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Measuring Pain Medication Expectancies in Adults Treated for Substance Use Disorders

Mark A. Ilgen[1,2], **Kathryn M. Roeder**[2], **Linda Webster**[1,2], **Orion P. Mowbray**[3], **Brian E. Perron**[1,3], **Stephen T. Chermack**[1,2], and **Amy S.B. Bohnert**[1,2]

[1] Department of Veterans Affairs, Health Services Research & Development, 2215 Fuller Road (152), Ann Arbor, MI, 48105 USA

[2] Department of Psychiatry, University of Michigan, 4250 Plymouth Road, Ann Arbor, MI, 48109 USA

[3] School of Social Work, University of Michigan, 1080 S. University, Ann Arbor, MI 48109 USA

Abstract

Background—The U.S. prevalence of misuse of prescription opioid analgesics has increased substantially over the past decade but research on the factors influencing misuse of these medications remains preliminary. In the literature on alcohol, marijuana and stimulants, substance-related expectancies have been found to predict level of substance alcohol use. A similar line of research is needed to better understand reasons for misusing pain medications.

Methods—This study utilized a sample of adults presenting to a large residential addictions treatment program (N = 351). Participants were administered a new instrument, the Pain Medication Expectancy Questionnaire (PMEQ) as well as questions about current alcohol, illegal drug and pain medication misuse. Exploratory factor analysis was used to determine underlying factors of the PMEQ.

Results—Results of the factor analysis supported a three-factor solution focusing on pleasure/social enhancement, pain reduction and negative experience reduction. In general, greater perceived expectancy of the positive effects of Prescription Opiate Analgesics (POAs) in all three domains were correlated with greater frequency of substance use and poorer mental health functioning. Expectancies directly related to the pain-reducing properties of POAs were also related to greater pain and poorer physical functioning.

Conclusions—This new measure of pain medication expectancies had sound psychometric properties and the resulting factors were associated with other clinically important aspects of patient functioning. The results highlight the need to assess for and address perceptions related to pain medication use in patients presenting to addictions treatment.

Keywords

Addictions treatment; opioid analgesics; opioid dependence; expectancies

Corresponding Author: Mark Ilgen, 4250 Plymouth Rd, Ann Arbor, MI 48109-2700, Phone: 734-232-0424, Fax: 734-615-8739, marki@umich.edu.

1. Introduction

The misuse of prescription opioid analgesics (POAs) represents a significant and growing public health concern (Compton and Volkow, 2006). A broad definition of misuse of POAs encompasses taking medications in a way that is inconsistent with how they were initially prescribed to treat a medical problem (e.g., using another person's POA to treat one's own pain) or use of POAs for recreational reasons (e.g., to get high; see McCabe et al., 2009). After marijuana, POAs are the second most common group of illegal drugs misused by individuals 12 and older in the United States, and the misuse of POAs has increased dramatically in the past decade (SAMHSA, 2009). Corresponding to this increase, the number of arrests for POAs and the number of POA-related overdoses in the US have risen sharply in recent years (Paulozzi, 2006; Paulozzi et al., 2006; Paulozzi and Ryan, 2006; Paulozzi and Xi, 2008). Given the high prevalence and negative consequences of POA misuse, there is a clear need to understand the factors influencing the decision to misuse these medications. Such an understanding is essential to developing effective intervention strategies for POA abuse.

Research on alcohol use has examined outcome expectancies as possible determinants of alcohol consumption (see Jones et al., 2001, for review). Outcome expectancy theory developed from a social learning perspective and posits that an individual's behavior can be explained by the individual's expected outcomes of that behavior (Brown et al., 1980). Within this framework, the decision to use alcohol is driven by the expected consequences of alcohol consumption, and individuals tend to consume alcohol in a manner that produces the expected effects (Jones et al., 2001). It is not necessary for the expectancies themselves to be valid; expectancies can influence behavior even if they are factually untrue.

In order to assess for the role of alcohol-related expectancies in alcohol consumption, Brown and colleagues (1980) developed the Alcohol Expectancy Questionnaire (AEQ). This 90-item self-report questionnaire asks participants to rate their belief that moderate quantities of alcohol could produce particular effects, which are categorized into six factors: (1) global positive changes, (2) sexual enhancement, (3) physical and social pleasure, (4) increased social assertiveness, (5) relaxation and tension reduction, and (6) arousal and aggression. Several additional measures of alcohol expectancy have been subsequently developed, including the Alcohol Effects Questionnaire (Southwick et al., 1981), the Drinking Expectancy Questionnaire (Young and Knight, 1989), the Comprehensive Effects of Alcohol Questionnaire (Fromme et al., 1993), the Negative Alcohol Expectancy Questionnaire (McMahon and Jones, 1993a, 1993b), and the Temptation and Restraint Inventory (Collins and Lapp, 1992). These measures have been used in a range of research designs that provide substantial support for the role of outcome expectancies in drinking behaviors (Jones et al., 2001). Self-reported positive expectancies are significantly and positively associated with alcohol consumption, while negative expectancies are inversely related to drinking behaviors (Brown et al., 1987; Christiansen and Goldman, 1983; Fromme and D'Amico, 2000; Fromme et al., 1993). Expectancies are correlated with the quantity of alcohol consumed, and this association persists even after controlling for demographic factors such as age or gender (Carey, 1995; Chen et al., 1994; Fromme and D'Amico, 2000; Lee et al., 1999; Mooney et al., 1987).

Importantly, measures of expectancy are predictive of subsequent changes in drinking behaviors. Studies have found alcohol expectancies to predict the transition from non-problem to problem drinking among adolescents (Christiansen et al., 1989; Smith et al., 1995) and college students (Sher et al., 1996). Also, alcohol expectancies have been found to predict the persistence of alcohol dependence among a sample of community young adults (Kilbey et al., 1998). Alcohol expectancies are related to treatment outcome and

compliance among individuals receiving treatment for alcohol misuse (Jones and McMahon, 1994). Because of these associations, outcome expectancies are an important potential target for alcohol use interventions.

Studies of expectancies in illegal drug use have generally paralleled the alcohol expectancy literature with evidence for the importance of drug-related expectancies for predicting current and future drug use (Aarons et al., 2001; Galen and Henderson, 1999; Lundahl and Lukas, 2007; Schafer and Brown, 1991; Schafer and Fals-Stewart, 1996). Compared to the current knowledge of alcohol and illegal drug expectancies, the expectancies related to the effects of POAs have not been closely examined. Further examination of expectancies related to POAs specifically is particularly important because these medications can be used for their intended purpose (i.e., pain management) as well as for other reasons (e.g., relaxation). The extent to which these different types of expectancies are differentially related to substance misuse is unknown. As a basis for this line of research, measures are needed to effectively assess expectancies related to the effects of POAs. The development of such a measure will facilitate future research on the relationship between POA expectancies and persistence of POA misuse over time. Accordingly, this study was designed to develop a measure of POA expectancies and to identify the reliability and factor structure of this measure. Additionally, we examined the association between expectancy factors and other measures of functioning and substance misuse.

2. Methods

2.1. Survey Development

As a first step in the process of developing our measure, the Pain Medication Expectancy Questionnaire (PMEQ), we examined existing measures of alcohol- and drug-related expectancies. The general content of the PMEQ was based on the 120-item Alcohol Expectancy Questionnaire (AEQ; Brown et al., 1987) and the 48-item short form Marijuana Effect Expectancy Questionnaire (MEEQ; Aarons et al., 2001). Both the AEQ and MEEQ are widely used, have shown good reliability in untreated individuals as well as those in treatment and have solid evidence of validity (Aarons et al., 2001; Carey, 1995; Chen et al., 1994; Galen and Henderson, 1999; Jones and McMahon, 1994; Lee et al., 1999; Mooney et al., 1987). The items for the PMEQ were derived from a list of over 100 items paralleling the domains measured by the AEQ and MEEQ. Members of the research group evaluated the items and deleted those which appeared to be redundant or unrelated to medication misuse. Additional items related to pain management were added, and this resulted in a list of 40 self-report items.

In order to clearly define what is meant by “pain medications”, the instructions for the PMEQ state: “The pain medications we are asking about are typically obtained by prescription; Such as Hydrocodone, Oxycodone, Codeine, Levorphanol, Dihydrocodeine bitartrate with aspirin, Methadone, Hydromorphone, Fentanyl, Morphine, Butorphanol, Meperidine, Oxymorphone, Pentazocine, Buprenorphine, and Naloxone.” Additionally, on the last page of the measure, we provide a comprehensive list of the trade and generic names of POAs. Participants are instructed to answer the questions based on their own personal thoughts, feelings, and beliefs, regardless of whether they have ever used or misused pain medication. Participants are then asked “How likely is it that you would use pain medications in the following circumstances?” applied to the list of 40 individual items. Participants rank each potential statement on a 1 to 10 Likert scale (1 = “not likely at all” to 10 = “very likely”).

2.2. Procedures and Participants

The study was conducted from January to November 2009 at a large residential substance use disorder treatment center, Community Programs Incorporated, located in Waterford, Michigan which provides services to a wide variety of patients from the surrounding Flint and Detroit, Michigan areas. Men and women over 18 years of age (N = 351) were recruited by research staff in person via presentations about another ongoing research study made at didactic groups at the treatment site. Those who expressed interest in participating were informed of the study protocol, provided written consent, and completed the initial screening questionnaire. Participants were excluded from participation if they were unable to speak or understand English, unable to provide voluntary written consent, or exhibited any acute psychotic symptoms. All screening measures were self-administered and participants were compensated for their time. Study protocols and materials were approved by the University of Michigan Medical School Institutional Review Board.

The sample was 76.1% male and predominantly Caucasian (67%), with a mean age of 35.6 years (*SD*=10.8). On average, participants had completed 11.8 years of education (*SD*=2.1), 84.3% reported they were currently unemployed, and 17.9% of participants endorsed being married or currently living with a partner. In the 30 days prior to treatment entry, 45% of the sample reported using alcohol to the point of intoxication. The prevalence of past 30 day use of specific drugs was: 39.0% for cocaine, 32.5% for marijuana, 25.4% for opioid analgesics and 21.7% for herion. The average pain level during the past week reported by participants was 2.4 (*SD*=1.8).

2.3. Measures

In addition to the PMEQ, participants were administered a series of other self-report questionnaires related to their demographic characteristics, pain, functioning and substance use.

2.3.1. Pain Intensity—Chronic pain prevalence and intensity were assessed using the Numeric Rating Scale of pain intensity (NRS-I; Farrar et al., 2001), an 11-point numeric rating scale ranging from 0 (no pain) to 10 (worst pain imaginable). For this study, participants were asked to rate their average level of pain during the past week.

2.3.2. Functioning—The Short Form-12 Health Survey (SF-12; Ware et al., 1996) was used to determine levels of physical and mental health functioning. Responses were used to calculate composite scores on both the Physical Component Summary (PCS) and Mental Component Summary (MCS) scales. These scales of the SF-12 have good test-retest reliability, as well as good construct and criterion validity (Ware et al., 1996).

2.3.3. Current Opiate Misuse Measure (COMM)—The COMM is a 17-item self-report measure of current aberrant prescription opioid-related behavior (Butler et al., 2007). Items assess frequency of a thought or behavior over the past 30 days and answer choices range from 0 (never) to 4 (often). Example items include, “How often have you had to take more of your medication than prescribed?” and “How often have you borrowed pain medication from someone else?” The measure provides a good estimate of whether an individual is currently misusing or abusing opioid medication and has been found to have good internal consistency and test–retest reliability in patients seen for pain treatment (Butler et al., 2007).

2.3.4. Days of substance-related problems—Information about participants’ alcohol and drug use was obtained using items from the alcohol and drug sections of the Addictions Severity Index (ASI; McLellan et al., 1980), a measure designed to address potential

problem areas in substance use disorder patients. For the present analyses, we examined two broad indicators of substance-related problems: number of days in the past 30 in which the participant experienced alcohol-related problems and number of days in the past 30 in which the participant experienced drug-related problems.

2.4. Analytic strategy

The 40-item PEMQ questionnaire was analyzed using exploratory factor analysis, with a principal components extraction method. Principal components were rotated using direct oblimin rotations with Kaiser normalization (Costello and Osborne, 2005). The factors assigned names that reflected the conceptual content of the respective items. Factors derived from the factor analysis were then correlated with other clinical measures to help establish model validity.

3. Results

3.1. Exploratory Factor Analysis

A descriptive review of all 40 items of the PEMQ revealed no floor or ceiling effect. All items were approximately normally distributed, although 13 items showed a slight positive skew – that is, greater than |1.0| but less or equal to |1.2|. As indicated by Jaccard and Wan (1996), “for many statistical tests, rather severe departures (from intervalness) do not seem to affect Type I and Type II errors dramatically” (p. 4). Thus, because these were considered minor departures, the raw values were retained rather than excluding the items or performing data transformations.

Initial analyses revealed three factors with an Eigenvalue greater than one. A three-factor model was further supported with a visual inspection of a scree plot. Eigenvalues for the three factors were 26.45, 2.97, and 1.38, accounting for 77.0% of the overall variance (66.1%, 7.4%, and 3.5% respectively). Consistent with best practices in exploratory factor analysis (see Tabachnick and Fidell, 2001), items were considered to be good indicators of the underlying factor if they exhibit moderate to strong loadings on a factor (>.40) and weak cross loadings with other factors. Using these criteria, it was determined that one item did not have an acceptable factor loading (i.e., “how likely is it that you would use pain medication when you want to sleep?”) and was therefore excluded from subsequent analyses (see Table 1). Another item loaded on two factors (i.e., “When you are celebrating a special occasion?”) and was also excluded.

After excluding these two items, analysis was conducted again to determine the stability of results. The results of the two models were consistent – that is, all factor loadings had the same direction of association, and all factor loadings were nearly identical. Thus, the three-factor model was retained as the final model, with the exclusion of the two aforementioned items. The first factor comprised 17 items represented variations of *pleasure/social enhancement* (e.g., to be more romantic, talkative, assertive or less shy). The second factor was comprised of eight items that were directly or indirectly related to *pain reduction* (e.g., to feel less pain, to feel better physically, to feel better after physical activity). The third factor included 13 items related to *negative experience reduction* (e.g., to forget problems, to feel less guilt, to relax, to feel less lonely). Descriptive summaries, estimates of internal consistency, and factor inter-correlations are summarized in Table 2. Estimates of internal consistency were very strong for all three factors (> .90).

3.2. Validation Analysis

The three-factors of the PMEQ were correlated with a set of clinical measures. We anticipated that higher scores on each of the factors would be associated with more pain,

poorer (i.e., lower scores) physical and mental health functioning, more days of alcohol and drug problems and more POA misuse. As presented in Table 3, associations ranged from . 093 to .574; correlations among the measures and the three factors were associated in the hypothesized direction. The measure of factor related to pain reduction was more strongly associated with the measures of pain and poor physical functioning than the other two factors. Both the factors of pleasure/social enhancement and negative experience reduction were associated with more days of alcohol problems whereas the pain reduction factor was not. All factors were associated at similar levels with poorer mental health related functioning, days of drug problems and POA misuse.

4. Discussion

This study describes the development and initial evaluation of the Pain Medication Expectancy Questionnaire (PMEQ). To date, no measures exist that specifically address expectancies associated with pain medication. As demonstrated in research on alcohol, marijuana and cocaine (e.g., Aarons et al., 2001; Jones et al., 2001; Jones and McMahon, 1994; Lundahl and Lukas, 2007), understanding expectancies associated with various substances can help understand the mechanism underlying addictive processes, which can then be used to inform more effective prevention and treatment methods. This study reports on the development of a measure of pain medication expectancies based on an existing expectancy measures with good psychometric properties. Drawing on data from a large clinical sample, an exploratory factor analysis was used to identify a three-factor solution, with each factor exhibiting good internal consistency. Correlations with other clinical characteristics were in the hypothesized direction, which built further confidence in the results of our measure. In general, greater perceived expectancy of the positive effects of POAs were correlated with greater substance use and poorer mental health functioning. Expectancies directly related to the pain-reducing properties of POAs were also related to greater pain and poorer physical functioning.

Two of the factors identified in this study, *pleasure/social enhancement* and *negative experience reduction* are broadly consistent with several factors identified previously in the literature for other substances. Measures of alcohol expectancies and marijuana and cocaine expectancies contain factors that focus on either positive reinforcement (i.e., enhancing a pleasant experience) or negative reinforcement (i.e., decreasing an unpleasant experience) (Aarons et al., 2001; Brown et al., 1987; Fromme and D'Amico, 2000); although the prior scales developed for these substances typically include more than three factors. This prior research on other substances generally indicates that both the greater perception of the pleasurable effects of the substance and a sense that the substance can decrease negative experiences predict current severity of substance use as well as future substance use. Other measures have also examined whether the negative expectancies (i.e., concerns that use may be harmful) are associated with reduced use of the substance (i.e., Aarons et al., 2001). The present measure did not include items specifically focused on concerns related to POA misuse. It is possible that inclusion of these items would strengthen the present measurement of expectancies and provide insights into who might be less likely to misuse POAs.

One unique contribution of the PMEQ to our understanding of substance-related expectancies was the inclusion of items that loaded onto a factor related to expected pain relief. Inclusion of this factor is important because others have hypothesized that individuals who misuse POAs primarily for pain relief may be at lower risk of developing substance-related problems (Boyd et al., 2006) than those who misuse POAs for other reasons. Among adolescents, Boyd and colleagues found that those who reported misuse of POAs for pain relief reported fewer symptoms associated with a substance use disorder than those who reported using POAs for recreational reasons. The present study focused on expectancies

instead of motivation in a sample of individuals seeking treatment for a substance use disorder. However, correlations between the *pain reduction* subscale of the PMEQ and measures of alcohol, illicit drug and POA misuse provide insights into how perceived pain relief may relate to misuse of different substances. Results indicate that the *pain reduction* factor of the PMEQ correlates significantly with measures of POA misuse and drug problems; the association between this factor and alcohol problems was not significant. Additionally, the magnitude of association between the *pain reduction* factor and measures of substance-related problems was similar to the other two PMEQ factors. These findings suggest that in those seeking treatment for a substance use disorder, pain reduction expectancies are not uniquely related to lower substance-related problems. It is possible that in a less-severe sample, different patterns would emerge. It is also possible that, over time in those already predisposed to substance-related problems, even those who initially misused POAs because of the perception that they would help reduce pain went on to develop other substance-related problems of a magnitude that was similar to those who had different expectancies related to POAs underlying their initial use. An additional potential explanation is that many of those individuals with high pain reduction expectancies also had high expectancies for pleasure/social enhancement or negative experience reduction (as evidenced by the strong correlation between factors), and the high level of expectancy on these other factors drove the correlation between pain reduction expectancy and POA misuse. Future work could examine how different combinations of POA expectancies are uniquely related to POA misuse. Also, research in non-clinical samples is needed to better understand the role that specific types of expectancies play in the progression of POA misuse, abuse and dependence.

Emerging observational evidence indicates higher pain at the start of an episode of substance use disorder predicts poorer treatment outcomes (Caldeiro et al., 2008; Larson et al., 2007). In this study, higher expectancies regarding the use of POAs to reduce pain were significantly correlated with more pain and poorer physical functioning. In future work, it will be important to examine how expectancies related to *pain reduction* predict post-treatment substance use and how this relationship might differ in those with and without significant pain at treatment entry.

Population level data indicate that POA misuse has increased dramatically over the past decade and drug and alcohol treatment programs are likely to see an increasing number of patients with recent use, misuse, abuse and dependence on POAs. POAs are different from some other substances of abuse because they have legally recognized medical uses. In all likelihood, most treatment programs have policies related to the use of POAs for medical reasons during an episode of treatment. However, beyond pain management during treatment, programs should consider utilizing clinical strategies to help patients avoid pain medication misuse following treatment. One approach that would integrate well into existing cognitive behavioral models is to assess for POA-related expectancies and discuss the validity of these beliefs. Additionally, programs could discuss alternative strategies to help patients achieve their goals (i.e., other ways to reduce stress or manage pain) that do not involve POA misuse. Prior work indicates that expectancies differ from one substance to another (Aarons et al., 2001) and differentially predict future patterns of substance use. By adding a focus on POAs to an existing treatment episode, addictions treatment programs could directly focus on reducing POA misuse in their patients.

Although the initial results of the PMEQ suggest potential for building knowledge in pain medication research, it is important to highlight limitations. The study was conducted in a single residential addictions treatment program in the Midwestern United States. Further psychometric investigation is necessary to demonstrate a stable factor structure among other groups sampled from both community and clinical settings. This subsequent research should

also employ confirmatory factor analysis to further support the factor structure, in addition to considering other types of reliability (e.g., test-retest) and validity analyses (e.g., convergent and predictive). The present study did not include any other measure of substance-related expectancies. It is important to examine whether the factors identified in the PMEQ are uniquely related to POA misuse or reflect broader substance-related expectancies that apply across different substances. In addition, in future work, it is important to examine whether negative POA expectancies are associated with lower likelihood of POA misuse.

Despite these limitations, this is the first study of which we are aware to examine expectancies related to prescription opioids. The measure that was developed, the PMEQ, had a three factor structure and higher scores on each factor were associated with more substance related problems. These findings highlight the importance of better understanding beliefs about prescription opioids in individuals seeking substance use disorder treatment. Given the evidence that POA misuse is increasing on a national level, it is likely that substance use disorder treatment programs will need to pay increasing attention to the identification and treatment of POA-related problems in their patients. The PMEQ could be useful in this process.

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Table 1

Descriptive statistics, factor structure, and factor loadings of the Pain Medication Expectancy Questionnaire

	Mean (SD)	Factors		
		1	2	3
How likely is it that you would use pain medication when you want to sleep?[1]	4.28 (3.33)	.170	.374	−.332
When you are celebrating a special occasion?[2]	3.82 (3.43)	.560	.006	−.400
When you want to feel more romantic?	3.18 (3.08)	**1.017**	−.005	.170
When you want to feel sexier?	3.08 (3.07)	**.897**	−.042	−.024
When you want to be more talkative?	3.34 (3.23)	**.893**	.022	−.027
When you want to enjoy sex more?	3.68 (3.42)	**.880**	.064	.132
When you want to feel more outgoing?	3.73 (3.35)	**.872**	.091	−.017
When you want to laugh more?	3.31 (3.17)	**.836**	.004	−.103
When you want to be more humorous?	3.19 (3.05)	**.808**	.006	−.126
When you want to feel more creative?	3.27 (3.05)	**.808**	−.021	−.141
When you want to feel more awake?	3.36 (3.23)	**.792**	.053	−.059
When you want to be more assertive?	3.34 (3.16)	**.782**	.058	−.138
When you want to feel brave?	3.28 (3.23)	**.782**	−.016	−.178
When you want to feel less shy?	3.39 (3.30)	**.776**	−.036	−.193
When you want to feel more capable?	3.80 (3.35)	**.773**	.242	.042
When you want to feel more confident?	3.61 (3.23)	**.720**	.075	−.203
When you want to open up or express yourself?	3.33 (3.06)	**.661**	−.011	−.288
When you want to feel less self-critical?	3.38 (3.17)	**.601**	.001	−.362
When you want to decrease your feelings of hostility (anger)?	3.73 (3.35)	**.594**	.036	−.279
When you want to feel less pain?	6.84 (3.37)	.003	**.912**	.050
When you have extreme pain?	7.68 (3.22)	−.160	**.904**	.025
When you have moderate pain?	5.47 (3.07)	.021	**.752**	−.177
When you want to feel better physically?	5.61 (3.61)	.357	**.730**	.146
When you want to feel better after physical activity?	5.08 (3.53)	.354	**.727**	.140
When you have a little pain?	4.65 (3.15)	.044	**.663**	−.234
To help get through your work? (work at home or employment)	4.72 (3.30)	.150	**.606**	−.157
If you have a headache?	5.86 (3.15)	−.117	**.507**	−.304
When you want to forget your problems?	4.32 (3.70)	.145	.051	**−.779**
When you want to forget?	3.80 (3.38)	.111	.064	**−.778**
When you want to be less in touch with what is going on around you?	3.89 (3.49)	.186	.015	**−.741**
When you want to worry less?	4.01 (3.30)	.093	.134	**−.737**
When you want to feel less guilt?	4.03 (3.64)	.329	−.034	**−.663**
When you are drinking alcohol?	3.22 (3.05)	.000	.111	**−.658**
When you want to enjoy a party?	4.05 (3.49)	.232	.127	**−.640**
When you want to relax?	4.96 (3.53)	.016	.444	**−.571**
When you want to feel less frustrated?	4.03 (3.41)	.366	.075	**−.568**
When you want to feel happy?	4.30 (3.58)	.280	.186	**−.554**
When you want to feel less lonely?	3.58 (3.29)	.476	−.073	**−.547**

	Mean (SD)	Factors		
		1	2	3
When you want to have a better time?	4.03 (3.45)	.372	.089	**−.532**
When you want to feel less tense?	4.62 (3.39)	.230	.311	**−.520**

Note: SD = standard deviation.

[1] Item not assigned to factor due to low factor loading.

[2] Item not assigned to factor due to cross-loading. Method of factor extraction based on principal components analysis. Method of rotation was Oblimin with Kaiser Normalization.

Table 2

Descriptive Summary, Internal Consistency, and Inter-correlations for Three-Factors of the Pain Medication Expectancy Questionnaire

			Intercorrelations		
Factor	**Mean (SD)**	**α**	**1.**	**2.**	**3.**
1. Pleasure/social enhancement	3.42 (2.85)	.98	1.00		
2. Pain reduction	5.72 (2.65)	.92	.63	1.00	
3. Negative experience reduction	4.07 (3.02)	.98	.89	.70	1.0

Table 3

Correlations between Factors of the Pain Medication Expectancy Questionnaire and Other Clinical Features

	Pearson Correlations		
Clinical characteristic	**Pleasure/social enhancement**	**Pain reduction**	**Negative experience reduction**
Pain level	.093	.382**	.117*
Physical functioning	−.056	−.237**	−.034
Mental health functioning	−.274**	−.377**	−.351**
Days of alcohol problems	.123*	.099	.118*
Days of drug problems	.240**	.285**	.337**
Opioid medication misuse	.490**	.569**	.574**

* $p < .05$,

** $p < .01$