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Message from the Editor

Jurg Gerber
Editor-in-Chief, APJPCJ

Asia Pacific Journal of Police & Criminal Justice (APJPCJ) – formerly, Asian Policing – is a peer-reviewed scholarly journal that is published twice a year by the Asian Association of Police Studies (AAPS). The journal aims to provide a meaningful forum for exchange of knowledge, information, and research outcomes among academicians, researchers, practitioners and policy-makers on all aspects of police and criminal justice in the Asia-Pacific region.

With the unique regional focus, the primary emphasis will be on comparative perspectives among countries in Asia, North America, South America, and Oceania. The journal publishes theoretical papers, conceptual papers, empirical research, in-depth literature review, and comparative studies that significantly contribute to the knowledge of police and criminal justice in the Asia-Pacific region.

Practitioners and policy-makers also are encouraged to submit articles focusing on new ideas, new policies, and the evaluation of innovative strategies. Analytical book reviews will also be considered for publication.

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Gender Differences in Marijuana Use as They Relate to Asian Americans' Health and Delinquency

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ABSTRACT

Focusing exclusively on Asian American teenagers ages 12–17, the present study examined how social status, health factors, drug use, and delinquency variables might lead to marijuana use using two frameworks: problem behavior syndrome and the self-medication hypothesis. As male and female adolescents often take different approaches to their health and behavior, the study also measured gender differences in marijuana use as they are manifested in health and illicit behavior. Data for this study came from a combined 2002–2017 dataset, the National Survey on Drug Use and Health (NSDUH). The final sample comprised, in all, 8,698 Asian-American adolescents, 50.9% of whom were male. Obtained results show marijuana consumption to be associated positively with use of alcohol and use of tobacco, as well as with delinquency. In the present study, use of marijuana proved inversely related to self-rated health among respondents who were female. This study also found female respondents to differ importantly from male respondents when it came to associations between marijuana use and delinquency. Using marijuana is behavior that can be classified both as deviance, as a mental health issue, or both. However, our results suggest using marijuana demonstrates commonality with using other substances and with other deviant behavior in adolescence, supporting a generality of deviant behavior. To curtail young Asian Americans' illicit use of

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marijuana, we must better understand the factors that create such generality starting with culturally sensitive and early interventions against normalized substance use such as smoking, vaping, and alcohol use.

Key Words: Asian-Americans; Adolescents; problem behavior; marijuana use; delinquency

Recreational substance use, particularly marijuana use, has long been common among adolescents in the United States despite recent declines in self-reporting over the past several years. The 2018 Monitoring the Future Survey, as an example, illustrates annual use of marijuana reached 24.3% of sampled eighth-, tenth-, and twelfth-graders (combined)—a rate that actually lags rates measured in the late 1990s and early 2000s (Johnston et al., 2019; NIDA, 2018; OAH, 2017). At a more granular level, the National Survey on Drug Use and Health found that in 2016, about 6% of 12- to 17-year-old respondents had used marijuana at least once in the past 30 days (Substance Abuse and Mental Health Services Administration, 2017). Similar reporting from the Monitoring The Future Survey demonstrates daily use of marijuana in about 3.4% of 10th graders and 5.8% of 12th graders (OAH, 2017). However, copious amounts of literature show observed rates of youth substance use are distributed unevenly across racial/ethnic groups (Ash-Houchen & Lo, 2020; Cheng & Lo, 2018; Cristini et al., 2015; Hoffman et al., 2000; Keyes et al., 2015; Lo & Cheng, 2013; Mason et al., 2014; McDermott et al., 2013; Pacek et al., 2012; Reboussin et al., 2015).

Researchers reported, generally, less substance use by Asian American youths versus both White and other racial and ethnic minority youths (Grunbaum et al., 2000; Lowry et al., 2011; Wu et al., 2013a). With few exceptions (Bhattacharya, 2002; Hendershot et al., 2005; Stone & Carlisle, 2017), though, the literature featured little research concerned with social mechanisms that might explain rates of substance use by Asian American adolescents, particularly because this population is either largely ignored as a result of the model minority myth (Changhwan & Arthur, 2014; Gupta et al., 2011; Sakamoto et al., 2012), overlooked as subjects in research with a classification of an ‘immigrant health paradox’ (John et al., 2012), or regularly subsumed into a nebulous “other” category during statistical analyses of race and ethnicity. This dearth of research matters tremendously, as the pinning of the model minority myth on Asian Americans, for example, has been documented as contributing to their psychological distress (Gupta et al., 2011) and diminished help-seeking behavior for mental illness symptomology (Kim & Lee, 2014) – factors themselves associated substance use (Khantzian, 1985; Wilkinson et al., 2016b). So too are Asian Americans routinely ignored in the substance use prevention literature (Fang & Schinke, 2013), this omission leaving many stones unturned when examining associations between theoretical concepts as well as applications in treatment and prevention for this population.

The present study sought to address the gap in knowledge about associations between Asian American adolescents’ marijuana use, with a wide lens of time and theory, examining 16 years of National Survey on Drug Use and Health (NSDUH) results (2002–2017), of exclusively Asian American respondents, to ask whether and how social-status, health-related, drug-use and other delinquent-behavior factors help explain 12- to 17-year-old Asian American youths’ marijuana use in the past year. Within our study, we further sought to query to what extent underlying theoretical constructs related to existing substance use research perspectives remained applicable once White and other populations were removed from the sample, elucidating whether the self-medication hypothesis (Khantzian, 1974, 1987), as a means of understanding marijuana use as a result of lack of access to quality mental healthcare, or the generality of problem behavior framework (Jessor, 1991; Jessor & Jessor, 1977), as a means of better understanding an underlying unifying construct that ripens conditions for multiple types of simultaneous delinquency, offers the better explanation of marijuana use among the sample of

exclusively Asian American adolescents. We also acknowledge the biological and developmental changes associated with adolescence as a life stage (Achenbach, 1991), leading us to query whether gender moderates any associations between their marijuana use and several social status, health-related, drug use, and delinquency factors (Ary et al., 1999; Cha et al., 2016; Choi et al., 2018; Roberts et al., 2017; Wilkinson et al., 2016b).

Significance

Our study demonstrates significance in three primary vectors, the first of which is our exclusive focus on Asian American adolescents, using multiple years of data available, in an acknowledgement of the general shallowness of the data pools available at the national level for Asian American adolescents (Liu, 2009; Messner, 2015; Rheingold et al., 2004). So often subsumed into an “other” category, our focus on this population in the study contributes to the underlying basic literature on delinquency and its antecedents for Asian American adolescents (Liu, 2009). Ample evidence suggests gendered pathways to delinquency within the literature (Broidy & Agnew, 1997; Moon & Morash, 2017; Wilson & Widom, 2009; Yun et al., 2014), and we specified our modeling to capture male and female respondents separately, allowing a more robust examination of the patterns suggested, for male and female adolescents, within the two theoretical perspectives.

Second, our work is significant in its comparison of variables from two established conceptual interpretations of marijuana use, the self-medication hypothesis (Harris & Edlund, 2005; Khantzian, 1985; Khantzian, 1987; Lo et al., 2015) and problem behavior theory (Jessor, 1977, 1987, 1991; Jessor & Turbin, 2014; Lo, 2000; O'Connor et al., 2016). Comparing variables from superficially competing explanations instead offers opportunities to find answers for the relative applicability of each approach for the explanation of, specifically, marijuana use among Asian American adolescents. Our study helps isolate concepts presented from problem behavior theory as well as the self-medication hypothesis, solidifying theoretical soil in support of closer examinations of marijuana use among Asian American adolescents for future studies.

Finally, the study’s acknowledgement of marijuana consumption’s dual character, given the copious literature showing its manifestation alongside deviance and as well alongside sub-optimal mental health, is critical, as it draws attention to Asian American adolescents’ unique, culturally-influenced needs (Cheng & Lo, 2018; Grinshteyn et al., 2018; Heaton, 2018; Hussong et al., 2017; John et al., 2012; Kelly et al., 2017; Kingston et al., 2017; Lau et al., 2018; Lo et al., 2018; Wlodarczyk et al., 2017). Acknowledging this duality led us to search for distinct social mechanisms potentially underlying deviance-related marijuana use versus mental health-related use. Our efforts presented us with several, specific, intervention options that can stem the spread of marijuana’s first-use, or delay it until later in adolescence or the transition to adulthood, these showing promise to provide culturally-sensitive and competent healthcare accessible to Asian American adolescents.

Theoretical Foundation and Literature Review

The literature links the use of marijuana to health, in particular to mental health, through two theoretical traditions each capturing different components of a more-often-than-not comorbid or co-occurring substance use disorder and mental health disorder. Jessor and Jessor’s (1977) Problem Behavior Theory (PBT) focusing primarily on the core trait(s) or personality construct(s) that undergird a set of existing co-occurring problematic behaviors such as substance use, precocious sexual activity, risky health behavior (e.g. drink-driving) (Junger et al., 2001) and other forms of delinquency. The self-medication hypothesis (Khantzian, 1985; Khantzian, 1987), conversely, helps researchers better understand the

relationship between one's mental health and whether and to what extent an individual may be enticed to substance use to alleviate untreated symptomology, such as anxiety or depression. In particular, marijuana use, which has seen a widely changing legal landscape in the previous decade, presents a somewhat special case of substance use for the problem behavior framework, as it remains illicit for most adolescents, but has rapidly become a medication of choice for many after reaching adulthood depending on its legality in state laws where they reside.

Problem Behavior Theory

In their PBT, Jessor and Jessor (1977) elaborated on problem behaviors, or those behaviors transgressing age-appropriate norms, exhibited by adolescents and individuals transitioning to adulthood. Jessor and Jessor used prominent examples, such as early-onset substance use, early or precocious sexual activity, early-onset alcohol and tobacco use, and risky driving behavior, all of which have been investigated since the original theory was developed (Donovan et al., 1988, 1991; Jessor, 1987, 1991; Jessor & Turbin, 2014). Indeed, problem or deviant behaviors exhibit a fairly obvious generality: the PBT framework (Jessor, 1987, 1991; 1977). It is that all problem behavior, substance use included (especially where young people are concerned, for whom use constitutes delinquency), are the manifestations of a core behavioral and trait-based inclination, which Jessor and Jessor call Problem Behavior Syndrome (PBS) ([PBS] Jessor, 1991; Jessor & Turbin, 2014; Mobley & Chun, 2013; O'Connor et al., 2016). The syndrome itself reflects a set of fairly stable characteristics; however, behaviors that manifest the syndrome are the results of internal intention and of external opportunity—that is, situational or circumstantial factors. Examinations of PBT have revealed support for its use as a tool to understand delinquency among male and female adolescents, even among nationally representative samples (O'Connor et al., 2016). The framework has also seen comparative testing primarily through the work of Vazsonyi and colleagues (2010; 2008; 2004; 2006), with results generally suggesting at least some level of durability of the interconnection of problem behaviors identified within the framework in multiple countries and cultures. Some findings from recently arrested adolescents indicated that salient social statuses, such as race and gender, matter in the discussion of the PBT framework (Childs et al., 2011; Chun & Mobley, 2010; Mobley & Chun, 2013), furthering the need to continue examining whether the underpinning arrangements of theoretical concepts are reproducible in specific populations.

Self-Medication Hypothesis

In the self-medication hypothesis, Khatzian (1985; 1987) postulated that people use illicit drugs to reduce symptoms of physical and mental illness when proper treatment of symptoms appears to be unavailable or problematic (Harris & Edlund, 2005). Some evidence indicated one in six adults is using at least one substance to cope with mental health symptomology (Mauro et al., 2015). The hypothesis, although rightly criticized in the literature for its overreach (Lembke, 2012), is commonly studied with partial support for at least one of the core elements of the framework: higher levels of mental health symptomology can lead to higher levels of substance use as a result of an inability to regulate emotion. If this effect is present only in certain groups (Lo et al., 2015; Tronnier, 2015), that information is critical to inform healthcare policy and practice. At least one study indicated that self-medication with marijuana was empirically supported (Wilkinson et al., 2016b), further supporting our broad goal of shedding light on the useful elements of the self-medication hypothesis alongside the problem behavior framework. Where healthcare availability and use are lacking, motivations for consuming marijuana include relief of symptoms and of the generalized stress they can produce (Bannon et al., 2012; Bujarski et al., 2012; Diamond et al., 2006). As a codifying example of the self-medication hypothesis, in the Asian American community today, heavy stigmatization of mental illness—and thus of its proper, science-based treatment—persists (Brody et al., 2012; Do et al., 2020; Gupta et al., 2011; Hamilton et al., 2014; Kim & Lee, 2014). Asian Americans experiencing impaired mental health

may thus view self-medication as an attractive coping strategy for its concealability (Iwamoto et al., 2011; Otsuki, 2003). That attractiveness is almost certainly growing, thanks to changes in state legal codes that allow marijuana products to appear in lawfully operating U.S. storefronts.

Marijuana Use

While the landscape surrounding the legality and morality of marijuana use rages within the United States, with only some exceptions for medicinal use in some jurisdictions, marijuana use remains an illicit substance for adolescents. Relatedly and critically, while the use of marijuana may be reaching normative status in the United States, this situation does not remove its risks (as society has come to learn with tobacco and alcohol), nor does it remove from it the related behavioral and health risks associated with adolescent use that can have long-lasting effects in schools (Ehrenreich et al., 2015; Epstein et al., 2015; Meda et al., 2017; Schwartz et al., 2008; Stone & Carlisle, 2017) and families/homes (Cristini et al., 2015; Freisthler et al., 2015; Gomez et al., 2015; Luk et al., 2015; Zapata Roblyer et al., 2016). Worryingly, many early-onset marijuana users escalate to higher levels of use (e.g. experimental to weekly or weekly to daily) later in life, potentially precipitating a substance use disorder or polydrug (multiple drug) use (Cheng & Lo, 2015; Choi et al., 2018; Earleywine & Newcomb, 1997; Lo, 2000; Moss et al., 2014; Swift et al., 2008). This information is not to imply that marijuana serves as a gateway drug as identified in the 'gateway hypothesis', but the reality is that marijuana use is well documented to be associated with many other forms of substance use, including polydrug use (Barry et al., 2016; Cleveland & Wiebe, 2008; Goode, 2015; Helen Wu et al., 2010; Ives & Ghelani, 2006; Kandel, 2003; Kandel, 2002).

The literature is in consensus that Asian American adolescents use substances less than their White and other racial/ethnic minority counterparts (NIDA 2017, 2018; OAH, 2017), though it should be noted that the number of Asian American adolescents entering substance use treatment centers is increasing (Sahker et al., 2017). However, explanatory studies focusing exclusively on Asian American marijuana use (or substance use, in general) are less common than those examining differences among Whites, African Americans, and Hispanics. Hahm and colleagues (2004) provided an early look at specific pathways to substance use for Asian American adolescents, identifying acculturation through social interaction as an important underlying risk factor. This outlines the critical role of peer associations with marijuana use initiation and continuation and reveals Asian American adolescents spending more time with delinquent peers are not immune to these effects (Kim et al., 2002; Thai et al., 2010). Another commonly cited motivation for Asian American substance use is related to internalized attitudes about race and ethnicity, the model minority myth providing an example and discrimination another (Carter et al., 2017; Tran et al., 2010). Disparities between the myth's proffered goals and the means with which to achieve them may lead to negative emotion and substance use (Benner & Wang, 2015; Gupta et al., 2011; Kim & Lee, 2014; Tran et al., 2010). Other closely held values may also influence attitudes and motivations for substance use among Asian Americans, particularly among Asian American women (Iwamoto et al., 2011), further supporting the need for a gendered examination of the data for this study.

Self-Rated Health

Widely deployed as a measurement of an individual's perception of their health that can help predict mortality in large national surveys, self-rated health (SRH) has come to encompass two primary components (latent health and reporting behavior), each influenced by social structural and cultural factors (Layes et al., 2012) existing at the individual level (e.g. age or race) (Falconer & Quesnel-Vallée, 2017; Lo et al., 2013), widening to the family and neighborhood which may contain independent or interdependent effects on health (Bjornstrom, 2011; Hudson et al., 2013), and widening still to the country level where factors like democracy can play a significant role in health reporting (Krueger et al.,

2015). Those who are older, generally, report higher levels of self-rated health despite failing physical health, although this occurrence is not always the case for adults who are wealthy and objectively in the best health. Women, generally, report lower self-rated health than men across studies (Pinillos-Franco & Kawachi, 2018). Again, more complex answers must be sought as this relationship between gender and self-rated health changes later in adulthood and can also be muted by other factors such as socioeconomic status (Idler & Cartwright, 2018; Zajacova et al., 2017), with socioeconomic status and gender holding prominence in the United States but less so in other Western democracies like Canada (Prus, 2011).

Many people belonging to racial and ethnic minority groups report varying levels of self-rated health compared to their White counterparts, often despite higher reported rates of illness and injury than those same counterparts (Etherington, 2015; Hudson et al., 2013; Lo & Cheng, 2012). Interpolating immigration status to the discussion of race and ethnicity presents even more complexity, as murmurs of an ‘immigrant health paradox’ continue, despite evidence suggesting patterning the discussion as a paradox masks important cultural factors that may be guiding health decisions and disparities (John et al., 2012). Three primary pathways have been elucidated for life course understandings of disparities in self-rated health in the United States relating to: (a) the power of socioeconomic status to provide sufficient access directly to care or indirectly through education about care and health knowledge, (b) cognition and cognitive limitations experienced by those growing up in impoverished areas or families, and (c) the early/emerging health of children (e.g. low birth weight) (Link et al., 2017).

Healthcare Access/Utilization

Income is strongly related to healthcare in the United States directly, as many Americans rely on their employer to provide discounted private insurance, and indirectly, as a result of health knowledge. These factors elicit a discussion of the ability to access treatment, alongside the discussion of a willingness to utilize treatment (Carpenter-Song et al., 2010; Chan et al., 2009; Cheng & Lo, 2010; Lee et al., 2018; Lo et al., 2018). Previous researchers have outlined the important role of healthcare access and utilization when evaluating ratings of health and the self-medication hypothesis (Lembke, 2012; Lo et al., 2015; Lo et al., 2014; Lo et al., 2018; Tronnier, 2015; Wilkinson et al., 2016a). Substance use, including marijuana, would likely see reduced use and need in addressing physical or mental symptoms if all Americans had adequate access to proper healthcare and used it consistently (Harris & Edlund, 2005). Researchers suggested when accessible, Asian Americans, despite facing unique needs, tend to complete substance use programs at a similar rate to Whites and Native Americans, and these rates are higher than other racial and ethnic minority groups (Cummings et al., 2011; Hadland & Baer, 2014; Saloner et al., 2014).

Marijuana Use and Other Delinquency

Although using certain illicit drugs may regulate physical and mental symptoms, using them may also be a criminal offense. This is certainly the case for adolescents, forbidden by law to use tobacco, alcohol, and marijuana (even in locales where adults can use these substances legally). Thus, youth who use marijuana are said to exhibit problem behavior or deviant behavior and the use of alcohol and drugs often involves social gatherings and encouragement and approval by peers (Mann et al., 2015; Ryabov, 2015; Schwartz et al., 2008). In other words, consumption is behaviorally reinforced, which can lead to increasing frequency and quantity of consumption among adolescents (Van Ryzin et al., 2012).

The dual mental health and deviant behavior aspects of marijuana consumption make the phenomena uniquely challenging to explain (Buchanan & Smokowski, 2009; Cheng & Lo, 2010, 2018; Cleveland & Wiebe, 2008; Denby et al., 2011; Díaz et al., 2011; Lo et al., 2015; Ramo et al., 2012). When we consider relationships linked to mental health and substance use alongside; however, these patterns become more obscured (Chun & Mobley, 2010; Evans-Polce et al., 2015; Fox et al., 2011; Wu et al., 2013b). Among

adolescents, additional deviant or problem behaviors commonly co-occur with drug use as a result of higher levels of risk-taking behavior and delinquency in the presence of peers, especially those who are reinforcing each other's drug use (Akers et al., 1979; Ary et al., 1999). Peer reinforcement of risk taking may also explain why so much previous research has generated evidence of adolescents' and young adults' polydrug use. Examinations of the problem behavior framework indicated associations between risky behaviors, such as alcohol use (Lombe et al., 2011), smoking (Park & Romer, 2010; Yu et al., 2012), gambling (Mishra et al., 2017; Vitaro et al., 2001), problematic internet use (De Leo & Wulfert, 2013), as well as other substance use related delinquency and precocious sexuality (Mitchell & O'Neil, 1998) were relevant.

Other delinquent behaviors may lay tangentially to the earlier factors identified in the original research. Willoughby and colleagues' (2004) indicated support for associations among direct aggression alongside other more commonly reported indicators, such as smoking and alcohol use. As another example related to aggression, the use of drugs is sometimes associated with selling drugs, another risky behavior, and selling drugs is sometimes associated with gun carrying (Allen & Lo, 2012) through avenues, such as gang membership (Beardslee et al., 2018; Spano & Bolland, 2013; Spano & Bolland, 2011; Spano et al., 2008). This may help explain some of the disparities in rates of delinquency among adolescents as those residing in poorer areas or areas of social disorganization who face significantly more risk of encountering and interacting with delinquent peers (Lombe et al., 2011; Shetgiri et al., 2016; Yu et al., 2012), substance use (Jackson et al., 2016), and less informal social control (Warner, 2003; Warner & Burchfield, 2011).

Gender and Delinquency

Males, generally, engage in higher levels of delinquency than their female counterparts (Broidy & Agnew, 1997; Francis, 2014; Moon & Morash, 2017; Moon et al., 2009; Yun et al., 2014). Some arguments suggest that relationships leading toward delinquency, or pathways, may differ according to gender (Jessor & Turbin, 2014; O'Connor et al., 2016).. Adolescent boys are more like to engage in serious violence and behavior with externalizing features, (Achenbach, 1991) such as conduct disorder (Fergusson et al., 2008; Hopfer et al., 2013; McCarty et al., 2012; Salvo et al., 2012; Vazsonyi et al., 2010). For female adolescents, internalizing features are more likely to be present, with substance use or disordered eating more common outcomes versus violent delinquency (Chesney-Lind, 1989; Chung et al., 2013; Jonson et al., 2012; Vazsonyi et al., 2010; Willoughby et al., 2004). Not all cases fit neatly into this developmental binary; however, as some evidence suggests that there are multiple pathways for delinquency, such as gang violence (which has higher levels of violence and less substance use for females involved) versus the more general set of known problem behaviors for female adolescents (Yun et al., 2014; Zweig et al., 2001). Still other researchers examine more closely-held values, such as the stigma surrounding mental health and help-seeking behavior among Asian American women, positing this may lead to substantially gendered effects for this population (Iwamoto et al., 2011). Regardless, the intersecting roles of gender and race as they relate to Asian American adolescents remains understudied in the broader context of delinquency research.

METHODS

The data we examined for our study were drawn from the National Survey on Drug Use and Health (NSDUH) for 2002–2017. Since 1971, the NSDUH, an annual survey, has been conducted by the Substance Abuse and Mental Health Services Administration of the U.S. Department of Health and Human Services. The survey has become an influential source of information on drug use and mental health, among other health matters, for Americans. NSDUH researchers randomly sample households

in all 50 states and the District of Columbia. They interview participants who are at least 12 years old and who consent to answer questions face-to-face with researchers. For our study, only data from respondents identifying as Asian American from age 12–17 were included, resulting in a sample of 8,698 participants providing responses for all measures needed to complete the final data analyses.

Table 1: Descriptive Statistics and Correlations of All Included Variables (N=8,698)

	Correlations									Mean	SD
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
Marijuana Use in Past Year (1)	1									0.060	0.245
Male (2)	.034**	1								0.509	0.500
Income (3)	-0.002	-.031**	1							2.890	1.087
Age (4)	.203**	0.007	-.049**	1						3.600	1.697
Self-Rated Health (5)	-.059**	-.051**	.087**	-0.01	1					4.087	0.821
Insurance Coverage (6)	-0.005	-0.01	.162**	-.026*	.021*	1				0.938	0.241
Mental Health Treatment (7)	.081**	-.046**	0.011	0.014	-.073**	0.009	1			0.085	0.279
Alcohol Use in Past Year (8)	.440**	-0.006	-0.009	.314**	-.050**	0.004	.065**	1		0.166	0.372
Tobacco Use in Past Year (9)	.560**	.037**	-.034**	.214**	-.068**	-0.01	.054**	.437**	1	0.075	0.263
Delinquency in Past Year (10)	.238**	.060**	-.036**	0.008	-.071**	-.028*	.121**	.203**	.243**	6.413	1.194

* $p < .05$

** $p < .001$

Measures

The outcome was the dichotomous variable, use of marijuana in past year, a (1) confirming use, a (0) not confirming it. We used several social-status, drug-use, health-related, and delinquency factors to explain marijuana use. The social-status factor, gender, was measured dichotomously, a (1) assigned for male. The social-status factor, age, was measured continuously in years and ranged 12–17. The social-status factor, annual family income, was measured with offered responses ranging from 1 (less than \$20,000) to 4 (\$75,000 or more). Two drug-use factors, tobacco use in past year and alcohol use in past year, were measured dichotomously, in the same way the outcome variable was measured. We measured delinquency via a 6-item index with moderate reliability (Alpha = .64). Respondents reported whether, in the year preceding interview, they had been involved in the following: arguing/fighting with one or both parents; participating in a serious fight at school or work; participating in a fight between a group of friends and another group; carrying a handgun; trafficking drugs; theft of anything valued at \$50 or more. For each of these delinquent behaviors, respondents used offered responses to indicate how often (during the 12 months specified) they had exhibited the behavior. The responses ranged from 1 (zero times) to 5 (10 or more times).

Table 2: Bivariate Relationships between All Included Variables and Gender

Variables	Male		Female		p=
	Mean or %	SD	Mean or %	SD	
Marijuana Use in Past Year	7.2%		5.6%		0.002
Age	3.61	1.70	3.59	1.691	0.524
Income	2.86	1.08	2.92	1.09	0.004
Self-Rated Health	4.05	0.83	4.13	0.81	0.000
Insurance	93.6%		94.0%		0.374
Mental Health Treatment	7.3%		9.8%		0.000
Alcohol Use	16.4%		16.9%		0.565
Ever Smoked	8.4%		6.5%		0.010
Delinquency	6.48	1.38	6.34	0.95812	0.000
N	4,425		4,273		

Note: Chi-square tests were used to evaluate relationships between gender and each dichotomous variable; t tests were used to examine relationships between gender and each Continuous Variable.

The employed health-related measures comprised self-rated health, medical insurance coverage, and mental-health treatment. Self-rated health was a continuous measure indicating respondents’ assessments of their own general health. Offered responses for the measure ranged from 1 (poor) to 5 (excellent). Medical insurance coverage was a dichotomous measure, with a (1) indicating possession of coverage and a (0) no coverage. Mental-health treatment was also measured dichotomously, a (1) indicating receipt of mental-health treatment (during the year specified) from one or more of the following: therapist; mental-health clinic; in-home counseling; hospital, involving overnight stay; family doctor; day program for emotional problems; residential center for emotional problems; foster care for emotional problems. A (0) assigned for this measure meant no mental-health treatment was obtained from any of the listed sources. To take into account each survey year, we created 15 dichotomous time variables ranging from year 2002 to year 2016, taking year 2017 as the reference.

Data Analysis Strategy

Employing 16 years of select NSDUH data, we evaluated whether social-status, drug-use, health-related, and/or delinquency factors explained marijuana use in a group of 12- to 17-year-olds in the year preceding interview. With logistic regression techniques, we developed for each gender a model that included social-status, health-related, drug use, and delinquency factors. Assessing gender’s potential moderating role in associations between marijuana use and the other factors specified, we conducted t-tests comparing across genders the coefficients obtained for each such factor.

RESULTS

Table 1 presents descriptive statistics and correlations for all the included variables. As expected, all drug use variables were found to be moderately related to each other. Table 2 shows descriptive statistics discretely for each gender and gender’s relationship with each of the included variables. Bivariate statistics calculated significant differences between the subsample of males and subsample of females for the following variables. Males were more likely than females in this study to report use of

marijuana in the time frame, as well as to report use of tobacco in the time frame. Furthermore males in this study reported more participation in delinquency and less robust health than did females. In turn females in this study had more family income as well as a higher likelihood of having obtained mental-health treatment than did males.

Table 3: Explaining Marijuana Use in the Past Year for Males (N=4,425) and Females (N=4,273)

	Marijuana Use	
	Male OR	Female OR
Income	1.139	1.290*
Age	1.413**	1.337**
Self-Rated Health	0.859	0.648**
Insurance Coverage	0.640	0.500
Mental Health Treatment	1.747	1.320
Alcohol Use in Past Year	7.599**	9.314**
Tobacco Use in Past Year	15.166**	10.745**
Delinquency in Past Year	1.153**	1.402**
2002	0.380	0.587
2003	1.161	0.333
2004	1.743	0.938
2005	0.522	0.300
2006	1.016	0.386
2007	1.777	0.535
2008	0.804	0.148**
2009	1.699	0.229
2010	1.636	0.728
2011	0.771	0.804
2012	1.093	0.501
2013	2.200	1.833
2014	2.939	1.088
2015	2.356	0.426
2016	2.227	1.463
Constant	0.002**	0.002**
Wald Statistics	431.47**	362.82**
Pseudo R2	47.27%	43.87%
N	4,425	4,273

* $p < .05$; ** $p < .01$

Note: Bold-faced, underlined figures signify significant interaction effects involving Gender and the independent variable.

Again, via logistic regression, we sought gender differences in associations between marijuana use and social-status variables, health-related factors, and deviant behaviors (alcohol use, tobacco use, delinquency) reported for the year preceding interview. Examining the tolerance statistic associated with each of the independent variables in our multivariate regression model, we did not find multicollinearity to be a serious problem in our study. The lowest tolerance score was associated with alcohol use in the past year (.74). Table 3 presents results of the logistic regression. Among our male respondents, greater likelihood of using marijuana was associated with being older, using alcohol, using tobacco, and exhibiting more of the six delinquent behaviors our index measured. Among our female respondents, the same four characteristics were associated with marijuana use, as were higher family income and lower-rated health. Likelihood of marijuana use was lower for females in 2008 than in 2017, the reference. When we evaluated gender's possible moderating role in associations between marijuana use and the four types of variables we specified, we noted one male–female difference achieving statistical significance. It concerned a link between using marijuana and exhibiting delinquent behavior, a link much stronger among females than males.

DISCUSSION

In the present study, we examined, broadly, associations of marijuana use among Asian American adolescents, using 16 years of data from the NSDUH to query whether and how the underpinnings of the self-medication hypothesis (Khantzian, 1985; Khantzian, 1987) or the generality of problem behavior framework (PBT) (Jessor, 1987, 1991; Jessor & Jessor, 1977; Jessor & Turbin, 2014) offered better explanations of marijuana use by Asian American adolescents aged 12- to 17-years-old. We further queried whether gender moderates any associations between their marijuana use and several social-status, health-related, drug-use, and delinquency factors. Our results strongly endorse the generality of problem behavior framework over the self-medication hypothesis: For both genders measured in the sample, using drugs and behaving otherwise delinquently exhibited close association in a syndrome-like fashion as suggested by PBT (Donovan et al., 1988; Ehrenreich et al., 2015; Mobley & Chun, 2013; O'Connor et al., 2016; Sullivan et al., 2010; Vitaro et al., 2001). Our empirical data nevertheless also supported a moderating role for gender in associations between marijuana consumption and the factors of interest. Our present results yielded three important interpretations with implications for prevention as an interpretation in the following paragraphs.

First, guided by the self-medication hypothesis and the generality of the problem behavior framework, we selected social-status and health-related variables, on the one hand, and indicators of problem or deviant behavior (drug use, delinquent behaviors) to evaluate as factors in marijuana use. Finding empirical support for the self-medication hypothesis would, we understood, require observation of inverse associations between marijuana use and our health-related variables, self-rated health, medical insurance coverage, and mental-health treatment (Khantzian, 1985; Khantzian, 1987). When we calculated the association between self-rated health and marijuana use; however, only for the female subsample did the two prove related. Moreover, our study observed no association between mental-health treatment and marijuana use, for either the female or the male subsample.

Prior researchers outlined the significance of healthcare access and use to reduce needs for self-medication for any illness (Anderson et al., 2007; Gisev et al., 2006; Gomez et al., 2015; Harris & Edlund, 2005; Lembke, 2012; van Boekel et al., 2013). Researchers also acknowledged other factors in need of further elucidation, such as a nuanced understanding of the acculturation stressors, discrimination experienced (Carter et al., 2017; Tran et al., 2010), and other unique life strains of Asian American girls and women (Bhattacharya, 2002; Iwamoto et al., 2011; Kim & Lee, 2014; Otsuki, 2003). Our findings further

support the need to better understand how self-medication is influenced by poor perceptions of health for girls and women in general. As has proven helpful in the past, qualitative evaluations of these cases can provide testable hypothesis unique to Asian American girls and women. We could not, however, measure as many of these specific factors within our study as a result of current reporting methods by large, nationally representative surveys. We suggest oversampling of Asian populations within large, nationally representative, government-funded surveys in a similar manner to African American and Hispanic adolescents. As the model minority myth persists, there remains little momentum to capture the experiences of Asian Americans' crime and delinquency (and the factors leading to it), thus creating a positive feedback loop wherein the lack of data reinforces the myth, as well as the perception of no need for more accurate reporting or oversampling. Meaningful examinations of factors leading to either mental health symptoms or substance use for Asian Americans or specific Asian ethnic populations, as a broad goal, can only be achieved once these items are measured, even imperfectly.

Relatedly, researchers argue that the relationship between drug use and health self-assessment is an inverse one among groups of White adolescents and Latinx adolescents (Boyas et al 2017). We took a discrete look at Asian American adolescents, further subdividing the analyses by gender. The results constitute empirical evidence of a relationship between marijuana use and self-rated health exhibited solely by the female subgroup of the Asian American subsample. Results here also indicate that use of marijuana to self-medicate a health issue may be more relevant among Asian American females than males. For our female Asian American respondents only, we observed a significant relationship between marijuana use and self-rated health. This perhaps signals that it is especially important for this group to be informed as to the availability of all lawful, science-based strategies promising to address their health concerns while also reducing the cultural stigma surrounding accessing care (Do et al., 2020; Hamilton et al., 2014; Hamilton et al., 2011; Kim & Lee, 2014).

In contrast, our study obtained support for the generality of problem behavior framework, reiterating some prior findings that found, as we did, marijuana use (in the year preceding the survey) to be associated with using alcohol or tobacco and with participating in delinquent acts (De Leo & Wulfert, 2013; Ehrenreich et al., 2015; Mobley & Chun, 2013; O'Connor et al., 2016; Sullivan et al., 2010; Vazsonyi et al., 2010). For our sample of 12- to 17-year-olds, using drugs and behaving delinquently were strongly associated with each other, for males and for females. (This was true even though the drugs in question—alcohol, nicotine, and marijuana—are not necessarily illicit when consumed by adults.) In our study, links between marijuana use and alcohol use and between marijuana use and tobacco use were strong enough to suggest that our respondents who used marijuana—males and females alike—most often practiced polydrug use (Hoffman et al., 2000; Martin, 2008; Martin et al., 1993; Quintero, 2009; Simons et al., 2005; Smit et al., 2002; Windle & Mason, 2004). It is implied, then, that to prevent marijuana use may require earlier prevention of tobacco and alcohol initiation as well as redirection of childhood delinquent behaviors (Gottfredson, 2018; Lo, 2000)—very likely starting with alcohol prevention campaigns (Barry et al., 2016).

A second vein of interpretation and implication offered by our results reflected gendered disparities we observed concerning marijuana use. We did not note statistically significant gender differences in associations between such use and family income, nor between such use and self-rated health. But our results in these areas were significant only for our subsample of females. The significant link between family income and marijuana use observed for females here exhibited a positive direction. That link may speak to the purchase price of marijuana, although it is well documented that to share marijuana with friends is popular with American adolescents (Bouchard et al., 2018).

Our study results affirmed that gender moderates the association between marijuana use and delinquency (Gottfredson, 2018). For males and females alike in our study, marijuana use was associated with relatively more-frequent participation in delinquency. However, this relationship was significantly stronger for females than for males. That stronger relationship perhaps indicates that, among adolescent girls, there is higher involvement in a variety of problem behaviors once one problem behavior is manifested (Chesney-Lind, 1989; Francis, 2014; Groth & Morrison-Beedy, 2011; Korsgaard et al., 2016; Willoughby et al., 2004). Thus, our results may reflect a relatively strong inclination, on the part of our Asian American female (versus male) respondents, to experiment with delinquent acts leading eventually to marijuana use, perhaps in cases of higher parental income. It appears from our findings that a generality that characterizes deviance, as it ranges from the six delinquent acts specified in our study on to the use of marijuana, may apply more readily to Asian American girls than boys. That is, there is a lower marijuana-use “threshold” for girls who participate in delinquency than for boys. Future researchers might directly seek information on this angle to evaluate whether higher family income puts teen girls at increased risk of becoming marijuana purchasers as well as marijuana users, though we strongly suspect this finding is at least partially related to the peer pressure networks in which many second-generation Asian American girls reside, as earlier researchers have suggested (Bhattacharya, 2002; Chun & Mobley, 2010; Iwamoto et al., 2011; Yun et al., 2014) or the well-documented overlap between ethnicity and urbanicity among schools in disorganized spaces (Bradshaw et al., 2013; Epstein et al., 1999) that may be leading to an interconnected problem behavior set of drug using, drug selling, and potentially gun-carrying behavior (Allen & Lo, 2012; Spano & Bolland, 2011).

Third, turning to policy implications from our study, we uncovered a promising avenue for policy from our research related to the generation of accessible programming dedicated to culturally competent healthcare and substance use information for Asian American adolescents; one that uses evidence from Asian families (Fang & Schinke, 2013) to help build on strengths, such as high levels of familial integration among Asian American adolescents and their families (Gottfredson, 2018; Luk et al., 2015). The family is a key source of coping strategies for stress and of modeling of beneficial behavioral traits like self-control (Piquero et al., 2009; Piquero et al., 2016). These ideas position the family, rather than the school, as the most robust opportunity to integrate substance use prevention programs (Vakalahi, 2001). A home-based programming approach has already shown promise for Latinx adolescents (Allen et al., 2013; Chen et al., 2010), making these replication and expansion on these efforts a priority. As an example, mother-daughter programs within the home as suggested by some researchers (Fang & Schinke, 2013; Kim et al., 2002; Schinke et al., 2008) for Asian American adolescents show promise in prevention efforts. A focus on existing strengths within the family, such as teaching and modeling self-control may prove the most beneficial inclusion in preventative programming for Asian American girls (Lu et al., 2012; Vazsonyi et al., 2004). Higher levels of self-control have been demonstrated to lead to lower levels of pathology (Tangney et al., 2004), which may lead adolescents away from criminal careers or long-term substance use.

LIMITATIONS AND FUTURE RESEARCH

Our study was limited in several ways; the first limitation of note is the partial test of the self-medication hypothesis and generality of problem behavior frameworks. A more complete examination of the self-medication hypothesis would incorporate mental-health status as well as additional measures of healthcare, although probing these disparities might require additional qualitative research and grounded theory generation. As we have stated, through careful collection of data, potentially even oversampling, more robust theoretical modeling becomes possible. Second, without longitudinal data, we could not consider cause-and-effect relationships or intergenerational transmission of attitudes

about substance use or self-rated health attitudes (Hudson et al., 2013; Link et al., 2017; Villatoro & Aneshensel, 2014). Future research should include variables of mental-health treatment and other health aspects that may lag marijuana consumption, as has been shown in previous literature to have some bidirectional effects (Ash-Houchen & Lo, 2020; Burdzovic Andreas et al., 2015; Lo et al., 2015), establishing some basis for tracking whether marijuana users are relying on the drug to address their health problems as may be suggested by the rising number of substance use treatment admissions (Sahker et al., 2017).

Although our goal was to demonstrate broad patterns, our outcome item of marijuana use measured the past year use only, and more exacting measures of marijuana use (e.g. frequency in last thirty days) utilized in future studies could provide a better canvas to illustrate theoretical relationships, such as those outlined among problem behavior theory and the self-medication hypothesis. A related limitation was our delinquency measure, which included some items that are rarer than others. Theft is more common among adolescents than drug selling and gun-carrying behaviors, as an example, but these latter behaviors may be a feature of serious delinquency more pronounced in certain spaces while nearly non-existent in others a factor in need of further interrogation. Finally, John et al. (2012) stated that researchers should further examine and interrogate the 'immigrant health paradox,' including whether or not and to what extent the research hides detail about the lived experiences of Asian American adolescents based on factors, such as immigration. Our secondary measures were unable to capture these important concepts. We concur in the call for future research in this area to better understand whether or not and how immigration status may be playing a largely ignored or invisible role in the generation of delinquency and other problem behaviors among Asian American adolescents, in greater detail than general statements about second-generation adolescents adhering more closely to norms of American society.

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Views on Gender Integration: A Comparison of Male Police Cadets' Attitudes in the United States and Taiwan

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ABSTRACT

An understanding of police recruits' receptiveness to gender integration in policing is important because cadets have just begun the socialization process and their attitudes have not been molded by actual police experience. Using data derived from surveys conducted with 383 male cadets in Taiwan and 78 male cadets in the United States, we reviewed the development of women in policing and compared police recruits' attitudes toward gender integration in Taiwan with the attitudes of American recruits. In this investigation, we revealed that American male cadets more positively appraised women's ability and were more receptive to women as partners and supervisors than were male cadets in Taiwan. American cadets were also more supportive of equal assignments between male and female officers than cadets from Taiwan. Policy implications are discussed.

Keywords: gender integration in policing; police cadets; Taiwan police; U.S. police; academy training; police recruits; women in policing

INTRODUCTION

Understanding police cadets' attitudes toward gender integration is important. The attitudes held by male police cadets (even if they evolve and mature over time) will certainly impact women in their careers (Wesley Haba, Sarver, Dobbs, & Sarver, 2009). At police academies, cadets have just begun the

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socialization process, and their attitudes respecting gender have not yet been molded by actual police experience. Consequently, academy training provides opportunities to instill cadets with sensible and progressive attitudes toward gender integration. Therefore, an understanding of cadets' perceptions of gender integration can help police administrators implement suitable training programs regarding gender issues. Findings can provide baseline recognition for future research regarding views on gender integration in policing.

Most existing studies on attitudes toward women in policing have focused on experienced female officers' (e.g., Haarr, 2005; Kingshott & Prinsloo, 2004) or the public's perceptions (e.g., Archbold & Schulz, 2012). The findings in those studies indicated that male officers, in general, have reservations about the capability of women to perform police duties. However, little is known about police recruits' attitudes toward women in policing. This study aims to fill a gap in the literature on the attitudes of male police cadets toward gender equality in policing in the United States and Taiwan. It explores one aspect of the gender equality by measuring the receptiveness of male police recruits to gender integration. Further, to place "receptiveness" into context, it compares the Taiwanese experience with the American experience, which began the integration of females into all aspects of policing in the mid-1970s. This comparative study can help municipality administrators, police administrators, and male police officers understand how receptive male police recruits are to gender integration under different cultural settings. As noted by Tonry (2015), comparative and cross-national research into different issues in criminal justice can provide new visions, inform different perspectives, and potentially create innovative ways of dealing with issues and problems in criminal justice systems.

The American Experience with Gender Integration

Whether viewed an international or domestic perspective, primarily, policing has been considered "men's work," (Rabe-Hemp, 2008) an occupation considered inappropriate for women because of the demanding physical and psychological aspects of the job (Brewer, 1991; Chan, Devery, & Doran, 2003). The wisdom and noble motives of these appeals led progressive police chiefs to begin hiring "qualified policewomen" to augment the traditional maternal roles and duties of police matron. Higgins (1950, p. 101) notes that "As far back as 1916 the International Association of Policewomen recognized the need for, and advocated certain minimum standards for policewomen." Minimum qualifications for policewomen were also endorsed by the International Association of Chiefs of Police (IACP) as early as 1922. While their responsibilities varied from department to department and evolved over time, policewomen were generally limited to performing clerical duties and/or working with adult and juvenile females in ways that helped to prevent and detect crime (Higgins, 1950, 1951; Myers, 1995). However, this was not the case in all departments. For example, by 1929 the Detroit Police Department had promoted one of their policewomen, Eleonore Hutzel, to Deputy Commissioner of Police.

The decision to hire women was both progressive yet tempered by society's viewpoint that females should work in limited "protective and preventative" roles protecting women from the evil influences associated urban society, including the spread of venereal disease, unwanted pregnancies, prostitution, and the immoral influences associated with dance halls and entertainment arcades (Higgins, 1951; Myers, 1995). Schulz (1995) suggests that this created a gender-based social service role for women in police departments, a role that would affect the "professional lives of policewomen until the modern era" (p. 36).

Although their decision was ridiculed by some members of the public and the press, in 1908, the Portland Police Bureau hired Lola Greene Baldwin, and in 1910, the Los Angeles Police Department hired Alice Stebbins Wells, giving her the official title of "policewoman" (Myers, 1995; Schulz, 1995).

Both women performed similar duties. For example, Wells' responsibilities "included the supervision and the enforcement of laws concerning dance halls, skating rinks, penny arcades, picture shows and other similar places of public recreation" Koenig, 1978, p. 268). She also searched for missing persons and maintained a general information bureau that focused on public safety issues for women. Although many police departments followed suit, especially during and immediately following WWI (Levine, 1994) and again during WWII, the positions were usually temporary and limited in scope. Some scholars contend that the duties of policewomen changed relatively little from their original role of police matrons (Price & Gavin, 1982). Nevertheless, policewomen were becoming an ever increasing presence in American policing, performing a wide assortment of preventative and social work functions (Pigeon, 1927; Women's Bureau Bulletin #231, 1949).

Although they were hired in increasing numbers during second-half of the 20th Century, women were generally assigned to separate bureaus within police departments (Higgins, 1951) and charged with responsibilities consistent with their socially accepted gender-roles as maternal figures and caregivers. Society-at-large and their own departments viewed them as social workers rather than crime fighters (Schulz, 1995).

A national movement for social equality, including gender equality, that began in the 1960s, and reached a crescendo in the 1970s, coupled with pressure from policewomen already in the field, would lay the groundwork for greater numbers of women to enter the profession (Koenig, 1978). In 1972, Congress amended Title VII of the 1964 Civil Rights Act prohibiting discrimination by public, as well as private, employers (Title VII, Civil Rights Act of 1972). This mandate was followed in 1973 by the passage of the Crime Control Act, which banned, among other things, sex discrimination by law-enforcement agencies receiving federal aid (Crime Control Act of 1973). Initially, females were not received with "open arms" by many of their male counterparts, but throughout the 1970s, more and more women entered law enforcement at the local, state, and federal levels. By 2008, or 35 years after Koenig (1978) made her gloomy observation, approximately 100,000 female officers were serving in America law enforcement (Langton, 2010).

The Taiwan Experience with Gender Integration

The entry of women into the police force in Taiwan can be tracked back to 1949, when the Nationalist Party, in its retreat to Taiwan, recruited a small number of females into the police force. In 1952, an all-women police unit was first established in Taipei. Similar to the development of policewomen in the US and UK, when women first entered police forces in Taiwan, their duties were limited to gender-restricted assignments, such as juvenile and women protection and clerical work. Since 1977, Taiwanese women have been recruited into policing on a regular basis (Chu & Sun, 2014).

As in many western countries, women's groups in Taiwan have been advocating for women's equality in employment and pay in recent years (Berik, 2000; Marsh, 1998; Zveglic & van der Meulen Rodgers, 2004). ; The goal of recruiting more female police officers moved one step closer with passage of the Gender Equality in Employment Act in 2001. In fact, according to Yu and Manrique (2009), between 1978 and 2007, female labor market participation increased from 39.1% 49.4%. And in 2017, the percentage of females' participation in labor market was 50.9%, only 16.2% lower than the number of males (Department of Gender Equality, Executive Yuan, 2019).The move toward gender equality moved forward on other fronts as well. Coinciding with this effort to foster equality in employment; the nation began a campaign to recruit more female police officers and to offer them a wider array of assignments. In 2007, 4.16% of all sworn officers in Taiwan were females. At the end of 2018, the percentage of female officers increased to 10.62%, over twice the number in 2007. In theory, the law

views females as equals with their male counterparts. Beginning with information included in police recruitment brochures in 2007, male and female officers would be treated as equals—subject to the same opportunities and assignments (National Police Agency, Taiwan, 2019). This change from past practice is evidence that Taiwan is undergoing substantial cultural growth as it, and its institutions, respond to a more gender-conscious society (Bergh, 2006). Despite its noble intentions, change of this nature invariably challenges the status quo, a phenomenon often observable in the attitudes of those employees in the organization it most affects (Schein, 2004).

Receptiveness to Women in Policing

Studies have confirmed that the challenges female officers face are global and quite similar—male colleagues are generally unsupportive and hostile (e.g., Haarr, 2005). Although laws for female law enforcement employment were mandated in the early 1970s in the United States, it was not an easy journey for the new generation of policewomen. Similar to females who entered service as policewomen before them, gaining entry and securing assignments in all aspects of policing (i.e., patrol and detective work) was characterized by institutional indifference and resistance by male officers of all ranks (Schulz, 1995). Hindered by a culture that was generally unsupportive and by subtle and general forms of workplace harassment and unpleasantness, which were serious impediments in themselves, the women also faced gender discrimination and sexual harassment (Schulz, 1995). A study conducted by Atkinson (2017) with Scottish police confirmed that a cult of masculinity is prevalent in many agencies. Other researchers revealed that women still encountered the problem of exclusion in policing, although this problem becomes less apparent as more women climb the promotional ladder and assume greater positions of responsibility (Silvestri, 2013; Brown, 2016).

The perceptions that women do not have the physical strength to handle violent circumstances have been prevalent in policing literature (e.g., Kurtz, 2008; Silvestri, 2017; Wadman & Allison, 2004). For example, Kurtz (2008) reported that more than 50% of his sampled male police officers versus 8% of the female officers perceived the departments treat women more leniently than men. Similarly, Chu (2013) reported that the majority of male officers in Taiwan stated that females are treated more leniently regarding rule enforcement, and females are given special consideration and accommodations in work assignments. Additionally, Chu (2013) revealed that Taiwanese male officers, although they doubted female officers were as capable and effective as male officers in performing basic police duties, would like to see greater equality in personnel decisions, such as female officers being assigned the same duties as males. In a later study, Chu & Tsao (2014) examined male and female police cadets' attitudes toward gender integration in Taiwan reported that male cadets hold similar attitudes as male officers in Chu's (2013) study. These beliefs are supported by antidotal evidence suggesting that many male supervisors are reluctant to place female officers in potentially hazardous assignments (Chu, 2013). In a study on police cadets in China, Kim and Gerber (2019) asserted that there is no significant difference in attitudes regarding gender integration between male and female cadets. According to Kim and Gerber, cadets who held less positive attitudes toward women in policing were more likely to support gender segregated assignments.

In general, researchers have acknowledged that male officers usually hold less positive attitudes toward women's capability in policing. Thus, they are reluctant to work with female officers or have women as backups (Kingshott & Prinsloo, 2004; Martin, 1994). Researchers suggest that the increase of females working in policing contributes to the improvement of female work experience. According to Rabe-Hemp (2008), a good portion of the sampled female officers experienced a greater acceptance by male colleagues as their careers progressed. Morash and Haarr (2012) indicated that changes have occurred in some police organizations in the United States. These changes include shifting from authoritarian

management and expanding the qualities that officers see as necessary to include female associated expressiveness and collective coordination to accomplish police work. (Morash & Haarr, 2012).

The United States has a longer history of equality legislation. The equal opportunity legislation in 1972 pressured police departments to adopt an equitable hiring policy, which dramatically increased the number of females in policing (Ward & Prenzler, 2016). Kingshott (2013) indicated that the passing of time has altered the negative aspects of organizational culture regarding gender issues, such as discrimination, prejudice, and bias, which in turn, has led to more emphasis on positive aspects. America began to integrate females into all aspects of policing in the mid-1970s. Conversely, Taiwan began integrating female

Brown (1997) outlined the six stages of integration to explain gender integration in policing, which include: (a) entry, (b) separate restricted development, (c) integration, (d) take-off, (e) reform, and (f) tip-over. This model signifies the progression timeline of gender integration in policing. The first stage, *entry*, delineates the hurdles and struggles when women first entered into policing because they met resistance from male officers and were questioned about their suitability for this male-dominated profession. The second stage, *separate restricted development*, signifies the restricted roles of women after being admitted to policing. These roles primarily included administrative and clerical functions or work dealing with women and children. The third stage *integration* was marked by the extension, through legislation, of women's roles to a full range of police duties, particularly, being assigned to patrol. The US achieved the integration of female police officers long before Taiwan.

To endorse the gender equality policy in employment, the percentage of female officers in Taiwan has gradually increased since last decade. In 2005, 3.7% of all sworn officers were females. The percentage increased to 4.16% in 2007, and 5.82% in 2010. By the end of 2018, female officers were 10% of the Taiwanese police force. , Females working as police officers in the US had achieve several decades ago. Even back in 1999, in large police agencies in the US, women accounted for 14.4% of all sworn officers (Cordner & Cordner, 2011). According to Archbold and Schulz (2012), an increased presence of women in policing will change internal organization cultures and may positively influence men's attitudes toward women in policing.

Most researchers who examined perceptions of women in policing concentrated on the perceptions of the public or of fellow officers (Kim & Gerber, 2019; Atkinson, 2017; Silvestri, 2017, 2013; Brown, 2016, 2004; Chu & Tsao, 2014; Chu, 2013; Kingshott, 2013; Archbold and Schulz, 2012; Cordner & Cordner, 2011; Rabe-Hemp, 2008; Kurtz, 2008; Rabe-Hemp, 2008; Wadman & Allison, 2004; Kingshott & Prinsloo, 2004; and Schulz, 1995). To the best of our knowledge, no researchers have considered police recruits' attitudes toward gender integration from a cross-national perspective. Trying to understand the baseline attitudes of those entering law enforcement may help future researchers to examine the progression of gender equality attitudes at different stages of officers' careers. And this sort of comparative study can enhance our understanding of police recruits' gender attitudes under different cultures and provides important insights into policy implications in respective countries.

The Current Study

The study is designed to provide the perceptions of new officers in America, a country that began integrating females into all aspects of policing in the mid-1970s, in comparison to the perceptions of new officers in Taiwan, a relatively new democracy, beginning to integrate females into all aspects of policing. Since the US has a longer experience with gender integration, along with a higher proportional representation of female officers over the years, as compared to Taiwan, we can assume that police

cadets in America will be significantly more receptive to gender integration than Taiwanese cadets. The following hypotheses are thus formulated: (a) American male cadets are more likely to perceive that females are capable to perform police duties, compared to Taiwanese male cadets. (b) Compared to Taiwanese male cadets, American male cadets are more receptive to equal assignments between male and female officers. (c) In comparison with Taiwanese male cadets, American male cadets are more likely to accept females as colleagues (partners and supervisors).

METHODS

The survey instrument was adapted from previous studies (Chu, 2013; Chu & Tsao, 2014; Natarajan, 2008). The Taiwan samples were taken from cadets from the Taiwan Police College, the institution that provides training for line officers. The US samples were taken from the Oregon Police Academy because of practical reasons. While all states operate under different laws and administrative rules, the basic concepts and methods of police work remain the same. Moreover, to a large extent, police training standards are established and promulgated by the International Law Enforcement Educators and Trainers Association. Consequently, cadets across the country receive similar training.

We employed a convenience sampling method in this study. The Taiwan data used in the study were gathered from surveys conducted with male cadets of the Taiwan Police College in June and July of 2011 by one of the authors of this study. With the help of the instructors of the Taiwan Police College, cadets who took criminal law or criminal procedure law courses were invited to participate in the survey on a voluntary basis. The purposes of the research and participants' own rights were explained by one of the authors before distributing the questionnaires. Cadets willing to be surveyed completed the questionnaires during the class break and returned them to the authors after their break. To increase the sample size, surveys were also conducted during roll calls during the above mentioned periods. In sum, four hundred twenty-six surveys were distributed and three hundred eighty-three were returned, resulting in an approximately 90% response rate.

The United States data were collected from surveys conducted with 78 male police cadets attending the Oregon Police Academy, located in Salem, Oregon. The survey instrument used in Taiwan was translated from English to Mandarin. The same English survey was used at the Oregon Police Academy. After securing approval from Western Oregon University, Institutional Review Board (IRB) and the Oregon Department of Public Safety Standards and Training, we conducted three on-site surveys of cadet classes, one in February, and two in April of 2013. The scope and purpose of the survey was explained to the assembled cadets, and a sufficient number of blank surveys were left in the classroom. After the investigator left the classroom, respondents who choose to participate in the study completed the survey, placed them in an envelope, and gave them to the academy staff. Later, a member of the academy staff returned the package of completed surveys to one of the authors. The response rate in the US sample was approximately 87%.

Demographic Characteristics of the Samples

The sampled recruits in Taiwan were younger than American recruits. The mean ages of the Taiwanese and American recruits were 24 and 30 years old, respectively. More than a half of the American recruits were married, whereas less than 10% the Taiwanese recruits were married. The average length of training at the academy for the Taiwanese and American recruits was 11.75 months and 2.8 months, respectively.

Measurement

Dependent Variables

The three dimensions measuring receptiveness of gender integration were adapted from Chu (2013) study that examined male and female officers' perceptions of gender integration. The measure of the dimension "ability of females to perform police duties" was based on the summation of five survey items which were delineated in Table 1. Each of the "equal assignments" and "equal partners" dimensions was based on the addition of two survey items as listed in Table 1. All responses of the survey questions were based upon 4-point Likert scale: (1) strongly agree; (2) somewhat agree; (3) somewhat disagree; (4) strongly disagree. To ease interpretation, the scales were reverse coded so that a higher score indicates a higher level of agreement of each of the statements. The construction of dependent variables and inter-item reliabilities among variables are displayed in Table 1.

Table 1: *Construction of Dependent Variables*

Variable	Survey Items	Response Categories	Cronbach's alpha
Ability of females to perform police duties	1. Police work is an appropriate occupation for women. 2. I believe females are as capable as males in performing the duties of patrol work because gender is not a delimiting factor in patrol work. 3. Females can perform the duties required of a police officer as well as males. 4. Females have the physical abilities to perform patrol work. 5. Female can be effective patrol officers.	1= Disagree strongly 2= Disagree somewhat 3= Agree somewhat 4= Agree strongly	.89
Equal assignments	1. Police women should perform exactly the same duties as policemen. 2. Female officers should be allowed to perform the same duties as males even when the assignment may be dangerous.	1= Disagree strongly 2= Disagree somewhat 3= Agree somewhat 4= Agree strongly	.71
Acceptance of women as partners and supervisors	1. If I were working a patrol assignment, I would not mind having a female officer as my partner. 2. I would not mind working for a female supervisor.	1= Disagree strongly 2= Disagree somewhat 3= Agree somewhat 4= Agree strongly	.68

Independent and Control Variables

The primary independent variable is region. It was coded as a dummy variable with 1 representing Oregon, US and 0 with Taiwan. The control variables include: (a) marital status, (b) length of training, (c) police as a long-term career, (d) confidence, (e) stressed by physical training, and (f) college graduate. Marital status was coded as a dummy variable with 1 denoting married and 0 indicating single, separated, or divorced. "Length of training," which measured how long the cadet has been at the police college is a continuous variable (measured by month). "Policing as a long-term career" measured whether the cadet considered law enforcement as a long-term career (1 = yes; 0 = no). "College graduate" measured whether or not the cadet received a bachelor's degree.

It is assumed that police recruits (both male and female) who are confident in police work would be more receptive to gender integration. Male cadets who possess such confidence would be likely to express positive attitudes toward women in policing because they are not afraid of competing with females and would welcome women in policing. Confidence, therefore, was included as a control variable and based on a single item: "I am confident that I can handle police work." Stress resulting from physical training may also impact an individual's preferred role and perceived competency. Recruits who experience stress in training would be less likely to embrace gender integration because they would be less likely to have a positive assessment of women in policing. Consequently, stress was also included as a control variable and based on a single item: "I feel stressed by meeting the requirements of physical training." The scales were reverse coded such that a higher score indicates a higher level of agreement of each of the statements. All of the Various Inflation Factor values were below 2.6, which suggests that multicollinearity was not a problem.

FINDINGS

Frequency Distribution of Responses in Survey Items

As shown in Table 2, a majority of the American cadets held positive attitudes toward women's ability in different dimensions of police work. 93.5% of American cadets agreed or strongly agreed police work is suitable for women, while only 47.1% of Taiwanese cadets agreed (or strongly agreed) this statement. 81.8% of American cadets agreed or strongly agreed that women can perform all duties required of an officer, while only 52.3% of Taiwanese cadets held such opinion. 97.5% of American cadets agreed (or strongly agreed) that women can be effective patrol officers, whereas only approximately 50% of Taiwanese officers endorsed this statement. About 90% of the American cadets supported equal assignments between male and female officers, whereas only about 60% of Taiwanese cadets agreed or strongly agreed equal assignments. 92.3% and 85.9% of American cadets reported they were receptive to having women as supervisors and partners, respectively.

Bivariate Analysis

As displayed in Table 3, the analysis of variance indicates that compared to Taiwanese cadets, the American cadets were more likely to perceive women as being capable of performing all aspects of police work. The analysis in this dimension revealed a significant difference in mean scores between Taiwanese (12.46) and American police recruits (16.07) at the $p < .001$ level, producing an *F-ratio* of 81.41.

The second dimension measured respondent's receptiveness to equality in assignments. The analysis of variance in this dimension revealed a significant difference in mean scores between Taiwanese (5.63) and American police recruits (6.82) at the $p < .001$ level, producing an *F-ratio* of 40.40. This indicates

that compared to Taiwanese cadets, American cadets were significantly more likely to believe that women should enjoy equality in work assignments.

The third dimension measured respondent's acceptance of females as equal partners. The analysis of variance in this dimension revealed a significant difference in mean scores between Taiwanese (6.24) and American police recruits (6.77) at the $p < .01$ level, producing an *F-ratio* of 9.89. This suggests that compared to Taiwanese cadets, American cadets were significantly more accepting of females as equal partners.

Table 2: *Attitudes toward Gender Integration*

Question regarding views on women in policing	Taiwan cadets		USA cadets	
	n	%	n	%
<i>Police work appropriate for women</i>				
4 = agree strongly	21	5.5%	31	39.7%
3 = agree somewhat	159	41.6%	42	53.8%
2 = disagree somewhat	163	42.7%	4	5.1%
1 = disagree strongly	39	10.2%	1	1.3%
Total n (%)	382	100.0%	78	100.0%
<i>Women as capable as males in performing police duties</i>				
4 = agree strongly	60	15.7%	20	25.6%
3 = agree somewhat	169	44.4%	45	57.7%
2 = disagree somewhat	124	32.5%	12	15.4%
1 = disagree strongly	28	7.3%	1	1.3%
Total n (%)	381	100.0%	78	100.0%
<i>Women have physical abilities to do patrol</i>				
4 = agree strongly	23	6.1%	14	18.2%
3 = agree somewhat	133	35.0%	54	70.1%
2 = disagree somewhat	176	46.3%	9	11.7%
1 = disagree strongly	48	12.6%	0	0.0%
Total n (%)	380	100.0%	77	100.0%
<i>Women can perform duties required of an officer</i>				
4 = agree strongly	55	14.4%	18	23.4%
3 = agree somewhat	145	37.9%	45	58.4%
2 = disagree somewhat	141	36.8%	12	15.6%
1 = disagree strongly	42	11.0%	2	2.6%
Total n (%)	383	100.0%	77	100.0%

Table 2: Attitudes toward Gender Integration (cont.)

Question regarding views on women in policing	Taiwan cadets		USA cadets	
	n	%	n	%
<i>Females effective as patrol officers</i>				
4 = agree strongly	24	6.3%	47	60.3%
3 = agree somewhat	168	44.1%	29	37.2%
2 = disagree somewhat	145	38.1%	1	1.3%
1 = disagree strongly	44	11.5%	1	1.3%
Total n (%)	381	100.0%	78	100.0%
<i>Women should perform same duties as men</i>				
4 = agree strongly	113	29.5%	40	51.3%
3 = agree somewhat	133	34.7%	30	38.5%
2 = disagree somewhat	114	29.8%	8	10.3%
1 = disagree strongly	23	6.0%	0	0.0%
Total n (%)	383	100.0%	78	100.0%
<i>Women should be allowed to perform same duties even in dangerous situations</i>				
4 = agree strongly	83	21.7%	38	48.7%
3 = agree somewhat	156	40.7%	34	43.6%
2 = disagree somewhat	110	28.7%	6	7.7%
1 = disagree strongly	34	8.9%	0	0.0%
Total n (%)	383	100.0%	78	100.0%
<i>Not mind having a female officer as supervisor</i>				
4 = agree strongly	122	31.9%	43	55.1%
3 = agree somewhat	211	55.1%	29	37.2%
2 = disagree somewhat	29	7.6%	6	7.7%
1 = disagree strongly	21	5.5%	0	0.0%
Total n (%)	383	100.0%	78	100.0%
<i>Not mind a female officer as partner</i>				
4 = agree strongly	131	34.2%	35	44.9%
3 = agree somewhat	184	48.0%	32	41.0%
2 = disagree somewhat	44	11.5%	10	12.8%
1 = disagree strongly	24	6.3%	1	1.3%
Total n (%)	383	100.0%	78	100.0%

Table 3: Descriptive Statistics and Mean Comparison by Country

	Total (N=461)		Taiwan (N=383)		USA (N=78)		<i>F-ratio</i> ^a
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
<i>Attitudinal Dimensions</i>							
Ability of females to perform police duties	13.06	3.45	12.46	3.30	16.07	2.52	81.41***
Equal assignments	5.83	1.57	5.63	1.57	6.82	1.18	40.40***
Acceptance of women as partners and supervisors	6.33	1.38	6.24	1.39	6.77	1.28	9.89**
<i>Officer Background</i>							
Age	25.30	5.99	24.32	5.49	30.14	6.06	69.62***
College graduated	.47	.50	.47	.50	.50	.50	.30
Married	.14	.35	.05	.22	.58	.50	221.60***
Length (month)	10.26	5.12	11.75	4.14	2.80	2.08	342.41***

^a. One-way ANOVA was used to compute the ratio. * $p < .05$, ** $p < .01$, *** $p < .001$ one-tailed

Multiple Regression Analysis

The findings of multiple regression analysis are displayed in Table 4. The US police recruits responded significantly differently than their Taiwanese counterparts in the three attitudinal dimensions in receptiveness of women in policing. Compared to the Taiwanese cadets, the US cadets were more likely to embrace gender integration in which they had more positive appraisals of women in policing and were more supportive of equal assignments between male and female officers. Also, the US cadets were more likely to accept women as partners compared to their colleagues in Taiwan. The independent and control variables explained 24%, 12%, and 13% of the variances of females' ability, equal assignment, and acceptance of women as colleagues, respectively. These statistical findings indicate that our three hypotheses are supported. As shown in the descriptive statistics, Taiwan police cadets were younger and less likely to be married. A separate regression analysis was conducted with the Taiwan samples as well as the American samples to examine whether marital status and age have an effect on cadets' attitudes toward gender integration. Neither age nor marital status had a significant effect on their attitudes toward gender integration (results not shown).

Table 4: *Multiple Regression Summary^a*

Variable	Assessment of Women in Policing		
	Ability ^b	Equal Assignment ^b	Acceptance of Women as Partners & Supervisors ^b
US cadets	2.74*** (0.61)	0.70** (0.30)	0.77** (0.26)
Married	0.11 (0.52)	0.20 (0.25)	-0.16 (0.22)
Length of Training	-0.03 (0.04)	-0.05 (0.02)	0.01 (0.02)
Police as a career	0.21 (0.18)	0.19* (0.09)	-0.12 (0.08)
Confidence	0.02 (0.26)	0.24+ (0.13)	-0.00 (0.11)
Stressed by physical training	0.44 (0.18)	-0.03 (0.09)	0.09 (0.08)
College graduate	-1.94** (0.30)	0.22 (0.14)	-0.81*** (0.13)
R ²	0.24	0.12	0.13
N	445	453	453

^a Entries are unstandardized regression coefficients, with standard errors in parentheses.

^b OLS estimates

+p < .06, *p < .05, **p < .01, ***p < .001

CONCLUSIONS

In this study, we compared male police recruit receptiveness to gender integration. We hypothesized that due to cultural differences, owing to a more patriarchal society, and length of experience with gender integration, Taiwanese police recruits would be significantly less “receptive” to gender integration when compared to American police recruits, whose organizational cultures have slowly evolved to accept the integration of females into all aspects of police work. We assumed these differences would be apparent in the attitudes of Taiwanese cadets in three areas; (1) their belief that women are capable of performing all aspects of police work, (2) their acceptance of women as partners and supervisors, and (3) their belief that male and female officers should enjoy equal assignments. In all three dimensions, significant attitudinal differences were present in the integration of females into expanded roles in Taiwanese policing. Taiwanese officers were less receptive to gender integration than their American counterparts in the three attitudinal dimensions.

Discussion

The results indicated that American male recruits appraised the abilities of women in a positive way. They were receptive to having women as their supervisors or partners. A recent study conducted with Chinese cadets did not find gender differences in cadets’ attitudes toward gender integration in policing (Kim & Gerber, 2019). These findings are encouraging. Previous studies that have examined male

officers' evaluations of women consistently find male officers holding negative attitudes toward women: women are not deemed physically competent to perform a variety of police tasks (e.g., Archbold & Schulz, 2012; Haarr, 1997; Natarajan, 2014). Researchers suggested that the perception that women as unsuitable for police work is rooted in a police culture that values physical strength, toughness, and other muscular characteristics (Archbold & Schulz, 2012; Franklin, 2007; Natarajan, 2014). In contrast to such findings, the results of the present study indicated that the sampled American cadets held positive attitudes toward women in policing. These cadets were receptive to women's entry into law enforcement and did not hold traditional notion that law enforcement is an "all boys club" (Rabe-Hemp, 2008). Further examination can be conducted in the future to see whether these cadets' perceptions of gender equality will change after they become certified police officers.

Conversely, the findings of responses by Taiwanese male recruits warrant the attention of Taiwan's police administrations as they work to overcome the challenges that gender integration presents. A study of the American experience should both encourage the integration of women into all aspects of Taiwanese policing, yet make it clear that organizational change of this nature challenges the status quo, even at the police recruit level. In this study, the findings revealed that, in general, American cadets supported women in policing and were fairly positive in appraising women's ability as patrol officers. We noted that male recruit attitudes in the American experience, encouraged and supported by an inclusive philosophy of acceptance, have evolved over time. To cultivate a supportive environment for women in police work in Taiwan, administrators should foster an inclusive philosophy of acceptance, especially during training courses, when the attitudes of recruits have not been fully formed. Training that encourages male recruits to respect women as equals and that reduces negative stereotypes about women in policing, is essential (Belknap, 1996; Lockwood & Prohaska, 2015).

Although this comparative study provides insightful information from a cross-national perspective, some limitations should be noted. First, there is some discrepancy between the sizes of the two samples. In addition, the American samples were taken from only one state, Oregon. Both samples from Taiwan and the US are convenience samples, which are not representative. This limits the generalizability of our findings and warrants caution with regard to attitudes that male cadets may hold in other states and jurisdictions. Second, the surveys were conducted at different time frames. The surveys with Taiwanese male cadets were conducted in 2011, whereas the US surveys were conducted in 2013. It is not clear whether the discrepancy of the time frame affects the attitudinal difference between the two samples. Also, the Taiwan data were collected in 2011; an important caveat for interpreting our study is that male police officer's perceptions at that time may be different nowadays. Additionally, this study utilizes self-reported survey. Since the police academy is a unique environment, the male cadets may be vigilant and guarded while responding to the surveys. Thus, we cannot rule out the possibility of social desirability in cadets' responses. Future studies can incorporate the results of different methods, such as observations and in-depth interviews. Despite its limitations, this study extends our understanding of male cadets' perceptions of gender integration from a cross-cultural perspective.

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