Willingness to cooperate with police: A population-based study of Australian young adult illicit stimulant users

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Abstract

While procedural justice has been highlighted as a key strategy for promoting cooperation with police, little is known about this model’s applicability to subgroups engaged in illegal behaviour, such as illicit drug users. This study compares willingness to cooperate with police and belief in police legitimacy, procedural justice, and law legitimacy among a population-based sample of Australian young adult amphetamine-type stimulant (ATS; i.e., ecstasy and methamphetamine) users and non-users. We then examine predictors of willingness to cooperate among ATS users. ATS users were significantly less willing to cooperate with police and had significantly lower perceptions of police legitimacy, procedural justice, and law legitimacy, compared to non-users. However, belief in police legitimacy independently predicted willingness to cooperate among ATS users. We set out to discuss the implications of these findings for policing, including the role of procedural justice in helping police deliver harm reduction strategies.

Keywords

Ecstasy (MDMA), methamphetamine, procedural justice, cooperation with police, young adult
**Introduction**

Effective policing is largely reliant on voluntary cooperation from the public (Murphy, 2009). Procedural justice-based policing has been highlighted as a key mechanism for promoting compliance, cooperation, and satisfaction with police (Mazerolle et al., 2013). Lind and Tyler’s (1988) group value model (GVM) provides a theoretical connection between procedural justice and willingness to cooperate with police, proposing that procedurally fair treatment promotes cooperation with police through conveying to individuals that they are valued members of society. Social identity plays a central role in the GVM, which proposes that individuals who identify with and value their position within mainstream society place greater importance on the fairness of police procedures and decisions than individuals perceived to be outside of mainstream society (Tyler, 2006). However, little is known about the applicability of procedural justice and the GVM model among subgroups that engage in deviant or illegal behaviour, such as illicit drug users. In this paper, we set out to explore this issue by examining the impact of procedural justice and police legitimacy on willingness to cooperate with police among a population-based sample of young Australians who use drugs. Before discussing our study and the results, we situate this research in the broader literature.
Legal socialisation and engagement in deviant and illegal behaviour

Legal socialisation refers to the process of developing attitudes and perceptions regarding legal authorities, institutions, and the law. This process begins in childhood and continues through adolescence and into adulthood (Reisig et al., 2011). Fagan and Tyler (2005) propose that there are three key dimensions of legal socialisation: (1) institutional legitimacy (accepting the rules and decisions of legal institutions and actors), (2) legal cynicism (perceptions of the legitimacy of the law and social norms), and (3) moral ambiguity (separating moral standards from conduct to justify deviant actions). Adolescents and young adults who engage with and accept deviant subcultures, such as drug-use subcultures, have been found to have less favourable attitudes towards police (Jang et al., 2010; Schuck, 2013). Additionally, research in democratic nations suggests that youth who engage in delinquent behaviour are more likely to report higher levels of legal cynicism and to question the legitimacy of the law (Nivette et al., 2015; Piquero et al., 2005). Hence, it is argued that individuals who question the legitimacy of the law and police are less likely to feel a moral obligation to follow the law and defer to police authority (Murphy et al., 2009). It is possible that this may be particularly pronounced among individuals who engage in illegal behaviour, such as illicit drug use, as this behaviour may indicate a level of disregard
towards the law and legal authorities, although it is unclear whether this disregard is specific to laws and policing pertaining to illicit drug use only.

**Procedural justice**

The GVM proposes that the treatment individuals receive from an authority, such as the police, provides important information as to their status within society, with fair treatment communicating that they are regarded as valued and respected citizens (Murphy and Cherney, 2011). Contact with police, and how an individual interprets their treatment by police during that contact, has a significant impact on views of police and policing (Medina Ariza, 2013; Schuck and Martin, 2013; Tyler, 2006). Importantly, police behaviour during public interactions is a factor that can be controlled by the police, regardless of the public’s reaction to the situation (Skogan, 2006). Procedural justice is concerned with fair treatment and decision-making during interactions between citizens and the police and affects the degree to which the police are regarded as legitimate (Goodman-Delahunty, 2010; Reisig et al., 2007). Tyler’s (2006) procedural justice model is comprised of four key elements: 1) voice (i.e., opportunities to have input in police decision-making), 2) neutrality in decision-making, 3) displays of dignity and respect for citizens, and 4) demonstrations of trustworthiness.
Evidence suggests that displays of procedural justice can increase perceptions of police legitimacy and can promote cooperation and compliance with both the police and the law more generally (Mazerolle et al., 2013). Conversely, unfair treatment by authority figures communicates disrespect and a marginalised position within the group (Murphy and Cherney, 2011), which may lead to disobedience and resistance towards police (Mazerolle et al., 2013). Further, the GVM argues that procedural justice will be more important to individuals who strongly identify with mainstream society (Lind and Tyler, 1988). Conversely, procedural justice will be less important, and potentially less effective, for individuals outside of mainstream society (Huo, 2003).

There is a growing body of research testing the applicability of the procedural justice model across differing groups and contexts. This research provides strong support for the procedural justice-based model of policing in the United States and the United Kingdom, including among ethnic minority groups (Jackson and Bradford, 2010; Jackson et al., 2012; Tyler, 2005; Tyler et al., 2010). However, while the procedural justice model is widely supported in the literature, suggesting that people place greater importance on procedural justice than other elements of policing (e.g., police performance), evidence from recent studies in Australia and Ghana indicates that
procedural justice may be less important among some groups and cultures (Murphy and Cherney, 2011; Tankebe, 2009).

Procedural justice and groups engaged in illegal behaviour

Procedural justice may not be effective in encouraging cooperation among individuals who do not strongly identify with the prevailing majority group or who do not perceive the police to be a legitimate authority (Huo, 2003). Research shows that young offenders and youth who engage in delinquent behaviour (e.g., truancy, vandalism, and shoplifting) are likely to display high levels of cynicism about the criminal justice system and are more likely to question the legitimacy of the law and police and, consequently, may be unwilling to cooperate with police (Nivette et al., 2015; Piquero et al., 2005). Despite this, there is relatively little research examining the applicability of the procedural justice model among groups engaged in illegal behaviour.

The available research provides some support for the proposition that procedural justice can play a role in influencing attitudes and behaviours among specific offenders. Papachristos and colleagues (2012) reported that, in their sample of violent offenders, those who viewed police as procedurally just and legitimate were less likely to report carrying a gun. In a study of domestic violence offenders, Paternoster and colleagues (1997) found that offenders who perceived the police
officers as procedurally just during their arrest were less likely to reoffend post-arrest (see also White et al., 2015). Procedural justice has also been shown to be effective among incarcerated offenders (Baker et al., 2013; Reisig and Mesko, 2009; Tatar et al., 2012). However, Augustyn (2015) argues that the impact of procedural justice among adults engaged in regular offending is weak compared to conventional non-offenders, and that the effectiveness of procedural justice on youth offenders, while promising, remains inconclusive.

Procedural justice and young adult drug users

One group of offenders largely missing so far from research examining the applicability of the procedural justice model to offending groups are young adult drug users. This is arguably an important gap in the literature as early adulthood is the peak age for both harmful levels of alcohol and other drug use (Stone et al., 2012) and contact with police (Skogan, 2006). Research shows that age is a strong determinant of attitudes towards police and policing, with young people generally having less positive attitudes towards the police compared to older age groups (Brown and Benedict, 2002; Skogan, 2006). These differing attitudes towards police may reflect differences in values held by different age groups, with young people placing a higher value on freedom and autonomy, while older people value safety and security more highly (Reisig and
Correia, 1997). Additionally, it may be reflective of the fact that young people are more likely to encounter police as victims or perpetrators of crime than older age groups (Skogan, 2006).

Engagement in illegal behaviour, such as illicit drug use, further increases young adults’ likelihood of encounters with police through a variety of mechanisms, such as intoxication in a public place, possession and supply of illicit drugs, carrying a drug utensil, and driving while under the influence (Sutherland and Shepherd, 2001). Young adults who consume illicit drugs such as ecstasy may also have greater exposure to vicarious experiences of police contact due to the social nature of ecstasy use, as ecstasy is commonly used with others during social occasions (Jenkinson et al., 2014). These vicarious experiences can influence how an individual perceives their own encounters with police (Warren, 2011) and are a key component of legal socialisation (Fagan and Tyler, 2005). Evidence indicates that adolescents whose friends engage in delinquent behaviour, or who have witnessed their friends being stopped or questioned by police, have less positive views of police and the justice system (Fine et al., 2016).

Some factors that appear to influence attitudes towards police and policing, such as age, cannot be modified. However, the possibility of improving attitudes towards police among young adults engaged in illegal behaviour, such as drug use,
through modifying police behaviour (i.e., through procedural justice) presents an important opportunity. If procedurally fair contact with police can increase willingness to cooperate with police (i.e., compliance with police directions and requests) among drug-using young adults, such positive police contact may potentially be an important strategy for effectively engaging with these young adults to address the potential harms of illicit drug use (e.g., acute toxic effects, injury, overdose, impaired decision making, and driving under the influence) and their health-related needs.

The current study

The present study aims to compare willingness to cooperate with police and perceptions of police and policing among a population-based sample of Australian young adult amphetamine-type stimulant (ATS; i.e., ecstasy [MDMA] and methamphetamine) users and non-users and to examine predictors of willingness to cooperate with police among young adult ATS users. Two questions are addressed. Firstly, do young adult ATS users differ from non-using young adults in regard to belief in police legitimacy, procedural justice, and law legitimacy, and willingness to cooperate with police? And secondly, what predictors are associated with willingness to cooperate with police among young adult ATS users? A prediction model of self-reported willingness to cooperate with police among young adult ATS users was
developed, examining factors including perceptions of police and policing, contact with police, ATS use, and drug market involvement, while controlling for a number of factors, including delinquency, antisocial behaviour, age, and sex.

Method

Participants

The Natural History Study of Drug Use (NHSDU) is a prospective longitudinal study of drug use in a population-based sample of young adult ATS users and non-users in South-East Queensland, Australia, which commenced in 2009. To recruit participants, drug-use screening questionnaires were mailed to 12,079 young adults (aged 19-23 years) randomly selected from the Brisbane and Gold Coast electoral roll, with a response rate of approximately 50%. From the screening data, a sampling frame was developed from which an ATS-user group (used ecstasy or methamphetamine ≥3 times within the last 12 months, n=352) and a comparison group (random selection of the young adults who had never used ATS at the time of screening, n=204) were recruited. This method is described in detail elsewhere (Smirnov et al., 2014).

Data for this study are drawn from the baseline interview and three follow-up waves of data collection (12-month face-to-face interview, 30-month online survey, and 54 months [4 ½ years] face-to-face interview). In the current study, 137 ATS-user
cases (38.9%) were excluded due to missing data, including 116 ATS users who did not complete each of the three follow-ups. These excluded ATS users did not differ from other ATS users at baseline in terms of sex ($\chi^2=3.78, \text{ ns}$), age (t=0.59, ns), or employment status (employed vs. unemployed; $\chi^2=1.36, \text{ ns}$). On average, excluded participants had consumed a total of 181.0 ecstasy pills in their lifetime at baseline, compared to an average of 195.9 ecstasy pills among the current ATS user sample (z=-1.14, ns). Additionally, there was no significant difference between the proportions of excluded ATS users and those in the current sample who had used ecstasy (45.1% vs. 46.1%; $\chi^2=0.03, \text{ ns}$) and methamphetamine (14.4% vs. 13.5%; $\chi^2=0.06, \text{ ns}$) in the last month at baseline. Fifty comparison group cases (24.5%) were excluded due to missing data. These excluded comparison group cases did not differ from the current sample of non-users by sex ($\chi^2=0.93, \text{ ns}$), age (t=-0.38, ns), or employment status (employed vs. unemployed; $\chi^2=1.84, \text{ ns}$) at baseline. The final sample for this study is 369 participants (ATS users: n=215; non-users: n=154).

**Measures**

*Self-reported willingness to cooperate with police (outcome).* At the 4 ½ year follow-up interview, participants were asked how likely they would be to cooperate with police in four different scenarios using a five point Likert scale (very unlikely to very likely): (1)
call the police to report a crime, (2) help police find someone suspected of committing a crime by providing them with information, (3) report dangerous or suspicious activities to police, and (4) willingly assist police if asked. This scale has been used to measure cooperation with police in research in Australia and the United States (Murphy et al., 2008; Murphy et al., 2010; Sunshine and Tyler, 2003b) and has been shown to be a valid and reliable measure with a Cronbach’s alpha of 0.78-0.88 (Mazerolle et al., 2012; Murphy and Cherney, 2012). A dichotomous variable of willingness to cooperate with police (i.e., strong willingness to cooperate vs. weak/moderate willingness to cooperate) was produced for logistic regression. Participants who responded ‘likely’ or ‘very likely’ to each of the four scale items were categorised as having strong willingness to cooperate with police.

*Perceptions of police, policing, and the law.* Belief in police legitimacy, procedural justice, and law legitimacy were measured at the 4½ year interview. Participants indicated on a five point Likert scale (strongly disagree to strongly agree) how much they agreed with a number of statements, based on their experiences and perceptions. The questions used to construct the scales for police legitimacy, procedural justice, and law legitimacy can be found in Appendix A. These questions were drawn from the Australian Community Capacity Study (see Mazerolle et al., 2012) and are based on the
work of Tyler and colleagues (Tyler, 2006; Tyler and Huo, 2002) and Murphy and colleagues (Murphy et al., 2010). These scales have been shown to be reliable and valid measures of police legitimacy (Cronbach’s alpha 0.85), procedural justice (Cronbach’s alpha 0.85), and law legitimacy (Cronbach’s alpha 0.73) (Mazerolle et al., 2012).

*Substance-related contact with police.* At the 4 ½ year interview, participants were asked about any substance-related contact with police (i.e., police contact associated with their own drug or alcohol use, including traffic offences and Random Breath Tests). Three levels of substance-related contact were created: (1) no substance-related police contact; (2) non-intensive substance-related police contact (e.g., Random Breath tests where the participant did not return a positive alcohol or drug reading); and (3) intensive substance-related police contact. Intensive substance-related contact refers to police contact, initiated by the police or a third party, that involved being questioned or detained by police, searched by police or sniffer dogs, or charged or arrested for a drug- or alcohol-related offence, including driving while under the influence of alcohol or other drugs. Participants were also asked if they had ever been charged with a drug- or alcohol-related offence.
Amphetamine-type stimulant use and drug market involvement. Use of ecstasy and methamphetamine in the last 12 months was measured at four time points (baseline, 12 months, 30 months, and 4 ½ years). Two variables were constructed to measure recurrent use of ecstasy and methamphetamine, each with three categories: (1) minimal recurrent use (use at 0-1 waves), (2) intermediate recurrent use (use at 3-2 waves), and (2) high recurrent use (use at 4 waves). At baseline, 12 months, and 4 ½ years, ATS users also reported if they had ever sold ecstasy or methamphetamine.

Delinquency and antisocial behaviour. At baseline, participants reported if they had ever been suspended from school. Due to the association between school suspension and delinquency (Hemphill et al., 2012; Hemphill et al., 2014), suspension was used as a proxy measure. Conduct disorder was evaluated at the 4 ½ year follow-up using the World Mental Health Survey Initiative version of the World Health Organisation’s Composite International Diagnostic Interview (WMH-CIDI 3.0), which applies diagnostic criteria for conduct disorder from the Diagnosis and Statistical Manual of Mental Disorders (DSM-IV). Research has shown reasonable individual-level concordance between WHM-CIDI diagnoses and those from clinical interviews (Haro et al., 2006).
Analysis

Wilcoxon Mann-Whitney tests were conducted to compare willingness to cooperate with police and belief in police legitimacy, procedural justice, and law legitimacy among young adult ATS users and non-users, due to the skewness of these variables. A prediction model of self-reported willingness to cooperate with police among young adult ATS users was developed, using multivariate logistic regression. Unadjusted and adjusted odds ratios are reported. Simple linear regression analysis was conducted to further examine the relationships between three of the predictors included in the model (i.e., contact with police, procedural justice, and police legitimacy), controlling for sex. Data were analysed using Stata/SE version 12.1.

Results

Amphetamine-type stimulant users and non-users: Socio-demographic characteristics

Socio-demographic characteristics of ATS users and non-users are compared in Table 1. The socio-demographic characteristics of the young adult ATS users and non-users are broadly similar. ATS users and non-users did not differ significantly in regard to age, sex, education (secondary or tertiary), or employment status. In contrast, there was a significant difference in income at baseline between ATS users and non-users with a higher proportion of ATS users earning $1,000 or greater per fortnight
(χ²=20.98, p<0.001). This difference in baseline income may be explained by the higher proportion of ATS users engaged in full-time work at baseline compared to non-users (40.0% vs. 27.9%; χ²=5.77, p=0.056). However, by the 4 ½ year follow-up, there was no longer a significant difference in income levels between ATS users and non-users (χ²=0.12, ns).

TABLE 1 ABOUT HERE

Amphetamine-type stimulant users and non-users: Illicit behaviour and substance-related police contact

Illicit behaviour (i.e., selling ATS) and substance-related police contact are also examined in Table 1. Almost three quarters (70.7%) of ATS users had sold ecstasy or methamphetamine. Comparable data was not collected for the comparison group of non-using young adults. There was a significant difference in levels of substance-related police contact between ATS users and non-users (χ²=51.43, p<0.001). Approximately three quarters (74.7%) of ATS users had experienced substance-related police contact, compared to 60.4% of non-users. Additionally, almost half (47.0%) of ATS users reported intensive substance-related contact (e.g., being questioned or detained by police, being searched by police or checked by sniffer dogs, or being
charged or arrested for a drug- or alcohol-related offence), compared to approximately one in ten (11.7%) non-users.

Amphetamine-type stimulant users and non-user: Comparing willingness to cooperate with police and perceptions of police, policing, and the law

Table 2 compares perceptions of police legitimacy, procedural justice, and law legitimacy, and willingness to cooperate with police between young adult ATS users and non-users. ATS users had significantly lower perceptions of police legitimacy ($z=-4.98$, $p<0.001$), procedural justice ($z=-6.61$, $p<0.001$), and law legitimacy ($z=-4.49$, $p<0.001$), compared to non-users. ATS users were also less willing to cooperate with police compared to non-users ($z=-2.83$, $p<0.01$).

TABLE 2 ABOUT HERE

Predictors of willingness to cooperate with police among amphetamine-type stimulant users

Table 3 presents a prediction model of strong self-reported willingness to cooperate with police, reporting unadjusted and adjusted odds ratios. In unadjusted analyses, willingness to cooperate with police was positively associated with perceptions of
police legitimacy, procedural justice, and law legitimacy. In contrast, high recurrent ecstasy use and having ever sold ATS were negatively associated with willingness to cooperate with police.

TABLE 3 ABOUT HERE

In adjusted analyses, perception of police legitimacy was positively associated with willingness to cooperate with police (Adjusted Odds Ratio [AOR]: 2.87, 95% Confidence Interval [CI] 1.35-6.12). In contrast, while significant in unadjusted analysis, perceptions of procedural justice and law legitimacy were not significantly associated with willingness to cooperate in the prediction model.

A marginal negative association was found between high recurrent ecstasy use – use in the last 12 months at baseline, 12-months, 30-months, and 4 ½ years – and willingness to cooperate with police in adjusted analyses (p=0.057). No significant associations were found between willingness to cooperate with police and recurrent methamphetamine use, having ever been charged with a drug- or alcohol-related offence, level of substance-related police contact, having ever sold ATS, school suspension, conduct disorder, age, or sex.
Examine the association between contact with police, procedural justice, and police legitimacy

Simple linear regressions were conducted to examine the associations between contact with police, procedural justice, and police legitimacy, controlling for sex. A significant negative association was found between police contact (entered as a discrete variable) and procedural justice (Coef. -0.125, p<0.05). A significant positive association was also found between procedural justice and police legitimacy (Coef. 0.689, p<0.001).

In summary, these results show that ATS users are significantly less willing to cooperate with police compared to non-users. Further, ATS users were less likely to believe police were legitimate and had lower perceptions of procedural justice and law legitimacy, compared to non-using young adults. However, the prediction model shows significant associations between police legitimacy and willingness to cooperate with police among young adult ATS users, adjusting for a number of other factors, including contact with police, ATS use, drug market involvement, delinquency and antisocial behaviour, age, and sex. While no associations were found between willingness to cooperate with police and procedural justice or contact with police in the adjusted model, simple linear regression showed a significant negative association.
between police contact and procedural justice and a significant positive association between procedural justice and police legitimacy, controlling for sex.

**Discussion and conclusion**

This study extends the procedural justice literature beyond studies focused on the general population and ethnic minorities by examining the applicability of this model to young adult ATS users. In comparison to non-using young adults, ATS users were less willing to cooperate with police and had lower perceptions of police legitimacy, procedural justice, and law legitimacy. However, among young adult ATS users, perception of police legitimacy predicted willingness to cooperate with police after controlling for a number of factors, including perceptions of procedural justice and law legitimacy, level of contact with police, level of ATS use, drug market involvement, delinquency and antisocial behaviour, age, and sex. While procedural justice was not significantly associated with willingness to cooperate with police in the prediction model, a significant association was found between procedural justice and police legitimacy. This aligns with the procedural justice literature, which demonstrates that procedural justice is a key pathway to increasing police legitimacy, which in turn increases willingness to cooperate with police (Mazerolle et al., 2013). Consequently,
these findings add further support to the small body of research examining the applicability of procedural justice among offending groups.

The young adult ATS users in this study had high rates not only of possession of illicit drugs, but also of other illegal behaviour, such as selling ATS. Almost three quarters (70.1%) of ATS users reported having sold ATS. Further, ATS users had significantly higher rates of police contact compared with non-using young adults, with almost half (47.0%) of ATS users having had intensive substance-related police contact (e.g., being questioned or detained by police, being searched by police or checked by sniffer dogs, or being charged or arrested for a drug- or alcohol-related offence), compared to approximately one in ten (11.7%) non-users. Consequently, our study provides further support for the applicability and efficacy of procedural justice-based policing across a range of groups, including those engaged in illegal behaviour.

That our findings suggest that procedural justice, through promoting police legitimacy, increases willingness to cooperate with police among young adult ATS users may appear to be at odds with the GVM, which argues that procedural justice will be less important, and potentially less effective, for individuals outside of mainstream society (Huo, 2003). However, our findings align with the majority of research on the applicability of procedural justice among offending groups, which indicates that procedural justice can play a role in influencing or altering attitudes
towards police and policing in specific offending populations (e.g., Papachristos et al., 2012; Paternoster et al., 1997; Reisig and Mesko, 2009). Sunshine and Tyler (2003a) argue that procedural justice may potentially be more important for individuals who are unsure of their status within the group than individuals who are confident in their status. The ATS-using young adults did not differ significantly from the non-using young adults on a number of socio-demographic characteristics, including age, sex, education, or employment, suggesting that overall these ATS users are a relatively functional and ordinary group. Additionally, recreational drug use, particularly ecstasy use, has arguably been normalised in particular contexts and groups (Duff, 2005; Fitzgerald et al., 2013; Parker et al., 1998). Consequently, young adult drug users who engage in predominantly recreational use may identify with mainstream culture; however, due to their engagement in illegal drug use, these young adults may be uncertain of their status within mainstream society, especially in relation to police and other figures of authority.

Young adult ATS users were less likely to endorse the legitimacy of police and legal institutions compared to young adult non-users. A potential explanation may be the different socialisation processes experienced by young adult ATS users and non-users. Ecstasy is a social drug, with use generally occurring in groups of ecstasy users for particular social occasions (Jenkinson et al., 2014). While not significant, our results
showed a marginal negative association between high recurrent ecstasy use (i.e., ecstasy use in the last 12 months at each of the 4 waves of the study) and willingness to cooperate with police in the adjusted model. It is possible that involvement with peers engaged in illegal behaviour, such as ecstasy and other drug use, may influence attitudes towards police, policing, and the law. In particular, vicarious experiences with law enforcement, such as stories told by peers, have been shown to influence how individuals perceive their own encounters with police (Warren, 2011). Fagan and Tyler (2005) propose that legal socialisation is likely moderated by peers; for example, affiliation with delinquent peers is associated with moral disengagement among children. Further research on the influence of engagement in drug-using peer groups on attitudes towards police, policing, and the law is needed.

Drug using young adults are also more likely than non-using young adults to experience direct personal contact with the police (Sutherland and Shepherd, 2001). It is likely that the nature of interactions with police may differ between ATS users and non-users. Due to their engagement in illegal behaviour, ATS users’ police contact may be more likely to be negative, resulting in less positive perceptions of police among ATS-using young adults compared to non-using young adults. While our prediction model indicates that level of police contact is not directly related to willingness to cooperate with police among ATS users, our findings suggest that there may be an
indirect effect of police contact on willingness to cooperate with police through perception of police legitimacy. Our analysis showed a significant negative relationship between police contact and perception of procedural justice, controlling for sex. Perceived procedural justice was found to be significantly associated with perception of police legitimacy, which was significantly associated with willingness to cooperate with police in the prediction model. It is possible, however, that a direct association could be found in more problematic drug-using groups. Further research is needed to compare the types of police interactions experienced among different groups of young adults and the potential influence on attitudes towards police and policing.

Interestingly, there was no association between belief in law legitimacy and willingness to cooperate with police among ATS users in our adjusted model. This may be related to our measure of law legitimacy, which focused on the law in general (i.e., I feel a moral obligation to obey the law). It is possible that these young adult ATS users have a general respect for the law but may hold different views in regards to laws against illicit drug use. Consequently, questions focusing specifically on drug-related laws may have produced different results.

The key implication of our findings is that procedural justice, through promoting perceptions of police legitimacy, may be an effective strategy to increase willingness to cooperate with police among young adult ATS users. These young adults
are more likely to experience contact with the police, as a victims or perpetrators of crime, compared to older age groups (Skogan, 2006), and due to their engagement in illegal behaviour (Sutherland and Shepherd, 2001). If procedurally just police contact can increase willingness to cooperate with police among drug-using young adults, such positive police contact may potentially be a useful strategy for effectively engaging with these young adults to address the potential harms of illicit drug use and their health-related needs. Australian police have taken an active role in areas of public health related to substance use (e.g., through police diversion for cannabis users; see Payne et al., 2008). There may be greater scope for police involvement in diversion and referral programs for young adults engaged in illicit drug use, especially when police use strategies based on procedural justice to provide harm reduction information to these young adults.

Limitations of the study should be noted. Firstly, our measure of willingness to cooperate with police is based on self-report, which may differ from actual responses in real life situations. Secondly, our data collection relating to willingness to cooperate with police, procedural justice, and police legitimacy occurred at one time point and thus causal relationships cannot be determined. Thirdly, our study focused on substance-related contact with police and did not capture other types of police contact, including self-initiated contact (e.g., reporting a crime). Fourthly, we were
unable to examine some potential confounding characteristics, such as ethnicity and neighbourhood context, which have been linked to attitudes towards police. Lastly, young adult ATS users in our sample were predominantly recreational users, engaging in use that is largely unproblematic. Hence, it is important to be realistic as to the role that procedural justice may play for other groups who are engaged in more entrenched patterns of offending.

This study highlights that willingness to cooperate with police is significantly lower among ATS users compared to non-users, in a population-based sample of Australian young adults. However, our findings show an association between belief in police legitimacy and willingness to cooperate with police among young adult ATS users. Promoting police legitimacy through procedural justice-based policing may be an effective strategy for increasing cooperation with police among young adult drug users. Further, if police are able to engage more effectively with young adult drug users through procedurally just encounters, this may allow police to more effectively address potential harms related to illicit drug use and drug users’ health-related needs.
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Appendix A

Contained in Appendix A is a complete list of the items used in the police legitimacy, procedural justice, and law legitimacy scales. Reverse scoring is indicated with the letter ‘r’.

Police legitimacy

- Overall, I think the police are doing a good job in my community
- I trust the police in my community
- I have confidence in the police in my community
- Respect for police is an important value for people to have
- I feel a moral obligation to obey the police

Procedural justice

- Police try to be fair when making decisions
- Police treat people fairly
- Police treat people with dignity and respect
- Police are always polite when dealing with people
- Police listen to people before making decisions
- Police make decisions based upon facts, not their personal biases or opinions
- Police respect people’s rights when decisions are made

Law legitimacy

- You should always obey the law even when it goes against what you think is right
- I feel a moral obligation to obey the law
• People should do what our laws tell them to do even if they disagree with them

• Disobeying the law is sometimes justified (r)
Table 1. Socio-demographic and background characteristics: Amphetamine-type stimulant users (n=215) vs. non-users (n=154)

<table>
<thead>
<tr>
<th>Socio-demographic and background characteristics</th>
<th>ATS users % (n=215)</th>
<th>Non-users % (n=154)</th>
<th>Test statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at baseline</td>
<td>20.9 years (1.14)</td>
<td>20.8 years (1.34)</td>
<td>t=0.63</td>
</tr>
<tr>
<td>Mean (Standard Deviation)</td>
<td>19-23 years</td>
<td>19-23 years</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>54.4</td>
<td>61.7</td>
<td>χ²=1.94</td>
</tr>
<tr>
<td>Male</td>
<td>45.6</td>
<td>38.3</td>
<td></td>
</tr>
<tr>
<td>Education at baseline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed high school</td>
<td>73.0</td>
<td>79.9</td>
<td>χ²=2.30</td>
</tr>
<tr>
<td>Tertiary education&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td>χ²=0.00</td>
</tr>
<tr>
<td>Completed tertiary education</td>
<td>72.6</td>
<td>72.7</td>
<td></td>
</tr>
<tr>
<td>Income at baseline&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td>χ²=20.98***</td>
</tr>
<tr>
<td>0-$999</td>
<td>49.8</td>
<td>72.7</td>
<td></td>
</tr>
<tr>
<td>$1,000-$1,299</td>
<td>20.9</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>$1,300-$1,599</td>
<td>15.8</td>
<td>9.7</td>
<td></td>
</tr>
<tr>
<td>$1,600-$1,999</td>
<td>7.4</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td>≥$2,000</td>
<td>6.1</td>
<td>2.6&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Employment at baseline</td>
<td></td>
<td></td>
<td>χ²=5.77†</td>
</tr>
<tr>
<td>Part-time</td>
<td>47.4</td>
<td>56.5</td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>40.0</td>
<td>27.9</td>
<td></td>
</tr>
<tr>
<td>Income at 4 ½ years&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td>χ²=0.12</td>
</tr>
<tr>
<td>0-$999</td>
<td>24.2</td>
<td>25.3</td>
<td></td>
</tr>
<tr>
<td>$1,000-$1,299</td>
<td>8.8</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>$1,300-$1,599</td>
<td>18.6</td>
<td>18.8</td>
<td></td>
</tr>
<tr>
<td>$1,600-$1,999</td>
<td>26.1</td>
<td>24.7</td>
<td></td>
</tr>
<tr>
<td>≥$2,000</td>
<td>22.3</td>
<td>22.1</td>
<td></td>
</tr>
<tr>
<td>Employment at 4 ½ years</td>
<td></td>
<td></td>
<td>χ²=0.25</td>
</tr>
<tr>
<td>Part-time</td>
<td>21.4</td>
<td>20.1</td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>63.7</td>
<td>66.2</td>
<td></td>
</tr>
<tr>
<td>Illicit behaviour and police contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever sold ATS&lt;sup&gt;d&lt;/sup&gt;</td>
<td>70.7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Substance-related police contact&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No substance-related contact</td>
<td>25.6</td>
<td>39.6</td>
<td></td>
</tr>
<tr>
<td>Non-intensive contact</td>
<td>27.4</td>
<td>48.7</td>
<td></td>
</tr>
<tr>
<td>Intensive contact</td>
<td>47.0</td>
<td>11.7</td>
<td></td>
</tr>
</tbody>
</table>

† p=0.056, *** p<0.001  
<sup>a</sup> Measured at baseline and 30-month follow-up; tertiary education refers to university, Technical and Further Education (TAFE), or trade qualifications;  
<sup>b</sup> Average fortnightly income after tax; amounts listed are AUD$;  
<sup>c</sup> Cell number too small for reliable chi-square analysis;  
<sup>d</sup> Measured for ATS users at baseline and the 12-month and 4 ½ year follow-ups; matching data not available for non-using young adults;  
<sup>e</sup> Measured at the 4 ½ year follow-up; Intensive contact refers to police contact, initiated by the police or a third party, related to the participant’s own drug or alcohol use including occasions such as: being questioned or detained by police, being searched by police or checked by sniffer dogs, or being charged or arrested for a drug- or alcohol-related offence
Table 2. Perceptions of police legitimacy, procedural justice, and law legitimacy, and willingness to cooperate with police\(^a\) among young adult amphetamine-type stimulant users (n=215) and non-users (n=154)

<table>
<thead>
<tr>
<th></th>
<th>ATS users</th>
<th>Non-users</th>
<th>Z(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (Standard Deviation)</td>
<td>Mean (Standard Deviation)</td>
<td></td>
</tr>
<tr>
<td>Police legitimacy</td>
<td>3.72 (0.68)</td>
<td>4.06 (0.54)</td>
<td>-4.98***</td>
</tr>
<tr>
<td>Procedural justice</td>
<td>3.09 (0.69)</td>
<td>3.55 (0.58)</td>
<td>-6.61***</td>
</tr>
<tr>
<td>Law legitimacy</td>
<td>3.09 (0.82)</td>
<td>3.49 (0.70)</td>
<td>-4.49***</td>
</tr>
<tr>
<td>Willingness to cooperate with police</td>
<td>4.00 (0.73)</td>
<td>4.19 (0.67)</td>
<td>-2.83**</td>
</tr>
</tbody>
</table>

\(^{**} p<0.01, \ *** p<0.001\)

\(^a\) All scales measured on a 1 to 5 scale with higher scores indicating more positive evaluations/greater willingness to cooperate; \(^b\) Two-sample Wilcoxon rank-sum (Mann-Whitney) test, reporting z scores
### Table 3. Multivariate logistic regression model of self-reported willingness to cooperate with police among young adult amphetamine-type stimulant users, reporting unadjusted and adjusted odds ratios a (n=215)

<table>
<thead>
<tr>
<th>Perceptions of police, policing, and the law d</th>
<th>Self-reported willingness to cooperate with police b n c</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unadjusted ORs (95% CI)</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Police legitimacy</td>
<td>3.98 (2.33-6.79)***</td>
</tr>
<tr>
<td>Procedural justice</td>
<td>2.61 (1.66-4.12)***</td>
</tr>
<tr>
<td>Law legitimacy</td>
<td>2.06 (1.43-2.96)***</td>
</tr>
<tr>
<td>Contact with police</td>
<td></td>
</tr>
<tr>
<td>Ever charged with an alcohol or drug-related offence</td>
<td>31 0.51 (0.23-1.10)</td>
</tr>
<tr>
<td>Substance-related police contact e</td>
<td></td>
</tr>
<tr>
<td>Non-intensive contact</td>
<td>59 0.63 (0.30-1.34)</td>
</tr>
<tr>
<td>Intensive contact f</td>
<td>101 0.52 (0.26-1.02)</td>
</tr>
<tr>
<td>Amphetamine-type stimulant use g</td>
<td></td>
</tr>
<tr>
<td>Ecstasy use h</td>
<td></td>
</tr>
<tr>
<td>Intermediate recurrent use (use at 2-3 waves)</td>
<td>109 0.96 (0.43-2.13)</td>
</tr>
<tr>
<td>High recurrent use (use at 4 waves)</td>
<td>73 0.43 (0.18-0.99)*</td>
</tr>
<tr>
<td>Methamphetamine use h</td>
<td></td>
</tr>
<tr>
<td>Intermediate recurrent use (use at 2-3 waves)</td>
<td>83 0.63 (0.36-1.13)</td>
</tr>
<tr>
<td>High recurrent use (use at 4 waves)</td>
<td>21 0.42 (0.16-1.09)</td>
</tr>
<tr>
<td>Drug market involvement</td>
<td></td>
</tr>
<tr>
<td>Ever sold ATS</td>
<td>152 0.50 (0.27-0.91)*</td>
</tr>
<tr>
<td>Delinquency and antisocial behaviour</td>
<td></td>
</tr>
<tr>
<td>Ever suspended from school</td>
<td>69 0.95 (0.54-1.69)</td>
</tr>
<tr>
<td>Conduct disorder (lifetime) i</td>
<td>47 0.81 (0.42-1.55)</td>
</tr>
<tr>
<td>Demographic factors</td>
<td></td>
</tr>
<tr>
<td>Age d</td>
<td>98 1.04 (0.82-1.32)</td>
</tr>
<tr>
<td>Sex (male)</td>
<td></td>
</tr>
</tbody>
</table>

† p=0.057, * p<0.05, ** p<0.01, *** p<0.001

a Logistic regression reporting odds ratios adjusted for all other variable in model; b Outcome variable is strong self-reported willingness to cooperate with police, refers to responding 'likely' or 'very likely' to all of the 4 cooperation items included in the scale; c Number with characteristic; d All scales measured on a 1 to 5 scale with higher scores indicating more positive evaluations; e Reference category is no substance-related police contact; f Intensive contact refers to police contact, initiated by the police or a third party, related to the participant's own drug or alcohol use including occasions such as: being questioned or detained by police, being searched by police or checked by sniffer dogs, or being charged or arrested for a drug- or alcohol-related offence; g Use of ecstasy and methamphetamine in the last 12 months, measured at baseline, 12 months, 30 months, and 4 ½ years; h Reference category is minimal recurrent use (use at 0-1 waves); i Assessed using the WMH-CIDI 3.0, which applies diagnostic criteria from the DSM-IV; j Entered as discrete variable.