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Psychosocial and criminological factors related to recidivism among Japanese criminals at offender rehabilitation facilities

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Abstract: The present study aimed to investigate the relationships between psychosocial and criminological factors and recidivism (the number of re-imprisonment) among male Japanese offenders. The sample included 96 residents of offender rehabilitation facilities who ranged in age from 26 to 88. The mean age of the participants was 50.49 years old. The participants completed the Japanese Criminal Thinking Inventory, the Buss-Perry Aggression Questionnaire, the sense of coherence (SOC) scale, socioeconomic and criminological questionnaires. Univariate and multi-ple logistic regression analyses were conducted. Having committed theft or drug-related crime and one of the SOC subcategories, manageability, significantly and independently related to the tendency of repeat offenses. Providing practical interventions by level of manageability will mitigate recidivism risk and help offenders reenter society.

Subjects: Social Sciences; Criminology and Criminal Justice; Behavioral Sciences; Psychological Science; Mental Health; Health and Social Care

ABOUT THE AUTHOR

Kaori Kishi, PhD, is a clinical psychologist in Japan. She studied Psychology and Criminology in the United States and has been working with adult offenders/ex-offenders, especially with those suffering from addiction, in both psychiatric and criminal justice fields after returning to Japan. She conducts research on the nature and dynamics of crimes and offender rehabilitation. The research reported in this paper relates to the major issue facing the Japanese criminal justice. Since many readers are unfamiliar with the Japanese system and Japanese offender rehabilitation facilities, the research will help them develop a better understanding of the factors that affect post-release success and failure in Japanese ex-offenders.

PUBLIC INTEREST STATEMENT

Offender reentry into society is a long-term journey, one that actually begins prior to prison release and continues well afterwards. Desistance cannot be accomplished with determination alone; it entails continuing one's life without criminal conduct. This study aimed to investigate the relationships between psychological, socioeconomic, and criminological (the latest offense charge) factors and recidivism among male Japanese offenders at halfway houses. The result revealed that having committed theft or stimulant use and the sense of manageability (the perception that general and social resources are at one's disposal to accurately meet the demands) were significantly and independently related to the tendency to reenter prison. The research thus suggests that providing practical interventions geared to individuals' levels of manageability will mitigate recidivism risk and help offenders reenter society. The findings of this study will ultimately benefit society by moving toward real security through proven strategies against recidivism.

Keywords: recidivism; sense of coherence; drug offenders; theft; Japanese offenders; offender rehabilitation

Although Japan prides itself on its very low crime rate over the past 10 years compared to Western countries, the recidivism rate in recent years offers a glimpse into a fundamental problem in maintaining the security of the nation. The recidivism rate has been rising consistently since 1997 and recently reached 48.0%. The rate of re-imprisoned inmates has also remained elevated for the past decade and was 59.4% in 2016. These rates include both repeat offenders who have committed the same type of offense and those who have committed different types of offenses. Notably, those with previous convictions for the same type of offense represented 52.2% of all perpetual adult offenders (Japanese Ministry of Justice, 2014, 2017). A criminological feature of recidivism in Japan is that two types of crimes, property and drug crimes, have long been identified as a significant risk factor for reoffending. Theft and stimulant offenders, especially stimulant users, are more likely to be reincarcerated within 5 years than other types of offenders regardless of the reasons for release (i.e. parole or the completion of a prison term). As for thefts, the most recent data indicates that the recidivism rate has been rising over the past decade and is currently 48.0%. Among those with previous convictions for the same type of offense, stimulant offenders account for 65.4% (Japanese Ministry of Justice, 2014, 2017). Stimulant offenders are defined as trafficking, possession, manufacturing, dealing, and use of stimulants. Stimulant users account for a substantial fraction of this statistic.

Like its counterparts in other developed nations, the Japanese Ministry of Justice has been trying to prevent recidivism through both institutional and community-based treatment for offenders. Nearly 20% of discharged inmates enter offender rehabilitation facilities, one method of community-based treatment, while approximately 50% of them return to their families, spouses, or relatives. The other 30% return to acquaintances, employers, or welfare institutions (Japanese Ministry of Justice, 2015). Those who complete prison terms or experience frequent re-imprisonment are less likely to return to their families and tend to have no fixed residence or become homeless after their release, whereas those who return to their families tend to hold steady jobs and avoid reoffending (Japanese Ministry of Justice, 2009). While young offenders tend to return to their parents' homes, middle-aged offenders are more inclined to move into facilities because of estrangement from their families and others they can rely on. Since parolees are required to have a place to return to as a condition of their parole, offender rehabilitation facilities or halfway houses play the critical role of being a safety net for offenders and ex-offenders as well as being a bridge between penal institutionalization and social integration. In contrast to offenders who tend to hold steady jobs and avoid recidivism thanks to support from their family, those who have no places to return are likely to reoffend. Hence, residents of halfway houses are situated at the very center of the risk spectrum for recidivism.

As of 2018, 103 private sector offender rehabilitation facilities existed in Japan, and approximately 2,300 offenders/ex-offenders were temporarily residing there. The facilities consist of 89 facilities for men, 7 facilities for women, and 7 facilities for both men and women (Japanese Ministry of Justice, 2017). The primary and fundamental aim of offender rehabilitation facilities is to prevent recidivism. Receiving commissions from probation offices, private sector halfway houses provide accommodations, life skill guidance, and vocational training to parolees, probationers, or released inmates requiring urgent aid to help them become self-sufficient as quickly as possible. Since their main purpose is to support offenders' and ex-offenders' social and vocational independence to prevent future recidivism, those who are willing to work and do not have serious health or mental problems are likely to be allowed to enter such facilities. A majority of the residents are required to find jobs and achieve economic independence. Thanks to extensive job assistance from staff members, "Hello Work" (the public employment security office in Japan), and cooperating employers (those who willingly offer jobs to offenders), residents can secure stable incomes during

their stay. However, even with support from offender rehabilitation services, a certain number of residents still fall through the cracks and reoffend due to socioeconomic and psychological factors.

Research on offenders or ex-offenders at offender rehabilitation facilities may afford the key to prevent recidivism and social integration. However, such studies have been historically unexplored domestically and internationally because it is extraordinarily difficult to request the traditional field of offender rehabilitation, especially offender rehabilitation facilities, for cooperation toward research on criminal desistance. Consequently, few researchers have conducted qualitative and quantitative studies regarding social rehabilitation of Japanese repeat offenders at halfway houses. For example, Kirihara (2014) compared general adults and ex-inmates at halfway houses and found that the latter tend to be isolated from society due to lack of human relations, insufficient social supports, and failure to adopt to new job environment. Konagai (2013) reported that a half of former inmates on parole/probation lacked awareness of their own risk factors for repeat offenses. This study focuses on repeat offenders as well as residents at halfway houses in Japan to compensate for the lack of empirical research on desistance in Japanese criminal population.

Numerous social and economic disadvantages have been identified as predictors of recidivism; those who are unmarried (Collins, 2010), unemployed (Nally, Lockwood, Ho, & Knutson, 2014), younger (Bonta, Law, & Hanson, 1998), and have poor educational attainment (Nally, Lockwood, Ho, & Knutson, 2012) are more likely to reoffend. In Japan as well, ex-offenders who are unemployed and have no place to go after their release are more likely to reengage in crime (Japanese Ministry of Justice, 2014). Based upon their meta-analysis, Andrews, Bonta, and Wormith (2006) identified the major risk factors of recidivism, including poor family/marital relationships, poor performance at school/work, and lack of recreational activities.

Additionally, criminological research has long investigated the extent to which psychological factors are associated with criminal reengagement. Current criminology theory states antisocial cognition, personality, criminal associates, and developmental history to be the “big four” risk factors; the first two aforementioned variables are underscored to make independent contributions to criminal behavior (Andrews et al., 2006). One of the notable propensities of offenders is antisocial or distorted cognition. It is also known as an antisocial thought pattern including self-justificatory thinking, displacement of blame, and deficient moral reasoning (Beck, 1999; Lipsey, Landenberger, & Wilson, 2007). These cognitive thinking errors have shown to be associated with criminal history and reinforce criminal lifestyle (Walters, 1995). A core feature of antisocial cognition is criminal thinking with thoughts and cognitive processes conducive to the launch and continuation of persistent antisocial and criminal behavior (Walters, 2006). Criminal thinking includes attitudes and beliefs to rationalize and justify criminal behavior. Previous research on criminal thinking reported a link between criminal thinking and criminal history and predicted recidivism (Walters, 1995, 2012).

Furthermore, the contemporary model of aggression suggests that distorted cognition correlates with aggressive behavior: individuals with a propensity for aggression are inclined to hold elaborate and readily accessible aggression-related cognition (Anderson et al., 2002). As aggression has been linked with criminal thinking (Kishi et al., 2015), repeated, premeditated aggressive behavior also serves to increase the likelihood of a subsequent offense (Mooney & Daffern, 2015; Swogger, Walsh, Christie, Priddy, & Conner, 2014). Japanese repeat homicide offenders are characterized as individuals lacking an ability to establish stable relationships, are isolated from society, and hold negative emotions with aggression and emotional outburst (Japanese Ministry of Justice, 2007).

For offenders, attempting to reenter society and avoid reoffending are formidable challenges and a major source of stress. Ex-offenders who can successfully overcome this challenge are presumed to possess unique qualities that may help them tolerate this stress. Central to this proposition is a sense of coherence (SOC). Research on SOC has been proceeding in criminal justice settings in Western countries (e.g. Chen, 2010; Højdahl, Magnus, Hagen, & Langeland,

2013). SOC is known as an individual's stress coping ability or adaptive capacity based upon their view of the world as comprehensible, manageable, and meaningful (Antonovsky, 1987). Therefore, one who has a strong SOC possesses a strong positive outlook in the three areas of comprehensibility, manageability and meaningfulness. Comprehensibility refers to the extent to which life events are perceived as making logical sense, that they are ordered, consistent, and structured. Manageability signifies the extent to which a person feels he or she can cope with problems. Meaningfulness intends how much one feels that life makes sense, and that challenges are worthy of commitment (Antonovsky, 1987). While strong SOC promotes viewing oneself objectively and elevates satisfaction in life (Antonovsky, 1987) on the one hand, poor SOC is associated with all types of offences on the other hand. Based upon the epidemiological study with the 10-year follow-up sample, Ristkari et al. (2009) pointed out that there was an inverse relation to SOC as the number of criminal offences increased. Low SOC was related to both level of criminal offences and with all specific crime categories such as drug, violence, property, and traffic offences and drunk driving.

In order to maintain health, individuals need a strong SOC to balance ubiquitous stressors of living (Antonovsky, 1987). This SOC interacts with the so-called individual's generalized resistance resources (GRRs). Antonovsky describes GRRs as "any characteristic of the person, group or environment that can facilitate effective tension management" (Antonovsky, 1985, p. 99). GRRs facilitate an individual's SOC and keep the ease/disease continuum toward healthy end of the continuum. They can be found within people as resources (e.g. social supports, ego strength, cultural stability, and money) and provide them a set of meaning life and coherent life experiences. These life experiences become generalized and build up the SOC. It is thus known as the ability to comprehend the whole of a stressful situation and the capacity to use the GRRs available. Improved SOC thus serves as one of the outcome measures of therapeutic interventions for inmates (Berman, 2004; Chen, 2006).

While various studies on psychosocial factors associated with recidivism have been conducted in Western nations (e.g. Andrews et al., 2006), few studies have focused on both socioeconomic and psychological factors of former inmates in Japan. Moreover, no quantitative study has examined the specific psychological factors including criminal thinking, aggression, and SOC in offender population residing offender rehabilitation facilities. Against this background, the aim of the current study was to investigate the psychosocial and criminological factors related to recidivism among Japanese criminals at offender rehabilitation facilities and to develop a better understanding of the factors that affect post-release success and failure in Japanese ex-offenders. Our hypothesis was that certain criminological and psychosocial factors will be related to Japanese recidivists, particularly residents at halfway houses. Specifically, it is predicted that there will be strong connections between recidivism and three psychological factors (criminal thinking, aggression, and SOC).

1. Method

1.1. Participants

Participants were recruited on a voluntary basis from two offender rehabilitation facilities in metropolitan areas in Japan. The sample population consisted of 119 men who had been placed under parole/probationary supervision or released from prison. The data from three participants were deemed invalid because of incomplete responses. Twenty residents were excluded because they had committed minor offenses and never received prison sentences. Therefore, data for 96 Japanese men were included in the final analyses (valid response rate, 80.6%).

The descriptive statistics of the participant demographics are shown in Table 1. The respondents ranged in age from 26 to 88. The mean age of the participants was 50.49 years old [standard deviation (SD) = 12.98]. The median age of the participants was 49 years old. The number of imprisonments reported by the participants ranged from 1 to 9 times (M = 2.41; SD = 1.97).

Table 1. Participants' socioeconomic and criminological characteristics

Variables	N	
Mean age (SD)	96	50.49 (12.98)
Education		
High school/above high school	50	52.08%
Elementary/middle school	46	47.92%
Employment status		
Employed	62	64.58%
Unemployed	34	35.42%
Marital status		
Married/In a relationship	9	9.38%
Single/divorced/widowed	87	90.62%
Living situation		
Living alone	57	59.38%
Living with others	39	40.62%
Type of dwelling		
Own house/rent/dormitory	88	91.67%
Homeless	8	8.33%
Type of crime		
Felonious/violent/intellectual crimes	38	39.58%
Property crimes	37	38.54%
Drug-related crimes	21	21.88%
Prior imprisonment		
Once	47	49.0%
Twice	20	20.8%
3 times	5	5.2%
5 times	9	9.4%
>5 times	15	15.6%

SD = standard deviation.

1.2. Measures

1.2.1. Socioeconomic features

A socioeconomic questionnaire included questions about the participants' ages, education (high school/above high school or elementary/middle school), employment status at the time of the incident (employed or unemployed), marital status (married/in a relationship or single/divorced/widowed), living situation (living with others or living alone), and type of dwelling (own house/rent/dormitory or homeless).

1.2.2. Criminological features

The questionnaire included participants' self-reported frequency of imprisonment and type of most recent convictions (felony, violent, or intellectual crimes or property or drug-related crimes). For participants with multiple simultaneous offenses, the offense with the longest prison sentence was considered for statistical analysis. Felony, violent or intellectual crimes included robbery, murder, indecent assault, forcible rape, arson, injuries, and bodily injury resulting in death, fraud, and embezzlement. Property crimes included theft and theft of lost or mislaid property. Drug-related crimes in this study referred to stimulant users because every drug offender among the participants had a history of drug abuse and had been mainly convicted for possession and use of stimulants. Thus, drug users in this study were stimulant users, reflecting the fact that the majority

of drug offenders in Japan tend to use stimulants rather than marijuana, cocaine, or other narcotics.

1.2.3. Criminal thinking

The Japanese Criminal Thinking Inventory (JCTI) contains 17 items that address potential thinking patterns associated with the lifestyle components of criminal conduct (Kishi et al., 2015). Its reliability and validity had been well-established using criminal populations in Japan (Kishi et al., 2015). Cronbach's alpha for the current sample was 0.89. JCTI comprises four criminal thinking patterns: "Discontinuity"—hesitancy and unreliability in both behavior and thinking (e.g. "Though I started an activity or business many times before, I've never made it."); "Cut Off"—immediately disvaluing thoughts that deter from crime (e.g. "When irritated, I easily abandon my rational idea."); "Self-Deception"—justifying or giving reasons for taking part in criminal behavior and overestimating its likelihood of success (e.g. "I've felt that laws have no effect on me."); and "Cognitive Indolence"—using quick and easy short-cut thinking (e.g. "I am inclined to avoid problems instead of taking a serious approach to them."). Items were rated on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The higher the total score, the stronger the respondent's criminal thinking.

1.2.4. Aggression

The Japanese version of the Buss-Perry Aggression Questionnaire is a 24-item self-report instrument that measures aggression for predicting violence (Ando et al., 1999). The instrument was shown to be valid with good reliability in the current sample ($\alpha = 0.82$). Items are rated on a five-point Likert scale ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*). It comprises four subscales: physical aggression (e.g. "Once in a while, I cannot control the urge to strike another person."), verbal aggression (e.g. "When people annoy me, I may tell them what I think of them."), anger (e.g. "Sometimes I fly off the handle for no good reason."), and hostility (e.g. "Sometimes I feel like people laugh at me behind my back."). The first two factors correspond to a motor or instrumental component of aggression; anger is the emotional or affective component and implies psychological activation and preparation for aggression; and hostility intends the cognitive component. A higher total score indicates stronger aggression.

1.2.5. SOC

The Japanese version of the SOC scale is a 13-item, five-point, self-report measure of SOC that employs a semantic differential method (Yamazaki, 1999). The reliability and validity of the SOC scale have been well-established using the general population in Japan (Togari & Yamazaki, 2005). Cronbach's alpha for the current sample was 0.73. The SOC scale covers the three SOC components: comprehensibility (e.g. "Do you have a feeling that you are in an unfamiliar situation and don't know what to do?"), manageability (e.g. "Has it happened that people whom you counted on disappointed you?"), and meaningfulness (e.g. "Do you have the feeling that you really don't care about what is going on around you?"). Higher total scores indicate greater SOC.

1.3. Procedures

The questionnaires were administered to the 119 residents who agreed to participate in the study over 2 years. Informed consent was obtained from all individual participants included in the study. The participants completed anonymous self-administered questionnaires, which were then compiled into a booklet along with an instruction sheet after they had signed the written informed consent form attached to the front of the booklet. The first author administered the questionnaires and read each item in the booklet to interviewees during the structured interview, being mindful of the differences in the participants' educational levels. The present study was approved by the ethics committee of the University of Tsukuba and the directors of each participating offender rehabilitation facility.

1.4. Analyses

Participants were classified into two groups according to self-reported frequency of imprisonment: low recidivism (only one imprisonment) and high recidivism (twice or more). The low recidivism group consists of both offenders who have been arrested only once and those who have numbers

of police arrests but experienced imprisonment only once. For example, drug users arrested for the first time are not generally handed prison terms and tend to receive suspended prison terms of a few years. Drug users who have been arrested twice or more are more likely to receive prison terms. In Japan, approximately 60% of former inmates return to prison within less than 2 years (Japanese Ministry of Justice, 2017), and this is a major issue in the criminal justice system. Because the Japanese criminal justice system has been facing an urgent need to prevent recidivism of former inmates, participants in this study were classified in this way.

Bivariate logistic regression analyses were conducted with the frequency of imprisonment as the dependent variable and socioeconomic, criminological, and psychological measures as the independent variables. Only independent variables with significance levels below 0.05 in the univariate analyses were retained in the final model.

As a predictor strongly correlated with the outcome might have shown little predictive capability in the presence of other highly correlated predictors, the correlation matrix of the variables included in the multiple logistic regression was also computed. Spearman's ρ and η were applied to indicate the relationships between two continuous variables and between one continuous variable and one categorical variable, respectively.

Subsequently, a multiple logistic regression analysis was conducted with the frequency of imprisonment as the dependent variable. Candidate independent variables significantly related to the frequency of imprisonment were then included in a multiple logistic regression analysis applying the forward selection method (likelihood ratio). To search predictors exploratorily, this study applied the forward selection method which sequentially puts factors highly correlated with recidivism into the final model. All statistical analyses were conducted using IBM SPSS Statistics for Windows, version 21.0 (Tokyo, Japan).

2. Results

2.1. Bivariate logistic regression analyses

Table 2 shows the variables related to significantly increased odds of frequent imprisonment. These were having committed property or drug-related crimes rather than felonious/violent/intellectual crimes and low scores for comprehensibility and manageability. Property crimes had an odds ratio of 5.95, meaning that individuals who committed theft were 5.95 times more likely to reoffend when compared to those who committed felonies, violent, or intellectual crimes. Drug-related crimes had an odds ratio of 10.31, meaning that drug users would be 10.31 times more likely to reoffend when compared to those who committed felonies, violent, or intellectual crimes. Among SOC, lower scores on comprehensibility increased the odds (0.90) of re-imprisonment; lower scores on manageability increased the odds (0.79) of re-imprisonment. Each of these variables was selected for multiple logistic regression analysis. All correlations between predictor variables included in the final regression model indicated that multicollinearity was unlikely to be a problem (Table 3).

2.2. Multiple logistic regression analysis

Table 4 presents a multiple logistic regression model. Property crimes had an odds ratio of 5.92, meaning that individuals who committed theft were 5.92 times more likely to reoffend than those who committed felonies, violent, or intellectual crimes. Drug-related crimes had an odds ratio of 8.99, meaning that drug users would be 8.99 times more likely to reoffend than individuals who committed felonies/violent/intellectual crimes. The odds ratio of manageability also provided an estimate of the increased risk of re-imprisonment, controlling for all other variables. The result of the model chi square statistic showed statistical significance [$\chi^2(3) = 29.03, p < 0.00$]. The Hosmer-Lemeshow goodness-of-fit test indicated that the model was well calibrated [$\chi^2(1) = 0.00, p = 1.00$]. The Nagelkerke R^2 value was 0.35. An overall predictability of 75.0% also indicated that the model shows relatively high discrimination.

Table 2. Bivariate logistic regression analyses for criminological and psychological factors in recidivists

Variables		SE	Wald	df	p	OR	CI (95%)
Age (years)		0.02	0.01	1	0.92	1.00	0.97–1.03
Education	High school/above high school (reference)						
	Elementary/middle school	0.42	3.37	1	0.07	2.15	0.95–4.86
Employment status	Employed (reference)						
	Unemployed	0.44	2.39	1	0.12	1.96	0.84–4.61
Marital status	Married/in a relationship (reference)						
	Single/divorced/widowed	0.74	0.94	1	0.33	0.49	0.11–2.08
Living situation	Living with others (reference)						
	Living alone	0.42	2.61	1	0.11	1.98	0.86–4.52
Type of dwelling	Own house/rent/dormitory (reference)						
	Homeless	0.84	1.84	1	0.18	3.14	0.60–16.41
Type of crime	Felonious/violent/intellectual crimes (reference)						
	Property crimes	0.51	12.04	1	<0.01**	5.95	2.17–16.29
	Drug-related crimes	0.64	13.34	1	<0.01**	10.31	2.95–36.06
JCTI							
	Discontinuity	0.04	2.74	1	0.10	1.07	0.99–1.15
	Cutoff	0.04	3.10	1	0.08	1.07	0.99–1.15
	Self-deception	0.05	0.57	1	0.45	1.04	0.94–1.14
	Cognitive indolence	0.06	4.03	1	0.05	1.12	1.00–1.26
BAQ							
	Physical aggression	0.04	0.24	1	0.63	1.02	0.95–1.09
	Verbal aggression	0.05	0.94	1	0.33	0.95	0.86–1.05
	Anger	0.04	0.60	1	0.44	1.03	0.95–1.12
	Hostility	0.05	1.37	1	0.24	1.06	0.96–1.16
SOC							
	Comprehensibility	0.05	4.31	1	0.04*	0.90	0.82–0.99
	Manageability	0.06	10.41	1	<0.01**	0.79	0.68–0.91
	Meaningfulness	0.05	0.04	1	0.85	0.99	0.88–1.11

SE = standard error; OR = odds ratio; CI = confidence interval of odds ratio; JCTI = Japanese Criminal Thinking Inventory; BAQ = Buss-Perry Aggression Questionnaire; SOC = Sense of Coherence Scale. * $p < 0.05$; ** $p < 0.01$.

3. Discussion

The goal of the current study was to investigate the extent to which criminological, socioeconomic, and psychological factors put an individual at increased risk for recidivism. The results suggest that two types of crimes (property crimes and drug-related crimes) and one SOC subtype (manageability) were predictors of recidivism.

Table 3. Correlation matrix of the variables included in the multivariate analyses (Spearman's ρ and η)

Variables	(1)	(2)	(3)
(1) Type of crime	-		
(2) Comprehensibility	0.22	-	
(3) Manageability	0.35	0.40	-

Table 4. Multiple logistic regression analysis for criminological and psychological factors in recidivists

Variables	SE	Wald	<i>f</i>	<i>p</i>	OR	CI (95%)
Type of crime						
Felonious/violent/intellectual crimes (reference)						
Property crimes	0.54	10.79	1	<0.01**	5.92	2.05–17.09
Drug-related crimes	0.68	10.52	1	<0.01**	8.99	2.38–33.85
SOC						
Manageability	0.08	7.65	1	0.01*	0.80	0.68–0.94

OR = odds ratio; CI = confidence interval of odds ratio; JCTI = Japanese Criminal Thinking Inventory; SOC = Sense of Coherence Scale.

* $p < 0.05$; ** $p < 0.01$.

Surprisingly, none of the demographic characteristics was associated with recidivism. Contrary to previous research that emphasized social risk factors associated with recidivism, findings from this study indicated that a low sense of manageability, a psychological or intra-individual factor, is strongly associated with recidivism. The average age of the participants was relatively old, and thus their repeat offenses might be considered a reflection of age. However, age bias is not likely to have greatly distorted the results because the age variable was controlled for in the regression analyses. Criminogenic risk factors are classified into static and dynamic factors (Hanson, 2000). Social factors such as age at the first offense and prior criminal history are considered as static, historical risk factors whereas addiction, values and attitudes that are correlated with criminal activity (e.g. SOC) are referred to as dynamic factors or criminogenic needs. Since the latter factors can be addressed by therapy, education, and/or targeted programming and subsequently altered to result in more law-abiding behavior, the current study suggests one SOC subtype (manageability) can be reformable in offender rehabilitation facilities.

Theft and stimulant use were stronger predictors of recidivism than felonies, violent, or intellectual crimes. While felonious, violent, or intellectual criminals were imprisoned an average of 1.8 times, those convicted of theft and stimulant use were re-imprisoned an average of 2.8 and 2.9 times, respectively, in the samples of this study. Participants who committed property crimes represent Japan which is facing a severely aging society and shrinking of its workforce. Most of the thieves in this study were repeat shoplifters; some of them were burglars. The official statistics reports that elderly offenders tend to shoplift while juveniles and young offenders tend to attempt burglaries (Japanese Ministry of Justice, 2014). Furthermore, repeat shoplifters were apt to be poor and needy as well as relatively old (Japanese Ministry of Justice, 2009). This profile of shoplifter among the elderly conforms to the samples in the current study since the average age of the participants in this study was 50.49 years, which was relatively older than those in past literature. The findings for stimulants also coincide with the data for offenders in general. This is unsurprising because stimulant use is often the result of addiction or chronic brain disease (McLellan, Lewis, O'Brien, & Kleber, 2000) rather than criminal intent. However, despite this knowledge, the Japanese criminal justice system had treated drug offenses as mere crimes for many years, thereby lagging behind other industrialized nations in terms of treatment for stimulant dependency.

Contrary to the previous studies and our hypothesis, criminal thinking and aggression were not associated with recidivism in the current study. This may be because the majority of the participants were limited to those likely to have been charged with less serious offenses, with an average of two to 3-year sentences, who may possess fewer antisocial cognitive tendencies. Offender rehabilitation facilities generally only accept individuals with moderate or high levels of the survival skills needed to reenter society, thus only those who do not suffer from serious mental or physical disorders and are self-sufficient. Another possible reason may be that only residents at offender rehabilitation facilities were included in this study while the previous literature targeted the prison population. Because all participants had been recently released from prison and were in the early stages of social rehabilitation, and because a majority of the residents were on parole, they may be inclined to suppress distorted thoughts or aggression and more likely to dread the reentry into society. This dread could explain why this study demonstrated that low manageability was related to recidivism.

Individuals who scored low in manageability were at higher risk of recidivism. Thus, manageability, person's perceived ability to cope with problems, solely governs the probability of recidivism. Conversely, this research suggests that strengthening an individual's stress coping ability or SOC, particularly increasing the SOC component of manageability, serves as a buffer to deter former inmates from recidivism regardless of the type of crime previously committed. Since manageability refers to the extent to which a person believes that he or she has GRRs (e.g. social supports, ego strength, cultural stability, and money) available to meet stimuli demands (Antonovsky, 1987), participants in this study with a high sense of manageability would have satisfying GRRs, which would make stressful events in their lives more tolerable experiences. Consequently, adequate GRRs give them confidence to desist from reoffending. Antonovsky (1987) claimed that the level of SOC develops gradually during youth and stabilizes at around 30 years of age, and from then on remain as a relatively stable personality disposition throughout adulthood because people tend to experience a sense of trust to others and various relationships with a partner, job, or society from adolescence to thirties. This hypothesis explains why the individuals with high SOC in this study could successfully cope with stressful stimuli after their reentry into society. In a previous study, higher SOC was found among long-term abstinent former drug addicts than among short-term abstinent addicts (Feigin & Sapir, 2005). Thus, SOC does not seem to vary within individuals in any radical way.

However, this hypothesized stabilization with age 30 of SOC has remained without empirical evidence, and the potential to change one's SOC is not as impossible as Antonovsky believed. In the world's first intervention program to increase SOC, Langeland et al. (2006) found that manageability was the biggest contributor to improving the ability to cope with mental health problems regardless of age. Although their study was conducted with psychiatric outpatients, their results show the significant potential for improving the coping skills of the current study population. While the other two components of SOC were not associated with recidivism, manageability may be sensitive to the coping process and thus vital for the development of correctional programs that close the revolving door for offenders. Previous research suggested that the dynamic process of raising SOC starts with changes in manageability, then improves the other components over the long term (Langeland et al., 2006). This shift occurs because manageability, compared with the other components, tends to rely on external resources such as social relationships (e.g. a spouse, friend, colleague, God or other spirit) that can be utilized in concrete problem-solving measures (Suominen, 1993). These resources do not have to be in the hands of the individual when the need arises, but they are at their disposal. One who has a low sense of manageability believes that things happened in life because of invariable misfortunes. By contrast, people who have obtained a high sense of manageability insist that, even if not under their control, events in life can be handled by some other resources at their disposal and at the very worst bring bearable consequences (Antonovsky, 1987). This may be interpreted to mean that providing programs that focus on the ability to find and utilize external resources more efficiently will help former inmates stabilize their reentry into society.

Although the prison system in Japan have finally introduced the common cognitive behavioral intervention program for drug offenders in 2017, only selected inmates have the opportunity to participate. Probation offices also provide brief cognitive behavioral programs, based on empirical research conducted in Western countries, to prevent relapse; however, their impact on recidivism has not yet been made public. In addition to focusing on offenders' cognitive transformation, improving their manageability of existing interventions may lead to offenders' desistance from criminal behavior. Recent qualitative data (Højdalet et al., 2013; Højdahl, Magnus, & Langeland, 2014) indicated that, regardless of age and country, a program for convicted women in Europe employing SOC and GRRs, motivational interviews, cognitive behavioral/social cognitive theory, and relaxation successfully expanded their personal repertoires of actions and the their confidence in their ability to desist from crime and substance abuse in the future. This seemed to have increased their comprehension of their own lives and the level of SOC. Despite the cultural and gender differences from the population in this present study, since the Højdalet study was conducted only on women across Europe, those results also shed light on correctional interventions among Japanese offenders. The current study is the world's first research focusing on SOC in the Japanese offender population, particularly former male inmates in halfway houses. The key question of future research to evaluate a program employing SOC and GRRs for the Japanese offender/ex-offender population is whether cultural and gender differences may exists.

3.1. Limitations and directions for future research

The present study has several methodological limitations related to the research process and the sample population which should be taken into account when extrapolating the findings to other populations. First, this was a cross-sectional and retrospective study to examine exposure to suspected risk or protection factors in relation to recidivism. The study thus cannot infer causality. In order to reach a deeper understanding of the variables directly affecting recidivism and revealing the dynamics that emerge in the process of social rehabilitation, a longitudinal study will be required. Second, the sample size was relatively small, and the results need to be replicated in larger studies analyzing which risk factors of recidivism are most predictable. Third, this study exclusively included the masculine sample, and thus does not represent results common to men and women. Four, the study population was recruited only in halfway houses where selected offenders/ex-offenders can enter. The results may, therefore, not be directly applicable to the population at other criminal justice agencies. The current findings did not support previous studies showing an association between criminal thinking or aggression and recidivism. This may be due to the sample size and the research site. Five, this study relies on the information only by participants' self-report. No official records of recidivism (i.e. the number of police arrests and imprisonments) have been taken.

The aforementioned limitations notwithstanding, the current study opens an additional window that contributes to the cross-cultural understanding of repeat offenders by emphasizing both social and psychological factors. This research also suggests that the current situation for Japanese offender rehabilitation requires comprehensive reentry interventions whereby repeat offenders can rebuild their quality of life to desist from lives of crime. To reach a deeper understanding of the formidable challenges and daunting barriers for former inmates, the utility of qualitative interviews should be emphasized in future research.

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