 childr.</td>
<td></td>
</tr>
<tr>
<td>Children under 18</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = no</td>
<td></td>
</tr>
<tr>
<td>2 = yes</td>
<td></td>
</tr>
<tr>
<td>Children age 18 and over</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = no</td>
<td></td>
</tr>
<tr>
<td>2 = yes</td>
<td></td>
</tr>
<tr>
<td>High School drop out</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = yes</td>
<td></td>
</tr>
<tr>
<td>2 = no</td>
<td></td>
</tr>
<tr>
<td>Juvenile runaway</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = yes</td>
<td></td>
</tr>
<tr>
<td>2 = no</td>
<td></td>
</tr>
<tr>
<td>Drug history</td>
<td>nominal</td>
</tr>
<tr>
<td>1 = yes</td>
<td></td>
</tr>
<tr>
<td>2 = no</td>
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</table>
**Intervening Variables - Events/Stressors**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale</th>
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<tbody>
<tr>
<td>Number of misconducts</td>
<td>interval</td>
</tr>
<tr>
<td>Rate of total number of misconducts per 365 days/inmate</td>
<td>interval</td>
</tr>
<tr>
<td>Number of transfers</td>
<td>interval</td>
</tr>
<tr>
<td>Number of court dates</td>
<td>interval</td>
</tr>
<tr>
<td>Number of significant news</td>
<td>interval</td>
</tr>
<tr>
<td>Number of program denials</td>
<td>interval</td>
</tr>
<tr>
<td>Number of all events</td>
<td>interval</td>
</tr>
<tr>
<td>Number of all events, excluding misconduct</td>
<td>interval</td>
</tr>
<tr>
<td>Rate of total events per 365 days/inmate</td>
<td>interval</td>
</tr>
<tr>
<td>Rate of total events per 365 days/inmate, excluding misconduct</td>
<td>interval</td>
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</tbody>
</table>
Dependent Variables - Health care service activities

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Number of sick call requests</td>
<td>interval</td>
</tr>
<tr>
<td>Number of mental health requests</td>
<td>interval</td>
</tr>
<tr>
<td>Number of medical requests</td>
<td>interval</td>
</tr>
<tr>
<td>Number of total services requests</td>
<td>interval</td>
</tr>
<tr>
<td>Groups of total services requests</td>
<td>interval</td>
</tr>
<tr>
<td>1 = 1 - 10</td>
<td></td>
</tr>
<tr>
<td>2 = 11 - 20</td>
<td></td>
</tr>
<tr>
<td>3 = 21 - 30</td>
<td></td>
</tr>
<tr>
<td>4 = 31 - 50</td>
<td></td>
</tr>
<tr>
<td>Number of total services requests per 365 days/inmate</td>
<td>interval</td>
</tr>
<tr>
<td>Groups of services requests per 365 days/inm.</td>
<td>interval</td>
</tr>
<tr>
<td>1 = 0 - 5</td>
<td></td>
</tr>
<tr>
<td>2 = 6 - 10</td>
<td></td>
</tr>
<tr>
<td>3 = 11 + &gt;</td>
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</tr>
<tr>
<td>Nursing utilization</td>
<td>interval</td>
</tr>
<tr>
<td>Psychologist utilization</td>
<td>interval</td>
</tr>
<tr>
<td>Mental health utilization</td>
<td>interval</td>
</tr>
<tr>
<td>Medical health utilization</td>
<td>interval</td>
</tr>
<tr>
<td>Total health services utilization</td>
<td>interval</td>
</tr>
<tr>
<td>Rate of total health services (requests &amp; utilizations) per 365 days/inmate</td>
<td>interval</td>
</tr>
<tr>
<td>Groups of total services per 365 days/inmate</td>
<td>interval</td>
</tr>
<tr>
<td>1 = 0 - 10</td>
<td></td>
</tr>
<tr>
<td>2 = 11 - 20</td>
<td></td>
</tr>
<tr>
<td>3 = 21 - 30</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


