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# College students' use of compliance-gaining strategies to obtain prescription stimulant medications for illicit use

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## Abstract

**Objective:** To examine college students' illicit use of prescription stimulant medications and compliance-gaining strategies that they would use to obtain a stimulant medication.

**Design:** A questionnaire-based study.

**Setting:** Seven hundred and twenty undergraduate college students at a large, northeastern university in the United States were surveyed.

**Method:** The study received approval from the university's Institutional Review Board (IRB). Students completed anonymous questionnaires outside of class time.

**Results:** Respondents were more likely to use rationality and promise strategies to gain others' compliance. No differences in strategy selection for close friends and acquaintances were reported. Illicit prescription stimulant users scored higher in sensation seeking than those who reported no prior illicit stimulant use.

**Conclusions:** A compliance-gaining perspective provided a better understanding of the strategies college students are likely to use to obtain prescription stimulants from those with a legitimate prescription.

## Keywords

compliance-gaining strategies, prescription stimulants, sensation seeking, verbal aggressiveness

## Introduction

The illicit use of prescription stimulant medications is a new trend taking place on college campuses that warrants the attention of health professionals and scholars. The illicit or *nonmedical* use of prescription medications is defined as using prescription-type drugs not prescribed for the respondent by a physician or used only for the experience or feeling they produce<sup>1</sup>. Understanding the types of influence messages that college students use to obtain prescription stimulants for illicit use may help in designing more effective preventive health interventions. The objective of compliance-gaining research is to increase our understanding of how individuals use messages to achieve goals<sup>2</sup>. This study utilized a compliance-gaining theoretical framework to investigate strategies college students are likely to use to obtain prescription stimulant medications for illicit use.

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## Illicit use of prescription stimulant medications

Centers for Disease Control and Prevention (CDC) statistics show a trend toward more widespread prescription of stimulant medications, such as amphetamines (eg, Adderall) and methylphenidates (eg, Ritalin), to treat attention deficit/hyperactive disorders (ADHD), especially in school-age children. Stimulants prescribed or provided to children between 5 and 17 years of age increased from 2.6 million in 1994 to over 5.0 million a decade later<sup>3</sup>. Further, between 2001 and 2006 there was a 74 per cent increase in the number of prescriptions for treating ADHD among adolescent girls and a 37 per cent increase in similar prescriptions for adolescent boys<sup>4</sup>. These statistics suggest that more students entering college may be bringing such medications with them<sup>5</sup>. Indeed, extant research documents the increasing prevalence of the illicit use of prescription stimulant medications among college students<sup>5-7</sup>.

Experts attribute the rise in the abuse of prescription medications to the increased availability of these drugs, a growing social acceptance of sedative, painkiller, anti-anxiety and stimulant medications, and the perception that pharmaceutical drugs are safe, especially among young people who perceive illegal drugs like marijuana to be more dangerous<sup>8</sup>. Further, increased prevalence of legitimate prescriptions for stimulant medications among adolescents and young adults make them more available and relatively inexpensive to obtain.

## Compliance-gaining

Compliance-gaining research's emphasis on strategies and goal attainment offers a way to examine college students' persuasive attempts to obtain prescription stimulants from those with a legitimate prescription. Knowing more about the strategies individuals are likely to use to attain this goal may inform ongoing prevention interventions aimed at helping young adults resist peer influences to engage in alcohol and drug use<sup>9</sup>. Further, such information may be used to design new messages to help those who have legitimate prescriptions for stimulant and other medications (eg, anti-depressants, pain killers) to resist others' persuasive attempts to obtain medications.

There are numerous ways in which individuals seek to gain another person's compliance. Early researchers developed lists of influence strategies that individuals are likely to use (eg, promises, threats, expertise, liking, debt, altruism and esteem)<sup>10</sup>. Subsequent research suggested that people use numerous strategies to pursue a variety of compliance-gaining goals<sup>11</sup>. For example, *gain assistance* is a goal type used when a person wants help from a target to complete a task or achieve another goal (eg, to gain information, obtain help, ask a favour, or borrow an object). Although one goal is dominant (influence or primary goal) at any particular time, individuals usually try to achieve more than one goal (secondary goal) simultaneously. Secondary goals are cross-situational concerns that shape and constrain how individuals pursue the primary goal<sup>11</sup>. Obtaining a prescription stimulant for illicit use may be considered as a primary goal, while wanting to maintain face and to support the target's face may be examples of secondary goals<sup>12</sup>. Cody et al<sup>13</sup>, for example, found that when gaining assistance from both friends and strangers individuals were more likely to use *rationality* (eg, explaining why they need a favour) and *positive feelings* (eg, using small talk, hinting, or putting on a 'happy face') to accomplish their goal and were least likely to use *coercion* (ie, threats) or *negative feelings* (eg, acting sad or hurt). Further, Kellerman<sup>14</sup> argued that when a compliance-gaining goal threatens a target's autonomy (eg, asking a favour), using behaviours that respect the other person's freedom of action, such as giving options, asking for suggestions, using pleas, and being indirect or tentative, are seen as more polite.

College students are obtaining prescription stimulants from fellow students and not necessarily from strangers or the internet<sup>8</sup>; suggesting that when making such requests students may be more

likely to use polite strategies to protect their own and the other person's face. Thus, the following hypothesis is posited:

*H1:* Individuals will be more likely to report using *rationality* and *positive feelings* to influence another person to give them a prescription stimulant medication for illicit use, and will be less likely to report using *coercion* and *negative feelings*.

**Target of the compliance-gaining attempt.** Cody et al<sup>13</sup> found that individuals used similar strategies for gaining assistance from both friends and strangers. Gaining assistance (eg, asking a favour) is a distinct goal that primarily benefits the source rather than the target and is one in which the target is not strictly obligated to comply. Because the request benefits them, sources typically seek favours from at least moderately intimate targets<sup>15</sup>. In their study of methylphenidate use, Babcock and Byrne<sup>16</sup> found that more than a third of respondents knew other students from whom they could obtain the drug. However, a college student who does not have a close friend taking prescription stimulant medication may prefer asking the favour of a 'friend of friend' (acquaintance) rather than a stranger. With this in mind, however, it is possible that college students would report using different compliance-gaining strategies when asking a close friend for a prescription stimulant medication versus asking a friend of a friend or an acquaintance. Therefore, we ask:

*RQ1:* Are there differences in strategy selections for obtaining a prescription stimulant medication from a close friend versus an acquaintance?

**Justifications for obtaining prescription stimulant medications.** College students who illicitly use prescription stimulants report various reasons or justifications for using them. For example, the most commonly reported motives for illicit prescription stimulant use among college students are to help with concentration, help study, and increase alertness; other motives include getting high and experimentation<sup>17</sup>. We know that individuals often juggle multiple goals at once<sup>11</sup>; and different goals may require different strategies. For example, *task-related* justifications for obtaining prescription stimulants (eg, studying for exams, improving concentration) may require different strategies than *recreational* justifications (eg, getting high or partying). Thus, individuals may use different compliance-gaining strategies depending on the justification for obtaining the medications. To explore this we ask:

*RQ2:* Are there differences in strategy selection by justification?

### Verbal aggressiveness

Verbal aggressiveness (VA) is a personality trait that 'predisposes persons to attack the self-concepts of other people instead of, or in addition to, their positions on topics of communication'<sup>18</sup> (p.61). People high in VA are less concerned with others' feelings, making them more likely than those low in VA to generate verbally aggressive messages<sup>19</sup>. VA has been shown to predict a variety of riskier behaviours ranging from alcohol consumption<sup>20</sup> and exposure to/liking of media violence<sup>21</sup>, to physical aggressiveness<sup>22</sup> and substance abuse<sup>23</sup>.

Evidence suggests that verbally aggressive individuals are less likely to be concerned with secondary goals such as being supportive or maintaining a positive relationship. For example, Meyer<sup>24</sup> investigated the relationship between VA and secondary goals and found that people high in VA were less likely to find messages objectionable on the grounds that the message would offend or hurt the recipient or because it conflicted with their values, principles, or identity. Consistent with

this line of research, we expect that verbally aggressive individuals will report less use of strategies such as compromise and rationality and more use of coercion, negative feelings, referent appeal, and direct requests to obtain a prescription stimulant for illicit use. Thus, we hypothesize:

*H2:* Verbal aggressiveness will be inversely related to coercion, negative feelings, referent appeal, and direct request.

### **Sensation seeking**

Sensation seeking is a personality characteristic involving 'the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences'<sup>25</sup> (p.10) and has been shown to be a strong positive predictor of numerous risky behaviours such as sexual risk taking<sup>26</sup>, reckless driving<sup>27</sup>, alcohol use<sup>28</sup>, and illicit drug use<sup>29</sup>. Prescription stimulant medications may be considered *legal*, but there are risks involved in illicitly using such medications<sup>30</sup>. Thus, it may be that those scoring higher in sensation seeking would be more likely to report having illicitly used prescription stimulant medications than those scoring lower in sensation seeking. Therefore, we hypothesize:

*H3:* Individuals who report prior illicit prescription stimulant use will score higher in sensation seeking than individuals who report no prior illicit prescription stimulant use.

## **Methods**

### **Participants**

Participants were 720 undergraduate college students (59 per cent female) representing 3.7 per cent of the total population of one campus at a large, northeastern university in the United States. The students represented the university demographics, ranging in age from 17 to 49 years ( $M = 20.04$ ,  $SD = 2.62$ ). Three respondents did not report age or sex. Participants were primarily White/Caucasian (61 per cent), Asian/Pacific Islander (17 per cent), Black/African American (7 per cent), Hispanic (6 per cent), Bi-Multiracial (4 per cent), and all other groups were less than 2 per cent each. Ten (1 per cent) respondents did not report race. Participants who had been diagnosed with ADHD numbered 51 (7 per cent) and those currently prescribed medication for ADHD numbered 34 (4.7 per cent). Additionally, 220 participants (30 per cent) reported having illicitly used prescription stimulant medications.

### **Research design and procedure**

The university's institutional review board (IRB) approved the study's research protocol. Students recruited from introductory communication courses, representing a range of years of study, completed the survey outside of class time. Participants filled out consent forms and entered a room with up to 20 students and were randomly assigned an anonymous survey that took approximately 15 minutes to complete. The survey reflected a 2 x 4 factorial design based on manipulation of two independent variables: the *target* of a persuasive attempt (close friend or acquaintance) and a *justification* for asking a person for a prescription stimulant (to party, to stay awake during class, to get high, or to stay up all night studying). Participants received extra credit for their participation and were offered a debriefing form.

### Compliance-gaining scenario manipulation

This study utilized a design similar to earlier studies of compliance-gaining in which respondents were provided with hypothetical scenarios and asked to select strategies that they would be likely to use from a pre-set list. Survey instructions for all participants read ‘Studies show that some college students take prescription medications not prescribed for them. We would like you to *imagine* yourself in the following scenario: You want to persuade a person to give you a prescription stimulant’.

**Target.** Participants were asked how they would persuade either a close friend or an acquaintance to give them a prescription stimulant medication. The manipulation read, ‘A (close friend/ acquaintance) at your school takes prescription medication for Attention Deficit Hyperactive Disorder (ADHD). You want to persuade this person to give you some of the medication’.

**Justification.** This manipulation consisted of four justifications or explanations for persuading the target person. The first sentence is manipulated for each of four justifications. For example, the *party* justification read, ‘It is Friday night and you want to go out and party most of the night’. The *stay alert* justification read ‘You have a long class tomorrow and you know you will have trouble staying awake during class’. The *get high* justification read ‘You want to get high and feel good’. Finally, the *study all night* justification read ‘You have two final exams tomorrow and know you will need to stay up all night studying’.

### Manipulation check measures

Perceptions of the compliance-gaining scenarios were measured with three Likert-type items developed by Canary et al<sup>31</sup> with a five-point response ranging from (1) *Strongly Disagree* to (5) *Strongly Agree*. Factor analysis and scree plot indicated a one factor solution (eigenvalue = 1.95, 65 per cent var., three items loading above 0.74). The items included ‘This situation is easy to imagine’, ‘I would be very confident of my success in persuading the other person in this situation’, and ‘I have often experienced a situation like this one’. Items were summed and averaged to form one scale with higher scores indicating more agreement that the scenarios represented the items. Reliability was good ( $\alpha = 0.73$ ,  $M = 3.05$ ,  $SD = .97$ ).

A 2 (close friend and acquaintance) x 4 (party, stay alert, get high, study) ANOVA was conducted on reactions to the compliance-gaining scenarios. The omnibus  $F$  test,  $F(7, 712) = 1.90$ ,  $p = 0.07$ ,  $\eta^2 = 0.02$  was not significant, indicating that the scenarios were free of any significant mean differences. Thus, individuals perceived the scenarios equally.

### Measurement instruments

**Strategy selection.** Likelihood of using different compliance-gaining strategies to achieve the goal was measured with eight Likert-type items with five-point responses (adapted from Canary et al<sup>31</sup> and Marwell and Schmidt<sup>10</sup>) ranging from (1) *Very Likely* to (5) *Very Unlikely*. The items included: *rationality* ( $M = 1.93$ ,  $SD = 1.03$ ) ‘I would explain the reasons why I wanted the person to give me some Adderall or Ritalin’, *promise* ( $M = 2.15$ ,  $SD = 1.03$ ) ‘I would promise to return the favour in the future’, *positive feelings* ( $M = 2.29$ ,  $SD = 1.06$ ) ‘I’d put on my happy face and act particularly nice when trying to persuade him or her’, *compromise* ( $M = 2.41$ ,  $SD = 1.20$ ) ‘I’d suggest that we

talk over some compromise and work something out', *referent appeal* ( $M = 2.82$ ,  $SD = 1.20$ ) 'I would appeal to the person by referring to the nature of our relationship as good friends/acquaintances', *direct request* ( $M = 3.15$ ,  $SD = 1.37$ ) 'Without going into any details, I'd simply ask "Will you give me some Adderall or Ritalin?"', *negative feelings* ( $M = 3.15$ ,  $SD = 1.22$ ) 'I'd act sad, hurt, or dejected when influencing him/her to make him/her feel guilty', and *coercion* ( $M = 4.58$ ,  $SD = 0.80$ ) 'I would threaten the person if s/he didn't go along with my request'. Higher scores on items indicated less likelihood of using the strategy.

*Illicit prescription stimulant use.* Illicit use of prescription stimulant medications was measured with one Likert-type item ranging from (1) *Never* to (5) *Very Often*. The item read 'I have taken prescription stimulants (eg, Adderall, Ritalin) not prescribed for me'. The item was recoded into those who reported prior illicit prescription stimulant use (31 per cent) and those who reported no prior illicit use (69 per cent).

*Verbal aggressiveness.* Verbal aggressiveness, an individual difference that predisposes people to attack the self concept of others, was measured by 10 five-point Likert items selected from Infante and Wigley<sup>18</sup> with responses ranging from (1) *Strongly Disagree* to (5) *Strongly Agree*. Factor analysis (varimax) and scree plot indicated a single factor (eigenvalue = 2.66, 33 per cent var., with all items loading  $\geq 0.51$  after deleting two items). Sample items included: 'When individuals are very stubborn, I use insults to soften the stubbornness' and 'When an argument shifts to personal attacks, I try very hard to change the subject'. Scores were summed and averaged to form one scale, with a higher score indicating more verbal aggressiveness. Reliability was moderate ( $\alpha = 0.71$ ,  $M = 2.54$ ,  $SD = 0.56$ ).

*Sensation seeking.* Participants' preference for novel and exciting experiences and their willingness to take physical and social risks were measured with the Brief Sensation Seeking Scale (BSSS)<sup>32</sup> consisting of eight Likert-type items with responses ranging from (1) *Strongly Disagree* to (5) *Strongly Agree*. Factor analysis (varimax) and scree plot indicated one factor (eigenvalue = 2.8, 47 per cent var., all items loading above 0.58 after discarding two items). Sample items included: 'I would like to explore strange places' and 'I like wild parties'. The scores were summed and averaged to form one scale, with a higher score indicating a higher level of sensation seeking. The reliability was moderate ( $\alpha = 0.76$ ,  $M = 3.38$ ,  $SD = 0.72$ ).

## Results

Initial analyses to explore interaction effects included a 2 x 4 ANOVA with the independent variables *target* (close friend/acquaintance) and *justification* (party/get high/stay awake/study), and as dependent variables the eight reported compliance-gaining strategies. Results indicated no significant interaction effects, thus results are organized by Hypothesis/Research Question and focus on main effects. Zero order correlation matrix for variables is presented in Table 1. Table 2 provides means and standard deviations for the eight strategies. Data were analyzed by a series of *t*-tests and ANOVAs. The significance level was set at  $p < .05$  for all tests except correlations.

### Strategy selection

A one-way within-subjects ANOVA was conducted to test Hypothesis 1, that individuals will be more likely to report using *rationality* and *positive feelings* to obtain a prescription stimulant medication



**Table 1.** Zero order correlation matrix for variables

|                 | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9      | 10    | 11   |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|--------|-------|------|
| 1. Dir. Request | –       |         |         |         |         |         |         |         |        |       |      |
| 2. Pos. Feel    | 0.22**  | –       |         |         |         |         |         |         |        |       |      |
| 3. Comp.        | 0.14**  | 0.45**  | –       |         |         |         |         |         |        |       |      |
| 4. Neg. Feel.   | -0.12** | 0.17**  | 0.17**  | –       |         |         |         |         |        |       |      |
| 5. Ration.      | 0.50    | 0.37**  | 0.33**  | 0.24**  | –       |         |         |         |        |       |      |
| 6. Coerce       | -0.01   | -0.12** | -0.04   | 0.18**  | -0.27** | –       |         |         |        |       |      |
| 7. Referent     | -0.06   | 0.34**  | 0.24**  | 0.41**  | 0.26**  | 0.14**  | –       |         |        |       |      |
| 8. Promise      | 0.09*   | 0.46**  | 0.45**  | 0.32**  | 0.46**  | -0.10** | 0.50**  | –       |        |       |      |
| 9. Use          | -0.31** | -0.18*  | -0.16** | 0.15**  | -0.13** | 0.08*   | 0.13**  | -0.04   | –      |       |      |
| 10. Target      | 0.06    | -0.01   | -0.04   | 0.01    | 0.16    | -0.03   | 0.04    | 0.04    | -0.05  | –     |      |
| 11. Senseek     | -0.20   | -0.08*  | 0.09*   | 0.08*   | -0.10*  | 0.01    | -0.04   | -0.13** | 0.24** | -0.07 | –    |
| 12. VAggr       | -0.11** | -0.002  | -0.08   | -0.10** | -0.03   | -0.14** | -0.14** | -0.53   | 0.02   | -0.03 | 0.11 |

Note:  $N = 720$  for all correlations. Strategies include direct request, positive feeling, compromise, negative feeling, rationality, coercion, referent appeal, and promise. Use (never used = 0, used = 1). Target (close friend = 0, acquaintance = 1). Senseek is sensation seeking. VAggr is verbal aggressiveness.  
 \*  $p \leq .01$ ; \*\*  $p \leq .001$

**Table 2.** Means and standard deviations for strategies, justifications, and targets ( $N = 720$ )

|            | Target | Justification         |                       |                       |                       |
|------------|--------|-----------------------|-----------------------|-----------------------|-----------------------|
|            |        | Party                 | Stay awake            | Get high              | Study                 |
| Rational.  | CF     | (2.02, 1.03) $n = 90$ | (1.85, 1.01) $n = 88$ | (1.97, 1.08) $n = 91$ | (1.62, 0.83) $n = 90$ |
|            | A      | (2.16, 1.10) $n = 90$ | (1.78, 0.80) $n = 90$ | (2.18, 1.20) $n = 90$ | (1.87, 1.01) $n = 91$ |
| Promise    | CF     | (2.13, 0.89) $n = 90$ | (2.10, 1.05) $n = 88$ | (2.14, 1.14) $n = 91$ | (2.06, 0.95) $n = 90$ |
|            | A      | (2.12, 1.03) $n = 90$ | (2.17, 0.94) $n = 90$ | (2.36, 1.12) $n = 90$ | (2.14, 1.07) $n = 91$ |
| Pos. Feel. | CF     | (2.31, 1.12) $n = 90$ | (2.39, 1.02) $n = 88$ | (2.22, 1.08) $n = 91$ | (2.30, 1.04) $n = 90$ |
|            | A      | (2.18, 0.99) $n = 90$ | (2.21, 0.96) $n = 90$ | (2.47, 1.17) $n = 90$ | (2.24, 1.06) $n = 91$ |
| Compr.     | CF     | (2.56, 1.17) $n = 90$ | (2.52, 1.06) $n = 88$ | (2.48, 1.19) $n = 91$ | (2.28, 1.20) $n = 90$ |
|            | A      | (2.19, 1.13) $n = 90$ | (2.51, 1.26) $n = 90$ | (2.47, 1.29) $n = 90$ | (2.24, 1.18) $n = 91$ |
| Ref. App.  | CF     | (2.76, 1.20) $n = 90$ | (2.59, 1.19) $n = 91$ | (2.77, 1.28) $n = 91$ | (2.94, 1.27) $n = 90$ |
|            | A      | (2.63, 1.05) $n = 90$ | (2.97, 1.10) $n = 90$ | (2.90, 1.23) $n = 90$ | (2.98, 1.23) $n = 91$ |
| Dir. Req.  | CF     | (2.93, 1.35) $n = 90$ | (3.32, 1.25) $n = 88$ | (3.02, 1.40) $n = 91$ | (3.00, 1.46) $n = 90$ |
|            | A      | (3.22, 1.42) $n = 90$ | (3.08, 1.34) $n = 90$ | (3.48, 1.27) $n = 90$ | (3.13, 1.44) $n = 91$ |
| Neg. Feel. | CF     | (3.24, 1.20) $n = 90$ | (2.93, 1.22) $n = 88$ | (3.18, 1.18) $n = 91$ | (3.19, 1.31) $n = 90$ |
|            | A      | (3.11, 1.28) $n = 90$ | (3.00, 1.20) $n = 90$ | (3.24, 1.14) $n = 90$ | (3.33, 1.22) $n = 91$ |
| Coerce     | CF     | (4.61, 0.77) $n = 90$ | (4.42, 1.05) $n = 88$ | (4.64, 0.62) $n = 91$ | (4.74, 0.57) $n = 90$ |
|            | A      | (4.52, 0.78) $n = 90$ | (4.56, 0.82) $n = 90$ | (4.49, 0.91) $n = 90$ | (4.66, 0.72) $n = 91$ |

Note: CF = close friend; A = acquaintance. Strategies include rationality, promise, positive feelings, compromise, referent appeal, direct request, negative feelings, and coercion.

from a person with a legitimate prescription and will be less likely to report using *negative feelings* and *coercion*. Results indicated a significant strategy effect, Wilk's  $\Lambda = 0.22$ ,  $F(3, 717) = 868.50$ ,  $p < .01$ ,  $\eta^2 = 0.78$ . Individuals were most likely to use *rationality* ( $M = 1.93$ ,  $SD = 1.03$ ) and least likely to use *coercion* ( $M = 4.58$ ,  $SD = 0.80$ ) to obtain a prescription stimulant. However, after



rationality, individuals were more likely to use *promise* ( $M = 2.15, SD = 1.03$ ) than *positive feelings* ( $M = 2.29, SD = 1.06$ ) and, after *coercion*, individuals were less likely to use *negative feelings* ( $M = 3.15, SD = 1.22$ ) or *direct request* ( $M = 3.15, SD = 1.40$ ) to obtain prescription stimulants. Thus, Hypothesis 1 was partially supported. Pairwise comparisons were conducted for the eight strategies to assess significant mean differences among the pairs. All but one of the comparisons were significant (ie, negative feelings versus direct request), controlling for Type 1 error across the 28 tests at the .05 level, using the Holm's sequential Bonferroni procedure.

**Strategy selection for close friend versus acquaintance.** A series of independent-sample *t*-tests were conducted to explore Research Question 1 about mean differences in the eight strategies for obtaining a prescription stimulant from a close friend versus an acquaintance. Results were non-significant for the eight influence strategies: *direct request*  $t(718) = -1.57, p = 0.12$ ; *positive feelings*  $t(718) = -0.37, p = 0.71$ ; *compromise*  $t(718) = 1.21, p = 0.23$ ; *negative feelings*  $t(718) = -0.38, p = 0.70$ ; *rationality*  $t(718) = -1.67, p = 0.09$ ; *coercion*  $t(718) = .80, p = 0.42$ ; *referent*  $t(718) = -1.16, p = 0.25$ ; and *promise*  $t(718) = -1.15, p = 0.25$ . Thus, results for Research Question 1 indicate there are no significant differences in individuals' selection of influence strategies for persuading a close friend versus an acquaintance to give him/her a prescription stimulant medication.

**Strategy selection for justification.** Eight one-way ANOVAs were conducted to test Research Question 2, which asks if respondents' reported strategy choices for obtaining a prescription stimulant differ for each justification. One significant main effect was found for *rationality*,  $F(3, 716) = 5.38, p < 0.01$ , partial  $\eta^2 = 0.02$ . Levene's test was not significant; therefore post hoc tests assuming equal variance were conducted. Pairwise comparisons among the four justifications indicated that individuals were significantly more likely to use rationality to obtain a prescription stimulant to *study* ( $n = 181, M = 2.07, SD = 0.93$ ) and *stay awake* ( $n = 178, M = 1.81, SD = 0.90$ ) than they were to use rationality to obtain a prescription stimulant to *party* ( $n = 180, M = 2.09, SD = 1.06$ ) or to *get high* ( $n = 181; M = 2.07, SD = 1.04$ ). Results for *direct request*  $F(3, 716) = 0.77, p = 0.51$ , partial  $\eta^2 < 0.01$ ; *positive feelings*  $F(3, 716) = 0.28, p = 0.84$ , partial  $\eta^2 < 0.01$ ; *compromise*  $F(3, 716) = 1.68, p = 0.17$ , partial  $\eta^2 < 0.01$ ; *negative feelings*  $F(3, 716) = 2.01, p = 0.1$ , partial  $\eta^2 < 0.01$ ; *coercion*  $F(3, 716) = 0.77, p = 0.51$ , partial  $\eta^2 < 0.01$ ; *referent appeal*  $F(3, 716) = 1.57, p = 0.28$ , partial  $\eta^2 < 0.01$ ; and *promise*  $F(3, 716) = 0.74, p = 0.53$ , partial  $\eta^2 < 0.01$ , indicated no significant mean differences for justification. That is, rationality was the only compliance-gaining strategy to vary according to the justification. For the other seven strategies there was no likelihood of use according to the reason for the request.

### Verbal aggression and strategy selection

Pearson-product moment correlations were conducted to test Hypothesis 2, that verbal aggressiveness will be inversely related to the use of compliance-gaining strategies such as coercion, negative manipulation of feelings and direct request. Results indicated a significant negative correlation between verbal aggressiveness and use of *coercion*,  $r(719) = -0.14, p \leq .01$ ; *negative feelings*,  $r(719) = -0.10, p \leq .01$ ; *direct request*,  $r(719) = -0.11, p \leq .01$ ; and *referent appeal*,  $r(719) = -0.14, p \leq .01$ . That is, individuals who scored lower in verbal aggressiveness reported likelihood of using *coercion*, *negative feelings*, *direct request* and *referent appeal* compliance-gaining strategies to obtain a prescription stimulant for illicit use. Thus, Hypothesis 2 was not supported.

### *Illicit prescription stimulant use and sensation seeking*

An independent-sample *t*-test was conducted to test Hypothesis 3, that individuals who reported prior illicit use of prescription stimulants ( $n = 220$ ) would score higher in sensation seeking than individuals who reported no prior illicit use of prescription stimulants ( $n = 500$ ). Levene's Test was significant,  $F(1, 718) = 6.45, p < 0.01$ , indicating a violation of the equality-of-variance assumption; therefore, the *t*-value not assuming equal variance is reported:  $t(483.81) = -7.07, p < 0.01$ . The results indicate that individuals who reported prior illicit prescription stimulant use scored higher in sensation seeking ( $M = 3.65, SD = 0.73$ ) than did individuals who reported no prior illicit use of prescription stimulants ( $M = 3.27, SD = 0.63$ ). Thus, Hypothesis 3 was supported.

## **Discussion**

This study examined college students' illicit use of prescription stimulant medications and the compliance-gaining strategies that they are likely to use to obtain these medications from those with legitimate prescriptions. Prior studies have documented prescription stimulant abuse and misuse, as well as students' motives for using them and the dangers associated with them<sup>5</sup>. Results from the present study may have implications for designers of health campaigns targeting this growing trend and for teaching those with legitimate prescriptions to better resist others' persuasive attempts to obtain medications from them. Prior research informs us that adolescents use drug resistance strategies more easily with strangers, but are unlikely to use them with family, friends and acquaintances. Additionally, we know that adolescents recruit others to engage in risky behaviours such as drug use<sup>30</sup>. A better understanding of college students' compliance-gaining strategy use may inform public health professionals and health campaign designers in creating interpersonal skills preventions to allow prescription holders to better resist others' requests for their medications.

### *Findings for strategy selection*

Results indicated that respondents were more likely to use rationality, promise, and positive feelings strategies to gain others' compliance than they were to use direct request, negative feelings, or coercion. Such findings are consistent with politeness theory's notion of going *off-record* to avoid threatening one's own and the other person's face<sup>33</sup>. Going off-record implies ambiguity about one's intentions so that the person cannot be held responsible for the particular content (eg, 'My car is out of gas. I guess I can't go to the party'). In this study, rather than use face threatening and impolite strategies such as direct requests, coercion, or displaying negative feelings (eg, acting sad, hurt or dejected), respondents reported that they would be more likely to offer justifications (ie, rationality) for why they wanted the person to give them a prescription stimulant (eg, 'I had a really stressful week') or they would promise to return a favour in the future. The findings have implications for teaching resistance techniques such that understanding the justifications individuals are likely to use may help legitimate prescription holders to anticipate others' requests and formulate face-saving messages in response.

*Strategy selection for close friend versus acquaintance.* The compliance-gaining strategies individuals reported that they would be likely to use did not differ significantly for a close friend versus an

acquaintance. That is, respondents were no more likely to act particularly nicely, to promise to return the favour, to threaten, or act hurt or dejected when persuading a close friend for a prescription stimulant compared to persuading someone that they did not know that well. In this study, we used scenarios involving a close friend and an acquaintance, rather than a close friend and a stranger, as research indicates that most adolescents and young adults know others from whom they can obtain (eg, purchase) the medications<sup>16</sup>. Thus, it seemed less likely that they would approach a stranger to accomplish this goal.

Regardless, the findings are consistent with prior interpersonal influence literature suggesting that individuals are concerned with efficient and/or appropriate strategies based on the goals they wish to pursue and to a lesser extent the person they are attempting to persuade or the context in which the compliance-gaining attempt is occurring<sup>12,13</sup>. For example, coercion is perceived as inappropriate and inefficient for gaining assistance (eg, ask a favour, obtain information) while explaining (ie, rationality) and asking (ie, direct request) are perceived as appropriate and efficient<sup>14</sup>. Respondents in this study reported more likelihood of using rationality for requesting a prescription stimulant from close friends and acquaintances than using direct requests even though both strategies are perceived as appropriate and efficient. Thus, it may be that obtaining a prescription stimulant is a distinct goal uniquely different from others in terms of its threats to face and behavioural constraints. Better understanding of what distinguishes this goal from other similar goals (eg, asking for marijuana or alcohol) may lead to designing more effective resistance messages.

**Strategy selection for justification.** Results for justification for obtaining a prescription stimulant for illicit use indicated that respondents were significantly more likely to use rationality to persuade another person to give them a prescription stimulant to study all night for final exams and to stay alert for class, but were less likely to use rationality when asking for a prescription stimulant to party or get high. That is, individuals reported being more likely to explain the reasons why they wanted the person to give them the medication for task-related purposes (ie, study, stay alert) than for recreation-related purposes (ie, party, get high). These findings suggest that perhaps college students who illicitly use stimulant medications for academic/task-related purposes provide more reasons in order to 'save face', while those who obtain the medications for recreational purposes are less concerned with face issues.

Alternatively, individuals diagnosed with ADHD are typically prescribed stimulant medications to improve their concentration and some young people perceive these medications as safe compared to other illegal drugs such as marijuana<sup>8</sup>. Thus, it may be that it is easier to provide reasons for obtaining a prescription stimulant to improve academic performance than it is to provide reasons for obtaining them for other risk behaviours such as getting high. Future research should explore the norms surrounding the use of *legal* (ie, prescription) versus illegal drugs.

For all the other strategies (eg, direct request, positive and negative feelings, promise etc.) there was no difference in likelihood of use according to the justification for the request. This suggests that although the justifications for obtaining the prescription stimulants may be different (ie, to study etc.) the overall goal of obtaining a prescription stimulant for illicit use is similar across all four justifications. That is, individuals would be just as likely to use compromise or coercion to obtain a prescription stimulant to *study* as they would be to obtain the medication to *get high*. However, as mentioned earlier, it may be that obtaining a prescription stimulant is perceived as a distinct goal unique from other *gain assistance* goals (eg, ask a favour, obtain information) and one in which rationality is the compliance-gaining strategy of choice. Finally, respondents may not perceive obtaining a stimulant for illicit use as a *big deal*. That is, perhaps they are more likely to report using rationality because they are confident that it would not be difficult to gain a target's compliance. Thus, they would not need to resort to coercion, negative feeling, compromise, hints etc. to accomplish the goal.

### *Verbal aggressiveness and strategy selection*

Although verbally aggressive individuals tend to produce messages that make people feel less favourably about themselves<sup>18</sup>, our findings that individuals scoring lower in VA were more likely to report using coercion, negative feelings, direct requests, and referent appeals suggest something different. One explanation for the interesting findings may be that individuals who are not necessarily verbally aggressive, are comfortable using less polite compliance gaining strategies (ie, threats, coercion etc.) to get what they need from friends and acquaintances. Another explanation may be that individuals are more concerned with efficiency (eg, direct requests) than with politeness (eg, promise) when obtaining a prescription stimulant for illicit use. Prior research however, indicates that adolescents may be able to 'just say no' to offers of drugs from strangers<sup>30</sup> but saying no to friends and acquaintances is unlikely. Thus, future research should explore differences in message selection for both gaining and resisting compliance.

### *Sensation seeking and illicit use*

Sensation seeking has been shown to be a strong predictor of individuals' involvement in numerous risky behaviours (eg, reckless driving, dangerous drinking and illicit drug use). Indeed, respondents who reported prior illicit prescription stimulant use scored significantly higher in sensation seeking than did those who reported no prior illicit use of prescription stimulant medications, lending support to the notion that sensation seeking individuals tend to prefer novel and exciting experiences and are willing to take physical and social risks when doing so<sup>25</sup>. Prior studies report that between 13 per cent and 35 per cent of undergraduate students are illicitly using prescription stimulant medications<sup>34</sup>. Our finding that 4.7 per cent of respondents reported currently taking stimulant medications prescribed by a physician, while 30 per cent of respondents reported prior illicit prescription stimulant use is consistent with those studies and suggests that the trend continues. Future research, however, should continue to look at other factors influencing college students' illicit use of prescription stimulants. For example, Yanovitzky<sup>28</sup> found that sensation seeking had both a direct and an indirect influence on college students' alcohol use by the way it shapes interactions with peers, and suggested that interventions that limit high sensation seekers' association with alcohol using peers and/or increases interactions with normative peers may supplement mass media efforts. Thus, continued research to understand the role of sensation seeking and peer influence on college students' illicit use of prescription stimulants is necessary for designing effective interventions.

### *Limitations*

There are limitations to the present study that should be addressed. First, although the study's focus was on college students, the somewhat homogeneous nature of the sample limits generalizability to other young adult populations; yet our sample is more balanced than other studies. It may be however, that other young adults (eg, high school students) have different norms for gaining compliance from others. A second limitation is that we used hypothetical compliance-gaining scenarios which asked respondents to imagine asking a person for a prescription stimulant. Care should be taken in generalizing these findings. Another approach would be to explore differences, if any, in the strategies individuals select and those that they generate. Finally, the nature of a hypothetical scenario itself is a limitation; manipulation checks did indicate that the scenarios were perceived as realistic and there is reason to believe that findings based on hypothetical scenarios can provide a useful theoretical basis for further understanding.

## Conclusions

Prescription stimulant medications such as Adderall and Ritalin are just two of many such medications circulating on college campuses. The rise in the use of all types of prescription medications has been attributed to their increased availability, a growing social acceptance of sedative, pain-killer, anti-anxiety and stimulant medications, and the perception that medications prescribed by a physician are safe<sup>8</sup>. However, prescription medication use without a prescription is illegal. A compliance-gaining perspective provided a means to explore strategies college students are likely to use when attempting to obtain prescription stimulants (for illicit use) and we found several avenues that offer possibilities for new understandings for how individuals gain compliance in interpersonal influence attempts.

First, individuals reported that they would select similar strategies for persuading both a close friend and an acquaintance for a prescription stimulant and verbal aggressiveness was not associated with the use of less polite compliance-gaining strategies. Future research however, should investigate whether there are differences in individuals' strategy selection and their actual messages. Second, this study looked at sensation seeking as a factor influencing college students' illicit use of prescription stimulants. The findings provide information for designers of health interventions. Health campaigns have targeted dangerous drinking on college campuses<sup>35</sup>; however, we must also consider new health interventions that inform college students of the dangers associated with illicitly using prescription stimulants, as well as interventions for teaching resistance skills to individuals who are targets of others' persuasive attempts. Thus, continued research is necessary to combat this growing trend.

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