Marijuana consequences in a motivational context: Goal congruence reduces likelihood of taking steps toward change☆

Jeffrey S. Simons *, C. Joseph Clarke, Raluca M. Simons, Philip J. Spelman

University of South Dakota, United States

HIGHLIGHTS

- Motivational context of marijuana use predicts problem recognition.
- Motivational context of marijuana use predicts costs and benefits of change.
- Concordance between personal strivings and use may be a barrier to treatment.
- Marijuana problems are associated with increased costs and benefits of change.
- Cost and benefits of change mediate problem recognition effect on taking steps.

ARTICLE INFO

ABSTRACT

This study tested a model of marijuana use, problems, and motivation and barriers to change among a sample of 422 undergraduate students ages 18–25 ($M = 19.68$, $SD = 1.60$) who used marijuana at least once in the past 6 months. We tested a structural equation model (SEM) with use motives (i.e., coping, enhancement, and expansion), perceived use utility, and gender as exogenous variables predicting marijuana use behavior (i.e., use and problems), motivation to change (i.e., problem recognition and perceived costs and benefits of change), and the ultimate outcome, taking steps to reduce marijuana use. Controlling for level of use and problems, expansion motives had a direct effect on increased perceived costs of change and enhancement motives had direct inverse effects on problem recognition and perceived benefits of change. However, the total effect of expansion motives on taking steps was not significant. The perceived role of marijuana in achieving personal strivings (i.e., use utility) was inversely associated with problem recognition, perceived benefits of change, and taking steps toward change. In contrast, coping motives, despite being associated with greater perceived costs of change, were positively associated with taking steps. Problem recognition was positively associated with both increased perceived costs and benefits of reducing marijuana use, reflecting individuals' ambivalence about change. As expected, perceived benefits and costs of reducing use were positively and negatively associated with taking steps toward changing marijuana use, respectively. The results identify individual difference factors that contribute to motivation for change and are consistent with motivational models of change readiness. These results highlight the extent to which integration of marijuana use with personal goal achievement may interfere with taking steps to change use patterns despite associated negative consequences.

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1. Introduction

Marijuana is the most common illicit drug used on college campuses and a sizeable minority experience significant negative consequences (Simons, Dvorak, Merrill, & Read, 2012a; Simons, Gaher, & Wray, 2012b). For example, 9–10% of marijuana users (i.e., at least monthly) report marijuana use has resulted in poorer academic performance, 3–9% report negative consequences related to interpersonal conflict (e.g., arguments, physical fights, insults), 4–6% report sexual risk behaviors, and more than 50% report driving under the influence of marijuana (Simons, Dvorak, et al., 2012a). As is true with other drugs of abuse, many individuals continue use despite the associated negative consequences. Continued use despite negative consequences is a hallmark symptom of substance use disorder (American Psychiatric Association, 2013). Identifying factors that contribute to this, or conversely, the likelihood of taking steps toward change, is an important research

goal. In this regard, problem recognition and the perceived costs and benefits of reducing use are central determinants of motivation for change (Connors, DiClemente, Velasquez, & Donovan, 2013a). Marijuana use is a goal-directed activity that has functional significance for individuals (Elliott & Carey, 2013; Simons, Gaher, Correia, Hansen, & Christopher, 2005a). Rates of marijuana use are associated with its perceived utility in achieving important ongoing goals, personal strivings (Simons & Carey, 2003, 2006). Similarly, use motives are associated with patterns of use and the likelihood of experiencing problems (Simons et al., 2005a). Hence, motives and perceived use utility may affect individual's evaluations of their use and associated consequences (i.e., problem recognition) as well as the perceived costs and benefits of making change. The goal of this paper is to test a model of the motivational context of marijuana consequences and how this context influences individual perception of consequences and potential behavioral change.

We hypothesize that the motivational context of marijuana use is not only associated with problem recognition and change readiness indirectly via effects on use and problems, but rather has direct effects on the perceptions of problems and motivation for change. Evaluation of a self-directed behavior necessarily entails considering the behavior within a personal context. That is, evaluation of behavior likely entails consideration of whether the behavior is compatible with personal goals and values, consideration of relevant risks, costs, and benefits, and evaluating potential behavioral alternatives. Substance use motives, perceived use utility of substances in achieving personal strivings, religiosity, and a host of other social-cognitive variables have been associated with individual differences in substance use behavior (Simons, Gaher, Correia, Hansen & Christopher, 2005a; Walker, Ainette, Wills, & Mendoza, 2007). We theorize that these factors are relevant not only to the development of substance use and problems, but also to understanding individual differences in variables related to motivation for change. That is, the motivation for using a drug and its perceived effects on important life goals should have effects on the evaluations of potential consequences as well as perceived costs and benefits of changing use behavior. Fig. 1 presents the conceptual model. In the following sections we present the background and rationale for our specific hypotheses.

1.1. Substance use motives

Motives for substance use can be broadly delineated along two axes reflecting (1) positive and negative reinforcement and (2) internal and external sources (Cox & Klinger, 1990). Cooper (1994) developed the drinking motives measure to assess these dimensions, operationalized as coping motives (internal, negative reinforcement), conformity motives (external, negative reinforcement), social motives (external, positive reinforcement) and enhancement motives (internal, positive reinforcement). Following this model, Simons, Correia, Carey, and Borsari (1998) developed the marijuana motives measure, which adapted these four motives to marijuana use and added a fifth factor (expansion motives) to capture unique effects of the psychedelic drug.

Use motives have unique effects on consumption patterns and importantly, the likelihood of problems. Coping motives, in particular, account for unique variance in substance-related problems that is not accounted for by levels of use (Mezquita, Stewart, & Ruiperez, 2010; Simons et al., 2005a; Willem, Bijttebier, Claes, & Uytterhaegen, 2012). Coping, enhancement, and expansion motives share a common focus on internal sources of reinforcement and are central to this paper. Coping motives account for unique variance in problems over and above the effects of use level, and we therefore expect that motives will predict problem recognition and perceived benefits and costs of change, over and above the effects of negative consequences. Hence, the experience of negative consequences is a necessary but not sufficient predictor of problem recognition and motivation for change (Borsari, Murphy, & Carey, 2009; Connors, DiClemente, Velasquez, & Donovan, 2013b; Qi, Pearson, & Hustad, 2014). We hypothesize that enhancement and expansion motives will be inversely associated with problem recognition. Individuals who endorse enhancement motives are broadly stating that they use marijuana "just for fun" and hence we hypothesize that enhancement motives will be inversely associated with both problem recognition as well as perceived benefits of reducing use. Expansion motives are similarly expected to be inversely associated with problem recognition, given that the individual is endorsing using marijuana for personal growth. However, we posit that expansion motives represent use for relatively unique psychedelic drug effects and hence will be positively associated with perceived costs of reducing use. Finally, we
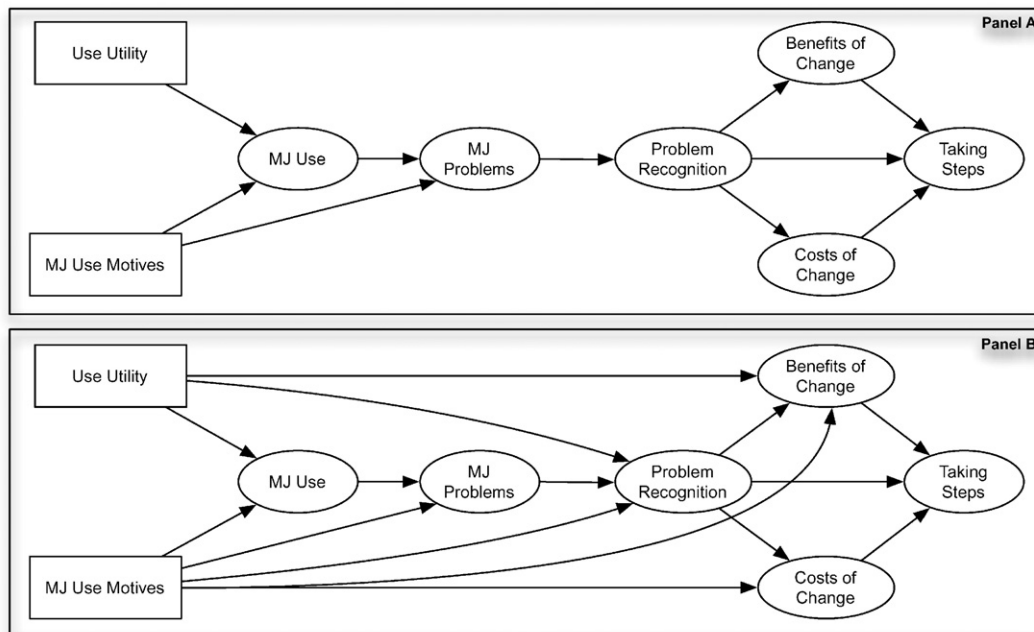

Fig. 1. Conceptual indirect model is depicted in Panel A. Motives and use utility are only associated with problem recognition and change factors indirectly via level of use and problems. Panel B depicts a conceptual hypothesized direct effects model whereby use utility and use motives have direct effects on problem recognition and change factors over and above level of use and problems. MJ = Marijuana.