


# The Impact of Prison Adjustment Among Women Offenders: A Taiwanese Perspective

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Yu-Shu Chen<sup>1</sup>, Yung-Lien Lai<sup>1</sup>,  
and Chien-Yang Lin<sup>1</sup>

## Abstract

Pre-prison experiences and environmental influences were examined to determine the effects of institutional misconduct and symptoms of depression related to adjustment in Taiwan's women's prisons. Using self-reported survey data derived from 883 Taiwanese female inmates, the findings suggest that pre-prison victimization, imprisonment stress, and social support from family members all had statistically significant effects on adjustment to life in prison. Although deviance prior to prison was highly related to institutional misconduct, reported illnesses also significantly increased the level of symptoms associated with depression. Lower levels of institutional misconduct were reported by women who committed drug offenses compared with their counterparts who committed violent offenses. The article concludes with insights from a comparative perspective and public policy implications.

## Keywords

women offenders, prison adjustment, institutional misconduct, depression, social support, comparative studies

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<sup>1</sup>Central Police University, Taoyuan County, Taiwan

## Corresponding Author:

Yung-Lien Lai, Department of Crime Prevention and Corrections, Central Police University, Taoyuan County, Taiwan 33304.  
Email: yxl005@mail.cpu.edu.tw

## Introduction

Although women have consistently represented less than 10% of all inmate populations throughout the world (United Nations Office on Drugs and Crime [UNODC], 2009), their rapid growth in Taiwanese prisons has generated much scholarly attention (Chen & Lin, 2010). Since 1999, for example, approximately 10% of all incarcerated offenders in Taiwan have been women (Ministry of Justice [MOJ], 2011). Over the past decade, however, their population has increased by 75%, compared with a 25% increase in the number of Taiwanese male prisoners reported during the same period (MOJ, 2011). Approximately 4,851 women prisoners are housed in Taiwanese correctional facilities. The female offender rate in 2010 was 230 per 100,000 population, a rate that has increased by 18% since 1996 (MOJ, 2011).

Following the “war on drugs” policy implemented in the United States during the 1980s, the Taiwanese government mandated a similar “get-tough-on-crime” antidrugs policy, namely, the *Statute for Narcotics Hazard Control* (SNHC), which took effect in 1998 (Lin & Lai, 2002). One result of this policy adoption has been that an increase in female offenders in Taiwanese jails and correctional facilities since its enactment. Among the newcomers to Taiwanese correctional facilities in 2010, for example, female abusers of drugs (i.e., amphetamine, ketamine, MDMA, LSD, marijuana, cocaine, and heroin) accounted for 43.1% of all offenders incarcerated for drug offenses. Other women were incarcerated for fraud (14.3%), theft (12.2%), public safety crimes (e.g., driving while intoxicated [DWI]), and counterfeiting (5.6%; MOJ, 2011). Notably, incarceration for drug offenses among female offenders has overwhelmingly been as a consequence of a first conviction over the past 5 years (MOJ, 2011). Although illegal sex workers represent the largest group among Hong Kong’s incarcerated women (Lee, 2007), drug abusers and drug-related offenders (e.g., possessing drugs while shoplifting, etc.) accounted for more than 50% of all women inmates in Taiwanese prisons (MOJ, 2011).<sup>1</sup> Women between the ages of 20 and 39 represented more than two thirds (67%) of the female prison population. More specifically, the group between the ages of 30 and 39 increased approximately 40% over the last 5 years, suggesting that many Taiwanese women in this age range are convicted and then reconvicted for drug offenses (MOJ, 2011).

Given the rising number and rates of female incarceration in Taiwan, it is important to research this rapidly growing offender population (Warren, Hurt, Loper, & Chauhan, 2004). In particular, their experiences leading to prison as well as the factors that affect their adjustment to incarceration are important topics to examine (Islam-Zwart & Vik, 2004; Thompson & Loper, 2005). The purposes of this study are threefold. First, we have applied the existing literature and theoretical models to an Asian sample to draw

comparison to the large body of Western research. Second, the concept of prison adjustment was drawn from relevant studies (e.g., Thompson & Loper, 2005) and was operationalized by original *behavioral* (institutional misconduct) and *emotional* (depression symptoms) indices, respectively. Next, the effects of pre-prison experience levels and immediate prison environmental influences upon prison adjustment among Taiwanese women were tested after controlling for their individual characteristics on entry into prison. Finally, comparative analyses, further discussion of findings, and implications for public policy are addressed in the concluding section.

## Literature Review

### *The Importance and Dimensions of Adjustment Related to Incarcerated Women*

Successful adjustment to prison generally increases the likelihood that rehabilitative opportunities can be realized, leading to a reduction in the risk of recidivism (Zamble & Porporino, 1990). Alternatively, researchers have found that some maladjustments or misbehaviors associated with incarcerated offenders are strongly related to the likelihood of recidivism (Bonta, Pang, & Wallace-Capretta, 1995). As the number of women offender increases, identifying how they adjust to prison life becomes increasingly important to the corrections practitioners charged with providing a better correctional institution environment in which rehabilitation can be achieved (Loper, 2002).

Adjustment refers to the process of modifying, adapting, or altering individual behaviors to bring them into conformity with new circumstances or cultural environments (Islam-Zwart & Vik, 2004; “Webster’s Encyclopedic Unabridged Dictionary,” 1996). Given that incarceration is a stressful experience that demands the dramatic modification of an individual’s basic life patterns and functioning, adjustment is critical (Harding & Zimmerman, 1989). Essentially, inmates’ adjustment to confinement has long been a central topic of interest among sociologists and psychologists (Jiang & Winfree, 2006; Slotboom, Kruttschnitt, Bijleveld, & Menting, 2011; Warren et al., 2004). The research conducted in this area has tended to focus on the process of adapting to the prison culture’s norms and values; the term most often used in this regard is “prisonization” (Clemmer, 1958, p. 299).

Although there is no precise definition in the existing literature regarding inmate adjustment to prison, the outward signs of behavioral and emotional/psychological adaptation consist primarily of the reduced incidence of *institutional misconduct* (i.e., rule violations and infractions) and avoidance of *depression symptoms* (e.g., anxiety, distress, psychological well-being, etc.). These are the dimensions of prison adaptation that are normally discussed

and examined by researchers (Hochstetler, Murphy, & Simons, 2004; Islam-Zwart & Vik, 2004; Jiang & Winfree, 2006; Lindquist & Lindquist, 1997; Thompson & Loper, 2005; Warren et al., 2004; Zamble, 1992). Institutional misconduct in prison management literature refers to inmates' antisocial behaviors (e.g., physical assaults, disobeying an order, possessing contraband, etc.) that have been viewed as major maladjustments featured in prison life (French & Gendreau, 2006).

The second aspect of adjustment to prison involves depression symptoms (Islam-Zwart & Vik, 2004). Incarcerated women typically have alarmingly high rates of psychiatric problems (e.g., exposure to trauma, anxiety, depression, distress, phobias, neurosis, self-mutilation, suicide, disturbing thoughts, and issues with family and friends; Heilbrun et al., 2008; Hochstetler et al., 2004; Kruttschnitt & Vuolo, 2007). In addition, women confined to prison have been shown to have a much higher incidence of mental problems (i.e., depression and distress) than their male counterparts and the general public (Heilbrun et al., 2008). For example, Covington (2007) indicated that 73% of the women in state-level prisons and 75% in local jails in the United States have exhibited symptoms of mental disorders; this high figure stands in contrast to 12% of women in the general population. Symptoms of psychological depression must be seen to represent one important manifestation of maladjustment to incarceration.

### *The Impact of Prison Maladjustment Among Incarcerated Women*

Existing research has shown that maladjustment outcomes are not randomly distributed among women prisoners (Lindquist & Lindquist, 1997; Slotboom et al., 2011; Thompson & Loper, 2005; Warren et al., 2004). Research on the impact of incarceration upon women indicates that it varies substantially across different types of women. Predictors of maladjustment can be separated into two principal categories: (a) attributes that inmates bring with them to prison (pre-incarceration experiences) and (b) inmates' experiences and activities during incarceration (environmental influences; Steiner & Wooldredge, 2009). In the next section, these types of predictors are discussed, and their associated demographic characteristics are identified.

#### *Pre-Incarceration Experiences*

*Deviance prior to prison.* Irwin and Cressey (1962) have argued convincingly that the prison is not a closed system, but instead is a place where offenders' pre-incarceration experiences dominate inmates' lives to a greater extent than

does the prison's environment (Kellar & Wang, 2005). For example, inmates who come from poor economic backgrounds bring their subcultural values to prison with them, including those related to deviant behaviors. Consequently, inmate misconduct is a direct continuation and extension of criminal careers, which, in turn, is the result of pre-incarceration experiences that are greatly influenced by social experiences (Jiang & Fisher-Giolando, 2002; Lahm, 2008; Steiner & Wooldredge, 2009). Although studies pertaining to deviance among female prisoners prior to incarceration and adjustment to prison life are virtually nonexistent, there is substantial evidence to support this association among male inmates (Cao, Zhao, & Van Dine, 1997). For example, Cunningham and Sorenson (2007) found that gang affiliation prior to prison had a significant impact on violent misconduct among males incarcerated in the Florida prison system. Unfortunately, only a limited amount of literature is available that addresses the impact of prior deviance on emotional adjustment among female inmates, thus suggesting that research studies along these lines are warranted.

*Pre-prison victimization.* Although literature emphasizing the impact of prison victimization on adjustment to prison life is quite abundant (Listwan, Colvin, Hanley, & Flannery, 2010), we found far less research on pre-prison victimization among women prisoners. While different research methodologies have resulted in widely varying estimates of prior victimization, there is general agreement that female prisoners often have endured physical and sexual abuse well beyond that of the general population (Bloom, Owen, & Covington, 2005; Steiner & Wooldredge, 2009; Wright, Salisbury, & Van Voorhis, 2007). For example, Warren et al. (2004) noted that 55% of female inmates reported a history of sexual or physical victimization before the age of 18. Due to impoverished backgrounds, however, most women who were victimized before their imprisonment had little opportunity to learn how to cope with their personal victimizations (Hochstetler et al., 2004). The lasting legacy of victimization in youth led to a higher level of prison maladjustment because of this deficit in coping skills suffered prior to incarceration (Slotboom et al., 2011). Kruttschnitt, Gartner, and Miller (2000) investigated both women offenders' prior victimization experiences and the prison environment's role in shaping one's adjustment to prison life. Their qualitative analysis revealed that individual pre-prison experiences played a major role in prison adaptation. In a more recent study, Steiner and Wooldredge (2009) found that a personal history of physical or sexual victimization prior to prison produced a significant impact on likelihood of perpetrating violence and/or engaging in institutional misconduct.

### *Prison Environmental Influences*

*Imprisonment stress.* In sociological studies, stress has been defined as “any environmental, social, or internal demand which requires the individual to readjust his or her usual behavioral patterns” (Holmes & Rahe, 1967, p. 213). For incarcerated offenders, many sources of stress originate from their immediate correctional facility environment. Goffman (1961) coined the term “total institutions” in referring to individuals placed in a closed, no-exit institution (e.g., jail, prison, and/or asylum). People who are confined in such institutional settings are likely to face more stress than they had ever before experienced. Similarly, Sykes (1958) identified five “pains of imprisonment” related to male inmates (deprivation of liberty, basic goods and services, heterosexual relationships, autonomy, and security) that were also confirmed by Giallombardo (1966) for female inmates (Lindquist & Lindquist, 1997).

In examining the relationship between imprisonment stress and adjustment to incarceration, Lindquist and Lindquist (1997) found that environmental stress led to a high level of mental distress for both male and female jail inmates. For example, they note that prison environmental stress produced high levels of distress on somatization, obsessive-compulsive disorder, depression, and anxiety among women offenders. Similarly, Fogel (1993) reported that high levels of initial stress upon entry to prison were correlated with high levels of depression during a 6-month in-custody follow-up assessment. In a later study, Kruttschnitt et al. (2000) reported that a stressful environment led to higher levels of depressive symptoms among incarcerated women in the Netherlands.

*Social support.* Social support creates a bond of trust between the giver and the receiver (Cohen & Wills, 1985). Regardless of the source, social support mechanisms can help inmates to satisfy their personal needs or adjust themselves with a degree of safety and security in the prison setting (Jiang & Winfree, 2006). Essentially, prosocial support or assistance mechanisms drawn from outside the prison may ameliorate a host of negative institutional forces or the “pains of imprisonment” as previously mentioned (Sykes, 1958). Subsequently, the negative effects of behavioral as well as psychological aspects may be reduced or mitigated (Jiang & Winfree, 2006; Listwan et al., 2010). For example, Paterline and Petersen (1999) found that inmates who perceive greater social support report lower levels of prisonization. Conversely, Biggam and Powers (1997) reported that inmates who perceive lower levels of support experience higher levels of anxiety, suggesting that the greater the levels of social support, the less likely inmates will suffer from posttraumatic cognitions and depression symptoms (Listwan et al., 2010). Of

particular note, Jiang and Winfree (2006) suggested in their comparison study that female inmates tend to experience more social support from their families than do their male counterparts.

*Illnesses.* Because the health status of prisoners is generally much poorer than that of the general public, women's health and medical issues can be seriously neglected in a male-dominated prison system (UNODC, 2009). In reality, female offenders suffer from chronic and complex diseases resulting from the experience of poverty, drug use, family violence, sexual assault, adolescent pregnancy, malnutrition, and poor health care (Acoca, 1998). Specifically, in studies involving incarcerated women, a variety of health problems were identified as commonplace, including sexually transmitted diseases, gynecological problems, obesity, dental problems, mental health issues, kidney infections, and chronic problems such as hepatitis, HIV, hypertension, emphysema, and asthma (Staton, Leukefeld, & Webster, 2003). In addition, diabetes, heart ailments, and hypertension were highly presented among female minorities (as cited by Acoca & Austin, 1996). Although research pertaining to the association between diseases and adjustment to prison is quite limited, there is reason to believe that health problems in prison affect women's adjustment levels, specifically their levels of depression (Kruttschnitt & Vuolo, 2007; Slotboom et al., 2011).

### **Other Factors**

While the existing literature yields somewhat mixed results with regard to influences on prison maladjustment, in this study, we use *age* (Gover, Pérez, & Jennings, 2008; Jiang & Winfree, 2006; Kruttschnitt & Vuolo, 2007; Lindquist & Lindquist, 1997; Thompson & Loper, 2005; Slotboom et al., 2011; Steiner & Wooldredge, 2009), *educational level* (Lindquist & Lindquist, 1997; Steiner & Wooldredge, 2009; Warren et al., 2004), *time served* (Steiner & Wooldredge, 2009; Thompson & Loper, 2005; Warren et al., 2004), *being married* (Thompson & Loper, 2005; Steiner & Wooldredge, 2009; Warren et al., 2004), *convicted offense* (Steiner & Wooldredge, 2009; Warren et al., 2004), and *having children* (Fogel, 1993; Gover et al., 2008; Steiner & Wooldredge, 2009; Warren et al., 2004) as control variables in our study analysis.

Although individual pre-prison experiences and prison environments play significant roles regarding maladjustment among inmates in Western societies (Steiner & Wooldredge, 2009), we attempted to apply these same concepts to the Taiwanese inmate context to explore which type of influence best predicts maladjustment among women in prisons. A comparative perspective based on conclusions taken from models pertaining to Western female inmates is tested in our study of Taiwanese female prisoners.

## Research Methods

### *Research Setting and Participants*

In 2010, 49 correctional facilities with more than 65,000 inmates (including juvenile offenders) have operated under the authority of Taiwan's Agency of Corrections (AOC; MOJ, 2012). Among these correctional facilities, 80% of female prisoners are incarcerated in either of three women's prisons, namely, *Kaohsiung* (1,267 beds), *Taichung* (1,040 beds), and *Taoyuan*<sup>2</sup> (1,024 beds). The rest of the women inmates are confined in 10 facilities that house men and women separately. The combined capacity of the women's prisons is 3,334 beds (MOJ, 2012).

Data collected between January and February 2010 represent a portion of "The etiology and treatment needs among women offenders" study sponsored by the Ministry of Justice running from 2009 to 2010. Taking into consideration the large female inmate population, the limited time frame, limited budget, and cost constraints, a total of 888 self-reported questionnaires were distributed by stratified random sampling to the three individual women prisons and 10 other gender-separated prisons or jails.<sup>3</sup> In addition, women inmates who entered the facilities less than 2.5 months prior to distributing the survey were not permitted to participate in this study given that they were still undergoing the systematic classification process.

### *Research Procedures*

After receiving permission from prison and jail authorities, a research team consisting of two professors and two or three trained graduate students traveled to each facility during the survey period to conduct face-to-face interviews. Prior to distributing the printed survey questionnaires to inmates, the research team secured commitments from correctional facility administrators to arrange for a comfortable research setting (e.g., counseling room, chamber, classroom, workshop, etc.). In addition, no correctional officials were allowed to enter or walk around the research setting while the survey was being conducted. All inmates who were available during the sampling process were approached and asked to complete an anonymous questionnaire. At this time, the purpose of our project was explained, the right to refuse participation was articulated, and the promise of protection personal information was made. Subsequently, the research team distributed self-report questionnaires containing an enclosed notice letter guaranteeing further in written form that all respondents would remain anonymous. As respondents completed the questionnaires, only the research team remained with them on the scene to answer any questions or address any concerns they may have had. Inmates agreeing to



participate in the survey were verbally informed that they were free to discontinue if they felt that they were unable to complete the questionnaire and were also asked to not discuss the questions on the survey with other inmates. Of note, inmates were asked to take their time in filling out the questionnaire and were further advised that the surveys would be collected by the research team in approximately 1 hr after their initial distribution. After an hour had elapsed, the questionnaires were collected; a few respondents who had not finished were given a bit of extra time to complete the survey questionnaire.

Immediately after all surveys were completed, the research team gathered and inspected each survey individually. In the event that void, defaced, or incomplete questionnaires appeared, they were disregarded and an alternative method of collection was used—specifically, other inmates were randomly selected to replace any respondent quotas that were not met. This procedure was followed in all prisons and jails. Through this tightened safeguard process, 888 respondents were approached; of these, 883 had completed and returned their questionnaires for a response rate of 99%.

### Dependent Variables

In our current study, *female inmates' adjustment* to incarceration was broken down into two distinct dimensions: *institutional misconduct* and *depression symptoms*. The *institutional misconduct* dependent variable consisted of items such as “violating visiting and corresponding regulations,” “possessing contraband,” “fighting with/assaulting other inmates,” “fighting with/assaulting staff members,” and “other violations” over 3 months prior to the survey. Response categories ranged on a continuum scale from 1 (never), 2 (one time), 3 (two times), 4 (three and more than three times) that were calculated as the sum of scores on five items, divided by five. A higher score on the scale indicated that the respondent would be more likely to report institutional misconduct. The mean score of this scale was 1.20, with a standard deviation of 0.33 and the Cronbach's alpha of 0.53 with an eigenvalue of 2.01. This variable featured considerable positive skewness, and consequently was treated as a dummy variable in later multivariate analysis (“never” was recoded as 0 and “have had disciplinary experiences” was recoded as 1).

A six-item scale was created to capture the respondents' emotional adjustment—*depression symptoms*—over 3 months prior to the survey. The scale items included “I feel frustrated,” “I feel fatigued,” “I feel blue,” “I feel lonely,” “I feel sorrow,” and “I feel hopeless.” Response categories ranged on a continuum ranging from 1 = *not a bit* to 4 = *all the time*. The scale was calculated as the sum of scores on six items, divided by six; a higher score indicated that the respondent reported more depressive symptoms over the 3

months prior to the survey. The mean score was 2.24 with a standard deviation of 0.77, and the Cronbach's alpha was 0.90 with an eigenvalue of 4.04.

### Independent Variables

Five scales that represented independent variables were created to predict Taiwanese women prisoners' adjustment to incarceration: (a) *deviance prior to prison*, (b) *pre-prison victimization*, (c) *imprisonment stress*, (d) *social support*, and (e) *illnesses at interview*. A 7-item scale was created to assess each participant's *deviant behaviors prior to prison* by asking questions pertaining to "gambling," "drug charges," "driving while intoxicated," "simple assault in public," "traffic citation," "thief/larceny," and "prostitution." Responses were recorded on a continuum scale ranging from 1 (*never*) to 6 (*five times and above*). A higher score indicated that the respondent reported a sizable number of deviant behaviors prior to incarceration. The mean score was 2.18 with a standard deviation of 0.96, and the Cronbach's alpha was 0.62 with an eigenvalue of 3.30.

A five-item scale measured a female inmate's *pre-prison victimization* experiences based on the following statements: "I had been beaten or assaulted by my family members (i.e., parents and/or siblings)," "I had been beaten and assaulted by my husband/cohabitant," "I had been beaten and assaulted by strangers," "I had been kidnapped," and "I had been sexually touched in the genitalia, sexually harassed, or raped." Responses were recorded on a continuum scale ranging from 1 = *zero times* to 6 = *five or more times*. The scale was calculated as the sum of scores on five items divided by five. A higher score indicated that the respondent was more likely to report physical victimization experiences before being incarcerated. The mean score was 1.68 with a standard deviation of 0.79, and the Cronbach's alpha was 0.80 with an eigenvalue of 2.01.

A six-item scale was created to examine the female offender's actual perception of *imprisonment stress* by responding to the following statements: "I have been thinking that cells and workshops are crowded," "I have been thinking that the food and meals are poor," "I have been thinking that the environment is too hot," "I have been thinking that life is too tight and busy," "I have been thinking that my workload is very heavy," and "I feel pressure about parole conditions." Responses were recorded on a continuum scale ranging from 1 = *not at all* to 4 = *all the time*; the scale was calculated as the sum of scores on six items divided by six. A higher score indicated that the respondent perceived a greater amount of *imprisonment stress*. The mean score was 2.28 with a standard deviation of 0.77, and the Cronbach's alpha was 0.74 with an eigenvalue of 2.61.

A six-item scale measured the female offender's *social support* from family members while incarcerated by responding to the following statements: "They listen to me while visiting or writing to me," "They console and encourage me while visiting or writing to me," "They do care about my life and performance in prison," "They provide some helpful and useful opinions while visiting or writing to me," "They bring food and articles for daily use to me when they visit me," and "They deposit money (such as checks or money orders) in my prison account for daily use." Responses were recorded on a continuum scale ranging from 1 = *never* to 5 = *very often*. The scale was calculated as the sum of scores on six items divided by six. A higher score indicated that the respondent would be more likely to report whether or not she received additional social support from family members while incarcerated. The mean score was 4.47 with a standard deviation of 0.92, and the Cronbach's alpha was 0.94 with an eigenvalue of 4.74. However, this variable featured negative skewness and has been subjected to square root transformation to address the problem accordingly (Mertler & Vannatta, 2005).

Finally, each participant was asked to respond to the following statement with respect to *illnesses at interview*: "Please report any medical problems that you currently have." Fourteen items were provided as response categories from which to choose (cancer, diabetes, hyperthyroidism, HIV, urinary system problem, mental illness, B type hepatitis, C type hepatitis, heart problems, gynecological disease, skin disease, accident injury, dentistry disease, and other). The illnesses at interview scale represent the sum of items checked on the 14-item checklist. The mean score was 1.62 with a standard deviation of 1.60.

In addition, six demographic variables were included in the analysis as control variables. The respondent's *age at interview* was measured by an ordinal variable ranging from 1 = *18 to 29 years* to 5 = *60 to 69 years*; *educational attainment* was also measured by an ordinal variable ranging from 1 = *junior high school and below* to 3 = *some college or more*; *time served in prison* was measured by an ordinal variable ranging from 1 = *less than 1 year* to 4 = *more than 3 years*; *marital status upon entry to prison* was measured by four categories: (a) never married/single, (b) married/widowed, (c) divorced/separated, and (d) remarried/cohabitant in which married/widowed was treated as a reference group in the final multivariate analysis. *Offense committed* was also measured by four response categories: (a) drug offense—use only; (b) drug-related offense—holding, transporting, dealing, and producing; (c) property crime or fraud and theft; and (d) violent crime or murder. Notably, *convicted offense* was recoded in the final multivariate regressions as three new categories: (a) drug offender (combining drug offense and drug-related offense), (b) property offender, and (c) violent offender in which *violent offender* was treated as a reference group. Finally, *have children* was

measured as a binary variable where 1 = *reported having at least one child* and 0 = *no children*.

## Results

### *Descriptive Statistics*

Respondents' descriptive statistics are presented in Table 1. As shown, approximately 70% of the incarcerated Taiwanese women reported being 39 years of age or younger, a distribution that was consistent with Taiwan's female prisoner population (MOJ, 2011). In terms of educational attainment, 50.7% ( $n = 448$ ) of the participants reported senior high school as being their highest educational level attained. With reference to time served in prison, 39.9% ( $n = 352$ ) indicated that they had served less than 1 year of their sentence. More than 30% of the participants reported their marital status as either divorced or separated on entry into prison, followed by never married/single (29.1%) and married/widowed (24.9%). Involvement in drug-related offenses was reported by 59.4% ( $n = 512$ ) of the respondents, thus suggesting that drug offenders were somewhat overrepresented in our study. With respect to children, only 5.1% of the participants reported that they had at least one child.

### *Multivariate Analyses*

Before presenting the multivariate analysis, multicollinearity is an issue that must be addressed. Although not a perfect method for examining multicollinearity, variance inflation factors (VIFs) were computed by regressing each independent variable on other variables in the model. Many researchers consider this to be a good indicator of the problem (Tabachnick & Fidell, 1996). In our study, a correlation check indicated that property offender and drug-related offender<sup>4</sup> were highly correlated ( $r > .7$ ). Entering both variables in the same model resulted in multicollinearity examinations that indicated that the VIF scores were 2.3, or suggesting that the score was lower than the tolerance statistic value of 4. Given that all VIF scores in our study were below 4, multicollinearity was not considered to be a serious problem.

Two regression models were used in our multivariate analysis—namely, binary logistic regression and ordinary least squares (OLS) regression. First, descriptive statistics revealed that approximately 531 respondents (60.1%) reported they had never been disciplined and 352 (39.9%) reported that they had at least one disciplinary incident on their record prior to our survey. This suggests that the binary logistic regression was used appropriately. Second, an OLS regression model was used to identify the effects of the independent

**Table 1.** Descriptive Statistics for Variables (N = 883).

Variables	Minimum	Maximum	M	SD	Frequency (%)
<b>Dependent variables</b>					
Institutional misconduct	1.00	4.00	1.20	0.33	0 time = 531 (60.1) 1-5 times = 352 (39.9)
Depression symptoms	1.00	4.00	2.24	0.77	
<b>Independent variables</b>					
<b>Pre-prison experience variables</b>					
Deviance prior to prison	1.00	6.00	2.18	0.96	
Pre-prison victimization	1.00	6.00	1.68	0.79	
<b>Environmental variables</b>					
Imprisonment stress	1.00	4.00	2.28	0.77	
Social support	1.00	5.00	4.47	0.92	
Illnesses at interview	0.00	8.00	1.62	1.60	
<b>Control variables</b>					
Age	1.00	5.00	2.20	0.94	18-29 years = 194 (22.0) 30-39 years = 420 (47.6) 40-49 years = 173 (19.6) 50-59 years = 75 (8.5) 60-69 years = 16 (1.8)
Education	1.00	3.00	1.69	0.63	Junior high = 352 (39.9) Senior high = 448 (50.7) Some college or more = 82 (9.3)
Time served in prison	1.00	4.00	2.12	1.13	Less than 1 year = 350 (39.6) 1 to 2 years = 232 (26.3) 2 to 3 years = 126 (14.3) More than 3 years = 164 (18.6)
Marital status at admission	0.00	1.00	0.25	0.43	Never married = 257 (29.1) Married/widowed = 217 (24.9) Divorced/separated = 271 (30.7) Remarried/cohabitant = 138 (15.6)
Convicted offense	1.00	4.00	2.28	0.82	Drug offense = 105 (12.2) Drug-related offense = 512 (59.4) Property crime = 145 (16.8) Violent crime = 100 (11.6)
Have children	0.00	1.00	0.05	0.22	No = 838 (94.9) Yes = 45 (5.1)

**Table 2.** Regression Coefficients for Determining Female Inmates' Adjustment ( $N = 883$ ).

Independent variables	Institutional misconduct (Model 1) <sup>a</sup>			Depression symptoms (Model 2) <sup>b</sup>		
	<i>B</i>	<i>SE</i>	Exp ( <i>B</i> )	<i>B</i>	<i>SE</i>	$\beta$
Intercept	-0.962	.644	0.382	1.419	.201***	
Deviance prior to prison	0.272	.098	1.313**	-0.007	.031	-.009
Pre-prison victimization	0.284	.110	1.329**	0.148	.034	.154***
Imprisonment stress	0.407	.105	1.503***	0.365	.032	.365***
Social support	-0.233	.086	0.792**	-0.099	.027	-.117***
Illnesses at interview	0.077	.050	1.080	0.053	.016	.113**
Age	-0.109	.097	0.896	-0.017	.030	-.020
Educational level	-0.073	.128	0.929	0.036	.040	.030
Time served in prison	0.074	.071	1.077	0.038	.022	.058
Single/never married(1) <sup>c</sup>	0.637	.222	1.890**	-0.033	.068	-.020
Divorced/separated(1) <sup>c</sup>	0.351	.215	1.421	-0.012	.064	-.007
Remarried/cohabitant(1) <sup>c</sup>	0.067	.262	1.069	-0.030	.079	-.014
Drug-offender(1) <sup>d</sup>	-0.861	.251	0.423***	0.015	.079	.009
Property-offender(1) <sup>d</sup>	-0.602	.313	0.712	0.079	.098	.039
Have children	-0.340	.353	0.382	-0.062	.106	-.018
	$\chi^2 = 100.99***$			$F = 17.15***$		
	Nagelkerke $R^2 = .156$			$R^2 = .230$		

<sup>a</sup>Represents the first column as the outcomes of binary logistic regression.

<sup>b</sup>Represents the second column as the outcomes of OLS regression.

<sup>c</sup>Signifies that the reference group is married/widowed.

<sup>d</sup>Denotes that the reference group is a violent offender.

\*Statistical difference at  $p < .05$ . \*\*Statistical difference at  $p < .01$ . \*\*\*Statistical difference at  $p < .001$ .

variables pertaining to the women's depression symptoms while incarcerated. Results from the two models are displayed in Table 2.

Model 1 represents the logistic regression of institutional misconduct on all independent variables. Among the pre-incarceration experience variables, deviance prior to prison and pre-prison victimization had a statistically positive effect on women's prison misconduct. Female offenders who exhibited more deviant behaviors and victimization experiences tended to report higher levels of institutional misconduct,  $\text{Exp}(B) = 1.313$  and  $1.329$ , respectively. In terms of environmental variables, imprisonment stress and social support produced a statistically significant association relating to female inmates' misconduct behaviors,  $\text{Exp}(B) = 1.503$  and  $0.792$ , respectively. Although participants who perceived a severe level of imprisonment stress were more likely to report higher levels of misconduct, the frequency of social support

from family reduced their levels of misconduct. Among the control variables, single/never married and drug offender were significantly related to institutional misconduct,  $\text{Exp}(B) = 1.890$  and  $0.423$ , respectively. Compared with the married/widowed group, being a single/unmarried offender increased the odds of becoming a misconduct inmate by 89%—that is,  $(1.890 - 1) \times 100\%$  (Menard, 2001). In addition, being a drug offender decreased the odds of becoming a disciplined inmate by 58%—that is,  $(1 - 0.423) \times 100\%$ —while holding all other variables constant. Finally, approximately 16% of the variance observed on the institutional misconduct scale was accounted for by all variables based on the Nagelkerke  $R^2$  coefficient.

In Model 2, the results of all multivariate variables regressed on depression symptoms are presented. Among the pre-incarceration experience variables only pre-prison victimization had a statistically significant effect on women's depression ( $\beta = .154$ ), indicating that women who had victimization experiences before incarceration tended to report high levels of depression. In terms of environmental variables, all three variables—imprisonment stress, social support, and illnesses at interview—were significantly related to depression symptoms ( $\beta_s = .365, -.117, \text{ and } .113$ , respectively). Although the imprisonment stress and illnesses at interview variables increased the levels of female inmates' depression, the frequency of social family support reduced the degree of depressive symptoms. In terms of the magnitude of impact, imprisonment stress was the most robust factor, followed by pre-prison victimization and social support, respectively. Of interest to note, none of the control variables produced a significant association with depression. Finally, based on the  $R^2$  statistic, approximately 23% of the variance observed in the depression symptoms scale was accounted for by all the variables shown in Model 2. In particular, three variables—pre-prison victimization, imprisonment stress, and social support—consistently produced a significant impact on women prisoners' adjustment across the two domains of institutional misconduct and depression symptoms.

## Conclusion

### Discussion

The rapid increase in the number of women serving prison sentences across advanced Western countries has caught the attention of numerous scholars, practitioners, and policy makers (Slotboom et al., 2011). In particular, prison adjustment among Taiwanese women was investigated in our study by assessing the degree to which institutional misconduct and depression symptoms might be explained before and after prison experiences. As a result, three important observations were brought to light.

Although there is no agreed-upon definition of prison adjustment among scholars and practitioners, the term can be thought of as featuring both behavioral and emotional/psychological dimensions (Islam-Zwart & Vik, 2004; Thompson & Loper, 2005; Warren et al., 2004). Deviance prior to prison and committing a violent offense were found to be highly related to institutional misconduct among Taiwanese women; however, neither factor produced a significant association with depression symptoms. The illnesses at interview variable predicted women prisoners' levels of depression; however, this variable was not a significant predictor of institutional misconduct.

Consistent with previous studies, pre-prison victimization (e.g., Islam-Zwart & Vik, 2004; Warren et al., 2004), imprisonment stress (e.g., Fogel, 1993; Lindquist & Lindquist, 1997), and social support (e.g., Jiang & Winfree, 2006; Listwan et al., 2010) were found to have a strong effect on adjustment to prison across both the institutional misconduct and depression symptoms measures. As Goffman (1961) noted, women offenders who are placed in closed-exit institutions are more likely to face severe stress. More especially, women who had often experienced pre-prison victimization sensed high levels of prison stress and often noted low levels of family attachment; this combination tended to increase their risks of institutional misconduct and psychological maladjustment substantially (Slotboom et al., 2011). Our primary findings were consistent with prior studies, suggesting that explanatory factors and models developed in Western countries can also be applied to other countries such as Taiwan despite the fact that culture and history are very different from those in the Western societies.

Finally, demographic factors were found to be somewhat weak in predicting prison adjustment (Slotboom et al., 2011). In the case of single/never married and violent offenders, they were more likely than other women inmates to report high levels of prison misconduct. In this connection, Warren et al. (2004) used a cohort comprised of 777 maximum-security female inmates and found that those who were married while incarcerated for a non-violent offense were relatively less likely to engage in self-reported institutional misconduct. Similarly, Fogel (1993) noted that being married was associated with better adjustment to prison, thus suggesting that marriage may reflect a type of interpersonal capacity that helps to handle conflicts with correctional staff and other inmates more effectively. In addition, there is evidence to indicate that from a correctional perspective incarcerated women may be particularly prone to develop conflicts with both staff and inmates (Slotboom et al., 2011). Conversely, drug abusers are typically inmates who tend to withdraw and be less likely to engage in institutional misconduct (Carlson, Shafer, & Duffee, 2010).



## *Policy Implications*

Loper (2002) noted that successful adjustment to prison among women tends to reduce the probability of recidivism. It follows that corrections administrators and practitioners are charged with providing the best environment in which incarcerated women can readjust. In view of our findings, four specific policy implications are offered.

First, while more opportunities for targeted interventions should be developed generally, managers of correctional facilities for women have recommended that greater gender-specific rehabilitative and treatment programs aimed at female offenders be introduced (Heilbrun et al., 2008; International Centre for Prison Studies [ICPS], 2008). In fact, a number of women's prison intervention programs have been initiated in Switzerland, Germany, and the United States in recent years (ICPS, 2008). For example, an on-site program developed and implemented in New York's correctional facilities for women survivors of family violence should be introduced into Taiwanese women's prisons. The comprehensive program includes educational activities, support groups, and individual counseling. Specifically, small groups address issues pertaining to survivors of child abuse, child sexual abuse/incest, and partner violence as well as survivors of women who either killed their adult partners or committed child-related crimes (Browne, Miller, & Maguin, 1999). In an evaluation of New York's correctional program, Canestrini (1994) concluded that those small-group treatments decreased levels of prison maladjustment in prison and subsequently resulted in reduced recidivism rates.

Second, our findings revealed that imprisonment stress significantly affects the two dimensions of adjustment among female offenders—institutional misconduct and depression symptoms. According to Heilbrun et al. (2008), the Women's Prison Association in the United States recommended that positive coping strategies, healthy social networks, and access to educational and vocational opportunities should be included in gender-specific rehabilitative treatment to ease tensions between staff and among inmates. Specifically, more attention could be focused upon program activities as opposed to the "pains of imprisonment." For example, Benda (2005) noted that females are often more socially oriented than men and thus derive constructive motivation from social relationships. As such, McClellan, Farabee, and Crouch (1997) and Greene and Pranis (2006) suggested that incarcerated women are likely to benefit from prison treatment programming that incorporates positive relationships and encouragement that may possibly lead to a well-adjusted prison life as well as economic independence and reintegration into the community after release.

Third, correctional authorities should exert extra effort to ensure that incarcerated women preserve their family ties (UNODC, 2009). In our study, the factor of social family support was found to reduce levels of prison maladjustment significantly; hence, correctional authorities should be encouraged to help maintain, facilitate, and promote healthy inmate–family relationships that include regular visits. In addition, well-developed telephone access policies, conjugal visiting programs, and furloughs should be expanded to include more women prisoners (Chen & Lin, 2010).

Fourth, deviant behaviors and violent offenses prior to incarceration increase women's levels of institutional misconduct. It follows that deviant or assault histories should be assessed at intake, high-risk inmates should be identified, and specific treatments be assigned accordingly (Wright et al., 2007). For example, women who have a history of violent tendencies should be encouraged or perhaps required to participate in emotional or anger management programs to cope more effectively with their behavioral problems. Moreover, prison adjustment levels should be periodically monitored to ensure that appropriate interventions and programs are available for indigent females (Islam-Zwart & Vik, 2004).

### *Limitations*

First, we focused on incarcerated female offenders to the exclusion of male offenders; we do not know the extent to which our findings would apply to their male counterparts. In addition, previous researchers have suggested that peer interaction and an association between inmates and staff can contribute to levels of social support (e.g., Jiang & Winfree, 2006). Unfortunately, these two factors were not analyzed in this study. Finally, future researchers should use a multilevel analysis that includes an aggregate level independent variable (i.e., institutional crowding rate) used to strengthen the explanatory power of the analysis.

Overall, we successfully conducted a study that included a comparative approach to prison adjustment from the perspective of Taiwanese women offenders. Our study provided evidence that women offenders' prior lives as well as their prison environment make a difference in shaping their adjustment to incarceration among Taiwanese women in the same way they do for women doing time in correctional facilities in the West.

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## Notes

1. While Hong Kong and Taiwan are two democratic Chinese societies located off the southeastern coast of mainland China, the composition of women in their correctional systems is quite different. Due to Hong Kong's economic prosperity since its reversion to mainland China in 1997, a rapid and dramatic increase in the number of visitors to mainland China has been witnessed, including women who cross the border to engage in sex work. Many of these Chinese women violated migration control laws and were sentenced to prison (Lee, 2007). By contrast, many Taiwanese women currently suffer a harsh life due in good measure to sexist stereotypes and a prolonged economic recession. The sex industry is not prominent in Taiwan, and few female migrants in Taiwan engage in illicit promiscuous behaviors. In 2009, for example, the 986 sex workers who were prosecuted accounted for only 2.94% of Taiwanese women's prison population (Chen & Lin, 2010). However, various drugs such as heroin have been smuggled into Taiwan in substantial volume over the past decade from mainland China, Thailand, and Vietnam (Ministry of Justice, Investigation Bureau [MOJIB], 2011). Taiwanese gangsters have dispersed these illegal drugs to many girls and young women in schools, at clubs, in cybercafés, and so forth (Yang & Lee, 2012).
2. The three women's prisons are very similar in design and operation. For example, while the Taoyuan women's prison houses women who came from the north part of Taiwan Island, women offenders who came from the central part of this island were sentenced to Taichung women's prison. In other words, the three security levels (i.e., low/medium/high) of women are housed simultaneously in a women's prison.
3. Similar to correctional systems in the United States, jails in Taiwan also house short-term inmates that include both males and females (Ministry of Justice [MOJ], 2012).
4. Using correlation analysis and OLS regression analysis, drug offenses and drug-related offenses were combined as a predictor; a dummy variable was labeled drug offender.

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### Author Biographies

**Yu-Shu Chen**, PhD, is an associate professor, Department of Crime Prevention and Corrections, Central Police University, Taiwan. Her research interests include criminological theory, legal sociology, correctional clients, drug-related issues, and research methods. Her recent work has appeared in *Journal of Crime Preventions and Corrections*, *Law Enforcement Review*, *Police Science Bimonthly*, and *Crime and Criminal Justice International* in Taiwan.

**Yung-Lien Lai**, PhD, is an assistant professor, Department of Crime Prevention and Corrections, Central Police University, Taiwan. His research interests include comparative correctional systems and inmate misconduct. His recent publications have appeared in *Justice Quarterly*, *Journal of Criminal Justice*, *Journal of Crime and Justice*, and *International Journal of Comparative and Applied Criminal Justice*.

**Chien-Yang Lin**, PhD, is a professor, Department of Crime Prevention and Corrections at Central Police University, Taiwan. His research interests include penology, Taiwanese correctional issues, drug-related issues, and criminal justice policies. He also authored and coauthored several books related to correctional management and drug abuse issues. His recent work has appeared in *Journal of Crime Preventions and Corrections* and *Police Science Bimonthly* in Taiwan.