KNOWLEDGE AND ATTITUDES ABOUT PHARMACOTHERAPY FOR ALCOHOLISM: A SURVEY OF COUNSELORS AND ADMINISTRATORS IN COMMUNITY-BASED ADDICTION TREATMENT CENTRES

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Abstract — Aims: Medications, when combined with psychosocial therapy, can improve treatment outcomes in alcoholics; however, medications are not widely utilized in community-based addiction treatment centres. Of interest is how non-medical addiction treatment professionals in these facilities view adjunctive pharmacotherapies for alcoholism. The present report focuses on baseline data collected during the course of an educational intervention project and explores predictors of positive attitudes about adjunctive pharmacotherapies among community addiction counselors and administrators. Methods: Questionnaires were administered to 84 counselors and administrators at six community-based addiction treatment centres in South Carolina. Demographic data were collected, and knowledge and attitudes regarding the value of pharmacotherapies in the treatment of alcoholism were assessed. Correlation coefficients were explored, and follow-up multiple regression analyses were conducted to examine variables that predict scores reflecting the degree to which one values adjunctive pharmacotherapies for alcoholism. Results: Respondents had little knowledge of naltrexone, with average test scores reflecting no better than chance performance. In addition, most participants believed that adjunctive pharmacotherapy is ineffectual. Higher valuation of adjunctive pharmacotherapy was related to knowledge about naltrexone, having a post-baccalaureate degree, and years of experience in the addictions treatment field. Conclusions: These data support that more widespread use of adjunctive pharmacotherapy for alcoholism may be impeded by the fact that addictions counselors, who are often the first contact for treatment-seeking individuals, have a lack of knowledge and a lack of confidence in the effectiveness of such treatments. Directed educational interventions are warranted for this population.

INTRODUCTION

While most individuals with alcohol problems do not seek treatment, of those that do, a substantial portion receives treatment from a community-based addiction treatment centre (Weisner et al., 1995; Cohen et al., 2006). Counselors at these centres not only develop treatment plans and help guide treatment decisions for alcohol-dependent clients, they also set the tone for which treatments are valued and implemented and which are not.

Substantial evidence supports that FDA-approved medications for alcoholism improve treatment outcomes (for reviews, see Anton and Swift, 2003; Kranzler et al., 2006). While the effect sizes are modest, among treatments for alcohol use disorders, pharmacotherapies rank high in empirical support of efficacy (Miller and Wilbourne, 2002). Despite this, pharmacotherapies are rarely used for alcoholism treatment in community-based addiction treatment centres (Thomas and Wallack, 2001; Thomas et al., 2001; Roman and Johnson, 2002).

Research efforts are increasing to help facilitate technology transfer, and barriers to the use of pharmacotherapy among addiction professionals in community-based treatment centres have been identified. These barriers include lack of knowledge about alcoholism medications (Meza et al., 2001; Thomas and Wallack, 2001; Thomas et al., 2001) or concerns about their modest effects (Mark et al., 2003); fewer years of experience in the alcoholism treatment field (Roman and Johnson, 2002); lower educational degree (Forman et al., 2001); and a belief system that is antithetical to the use of medications (Morgenstern, 2000; Simpson, 2002). This list is not exhaustive, but it reflects some of the most robust findings regarding person-centred characteristics from a host of studies in this area.

The present report utilizes baseline data collected in a study to develop and test an educational intervention for increasing knowledge and attitudes about adjunctive pharmacotherapies for alcoholism among non-medical professionals in community-based addiction treatment centres in South Carolina. The present report (i) presents baseline data on knowledge and attitudes about adjunctive alcohol pharmacotherapies among counselors and administrators and (ii) examines variables that predict how strongly an individual values pharmacotherapies as an adjunctive treatment for alcoholism.

MATERIALS AND METHODS

Participants

Counselors (n = 66) and administrators (n = 18) from six community-based addiction treatment centres in South Carolina participated in the study. These six agencies were identified by the Executive Committee of the Behavioral Health Services Association (the organization to which all county-based addiction treatment agencies in the state belong) as ones that (i) were all similar in size and (ii) were a good representation of the typical addiction treatment agency in the state system. The centres were affiliated with their respective counties, and received partial support for operation from federal block grants. None of the treatment centres contained an on-staff medical provider. All counselors and administrators in each agency were invited to participate in the educational intervention study (which would be conducted over the course of 9 months; the present report presents baseline data from that study). Three individuals declined to participate—one was
retiring within the month and the other two were leaving their agencies for other employment. Participants (n = 84) received continuing education credits for their participation. Agreement to participate was documented by a signed informed consent agreement approved by the IRB at the Medical University of South Carolina. Participants were assured of their confidentiality before data were collected.

Assessment

Demographic questionnaire. In addition to providing standard demographic information (gender, age, race, and education), participants provided data on years of experience in the addiction treatment field, years working at their current treatment centre, and whether they were in recovery for substance use problems.

Naltrexone knowledge test. Participants completed a study-specific written test (10 items) about naltrexone. Response options were true, false, and don’t know. The two latter responses were both considered an incorrect response for test scoring. ‘Don’t know’ was offered as a response option on the questionnaire to collect specific data regarding naltrexone knowledge; specifically, it reveals whether participants were mistaken vs uncertain about naltrexone facts. Items included statements generated from research reports on the utility of naltrexone and from the pharmaceutical package insert for naltrexone. Sample statements are: ‘Naltrexone is approved by the FDA for the treatment of alcohol dependence’ (true); ‘Naltrexone has abuse potential, so it must be administered to the patient daily by a healthcare provider’ (false); and ‘Naltrexone makes a drinker sick if s/he drinks alcohol while taking it, which helps the person stay motivated not to drink’ (false). Each participant’s test score reflected the percentage of items (s)he answered correctly (0–100%).

What works in treating alcohol problems. This questionnaire contains statements derived from a study conducted by Morgenstern and McCrady (1992) with additional statements relating specifically to the use of pharmacotherapies for alcoholism used by Meza et al. (2001). Respondents are instructed to consider their experience in treating alcohol-dependent clients and rate the value of several treatment approaches (from detrimental to essential, with no effect as the middle response option) using a 7-point Likert scale type. Statements include ‘Help client accept that alcoholism is a disease’ and ‘Facilitate client’s identification with people who are in recovery.’ For some items, respondents rate (also on a 7-point scale) their agreement (strongly disagree to strongly agree, with neutral as the middle response option) with statements related to alcoholism and alcohol treatment, such as ‘The classification of alcohol abuse/dependence as psychiatric disorders is appropriate’ and ‘A significant number of problem drinkers can give up alcohol without any professional treatment or self-help groups.’

A composite score was computed based on a factor analysis conducted by Meza et al. (2001). This score reflects participants’ overall valuation of adjunctive pharmacotherapy. It was determined by participants’ responses on two items from the What Works in Treating Alcohol Problems questionnaire: ‘Providing/referring client to receive medication to help control drinking urges and/or experience of the ‘high’ should

relapse occur’ (rated detrimental to essential) and ‘Overall, pharmacologic interventions have convincingly been shown to be useful in the treatment of alcohol dependence’ (rated strongly disagree to strongly agree). Responses on these two items were significantly correlated (r = .36, P = 0.001), and both were normally distributed. The composite score was derived by computing the mean of the standard scores (z-scores) for each of these statements.4 With this scoring approach, the mean composite score is zero. A negative score indicates lack of value for adjunctive pharmacotherapies; a positive score reflects appreciation for the value of adjunctive pharmacotherapies.

Data analysis

Data were analysed using SPSS v. 11 statistical software (SPSS Inc., Chicago, IL). Of interest were variables that predicted the composite score described above. Based on findings of others (Forman et al., 2001; Meza et al., 2001; Roman and Johnson, 2002; Thomas et al., 2001), five variables were considered potential predictors: (i) position in the organization (counselor vs administrator); (ii) education level (dichotomized: Associates or Bachelors degree vs some postgraduate education); (iii) recovery status (yes/no); (iv) years of experience in the addiction field; and (v) score on the naltrexone knowledge test. Correlation coefficients were used to examine potential predictors for the composite score. Significant variables were included in a multiple regression analysis to determine which, if any, variables had unique predictive power when the variance attributable to other variables was removed.

RESULTS

Demographics

Most participants were women (69%), 74% were Caucasian (23% were African American and 3% were biracial), and all but four individuals had a 4-year college degree; over half (57%) had some graduate school experience. Average age was 44 (SD = 11.0, range = 25–69); average number of years working in the addiction field was 10.0 (SD = 8.9, range = 1–34). The average number of years working in their respective treatment centre was 6.3 (SD = 7.1, range = 1–30 years). One out of five individuals (21%) reported that they were in recovery for addiction, all of whom attended a 12-step programme as part of their recovery (e.g. Alcoholics Anonymous). Only one of those recovering individuals reported ever taking naltrexone.

Naltrexone knowledge test

Table 1 shows each statement on the Naltrexone knowledge test, the correct response (in parentheses), and the per cent

4The essentiality of medications factor derived by Meza and colleagues (2001) is slightly different than the composite score used herein. Specifically, Meza and colleagues utilized six items to compute the factor score called ‘essentiality of medications.’ The present study utilized two of those six items to derive the composite score called ‘valuation of pharmacotherapy.’ Four items that addressed the value of prescribing specific medications were excluded because, unlike the study by Meza, none of the participants in the present study were medical professionals.
Naltrexone is the only medication approved to treat alcohol dependence (F). Naltrexone blunts some of the rewarding effects of alcohol (T). Naltrexone has abuse potential, so it must be administered to the patient daily by a healthcare provider (F). Naltrexone is a medicine that affects brain chemistry (T). Alcoholics taking naltrexone report that it decreases their craving for alcohol (T). Naltrexone is covered by Medicaid (T).

**Table 1. Results from the naltrexone knowledge test.** The table shows the percentage of participants who answered each item correctly/incorrectly, including the percentage that endorsed ‘don’t know’ (which was scored as an incorrect answer for all cases).

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct (%)</th>
<th>Incorrect</th>
<th>Don’t know (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naltrexone is a medicine originally developed to treat high blood pressure (F)</td>
<td>17</td>
<td>15</td>
<td>68</td>
</tr>
<tr>
<td>Naltrexone is approved by the FDA for the treatment of alcohol dependence/alcoholism (T)</td>
<td>47</td>
<td>4</td>
<td>49</td>
</tr>
<tr>
<td>Naltrexone makes a drinker sick if s/he drinks alcohol while taking it, which helps the person stay motivated not to drink (F)</td>
<td>38</td>
<td>13</td>
<td>49</td>
</tr>
<tr>
<td>Naltrexone is covered by Medicaid (T)</td>
<td>8</td>
<td>7</td>
<td>85</td>
</tr>
<tr>
<td>Alcoholics taking naltrexone report that it decreases their craving for alcohol (T)</td>
<td>53</td>
<td>3</td>
<td>44</td>
</tr>
<tr>
<td>Naltrexone is a medicine that affects brain chemistry (T)</td>
<td>41</td>
<td>0</td>
<td>59</td>
</tr>
<tr>
<td>One of the most common side effects of naltrexone is hair loss (F)</td>
<td>9</td>
<td>3</td>
<td>88</td>
</tr>
<tr>
<td>Naltrexone has abuse potential, so it must be administered to the patient daily by a healthcare provider (F)</td>
<td>26</td>
<td>3</td>
<td>71</td>
</tr>
<tr>
<td>Naltrexone blunts some of the rewarding effects of alcohol (T)</td>
<td>35</td>
<td>0</td>
<td>65</td>
</tr>
<tr>
<td>Naltrexone is the only medication approved to treat alcohol dependence (F)</td>
<td>52</td>
<td>4</td>
<td>44</td>
</tr>
</tbody>
</table>

Table 2. Participant ratings (means and percentages) of the elements of treatment that are essential for successful outcomes from the What Works in Treating Alcohol Problems questionnaire. Each statement is rated along a 7-point scale (–3 to +3). Values approaching 3 reflect the opinion that the approach is considered essential. A value of 0 reflects the opinion that the approach is ineffectual. The mean rating to the medication item was significantly lower than the grand mean rating from the psychosocial items (*P < 0.001).

<table>
<thead>
<tr>
<th>Approach</th>
<th>Mean (SD)</th>
<th>Detrimental (%)</th>
<th>No effect (%)</th>
<th>Essential (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce client’s denial</td>
<td>2.61 (0.79)</td>
<td>1</td>
<td>6</td>
<td>93</td>
</tr>
<tr>
<td>Help client accept that alcoholism is a disease</td>
<td>2.50 (0.74)</td>
<td>0</td>
<td>12</td>
<td>88</td>
</tr>
<tr>
<td>Help client understand that drinking is triggered by high-risk situations</td>
<td>2.45 (0.81)</td>
<td>0</td>
<td>12</td>
<td>88</td>
</tr>
<tr>
<td>Increase client’s confidence by practicing coping skills in real-life high-risk situations</td>
<td>2.30 (1.25)</td>
<td>4</td>
<td>12</td>
<td>84</td>
</tr>
<tr>
<td>Facilitate client’s identification with people who are in recovery</td>
<td>2.12 (1.03)</td>
<td>1</td>
<td>12</td>
<td>76</td>
</tr>
<tr>
<td>Help client implement and refine self-monitoring techniques for problem drinking</td>
<td>1.98 (1.33)</td>
<td>5</td>
<td>23</td>
<td>72</td>
</tr>
<tr>
<td>Refer client to receive medication to help control drinking urges</td>
<td>0.64 (1.23)*</td>
<td>6</td>
<td>77</td>
<td>17</td>
</tr>
</tbody>
</table>

of participants who provided that response, as well as the percentages of participants who responded incorrectly and ‘don’t know.’ The average number of correct responses was 34.5% (SD = 27.7). Because participants had three response options (true, false, and don’t know), the mean test score was not 50% (which would be expected by chance if only two response options were provided). Eighteen participants (21%) scored 0%, and two participants scored 100%. Of the 18 participants who scored 0% on the test, 17 did so because they responded ‘don’t know’ to all questions.

**What works in treating alcohol problems**

Participants rated treatment practices along a 7-point scale reflecting whether the practice was detrimental or essential. These data were summarized using means (SD) across all participants. In addition, for descriptive purposes, data were collapsed to create three response categories: detrimental (–3 and –2); no effect (–1, 0, and 1); and essential (2 and 3). Table 2 shows mean ratings for each statement, as well as the percentage of participants who rated each approach in each response category. In general, the results indicate that standard psychosocial treatment practices (the first six items in Table 2) were rated as essential by most participants, but encouraging clients to consider medication to reduce urges to drink was considered ineffectual by most participants. A single sample t-test confirmed that the mean rating for the pharmacotherapy statement (\(M = 0.64\)) was significantly lower than the grand mean rating from the six psychosocial approach statements (\(M = 2.33\), \(t(83) = 12.59, P = 0.001\)). Responses to statements regarding alcoholism and its treatment (strongly disagree = 1 to strongly agree = 7) revealed that participants generally endorsed the necessity of treatment for alcoholism (Table 3). They tended to disagree with the notion that problem drinkers can reduce drinking without the help of professional treatment or self-help groups, and they mostly agreed that alcohol abuse/dependence is accurately classified as a psychiatric disorder.

On the other hand, participants were neutral regarding the usefulness of pharmacologic interventions for alcoholism. They strongly disagreed with the statement that pharmacotherapies may be sufficient by themselves to treat some alcohol-dependent individuals, and they strongly agreed with the statement that pharmacotherapies work best only when accompanied by psychosocial treatment. Similar to Table 2, Table 3 shows mean ratings for each statement, as well as the percentage of participants who disagreed (1 or 2), were neutral (3, 4, or 5), or agreed (6 or 7) with each statement.

**Predicting valuation of adjunctive alcohol pharmacotherapy**

Analyses were conducted to examine what variables predicted opinions about the value of adjunctive pharmacotherapy for alcoholism. To derive an empirically based model, five variables were examined for their correlation with the composite score—(i) position (counselor vs administrator); (ii) education level (dichotomized: college degree vs some postgraduate education); (iii) recovery status (yes/no); (iv) years of experience in the addiction field; and (v) score on the naltrexone knowledge test. A liberal alpha value of 0.10 for
significant correlation coefficients was used to determine which variables should be included in the regression model.

Pearson correlation coefficients revealed that three of the five variables of interest were significantly correlated (all positively) with the composite score: (i) naltrexone knowledge test score (r = 0.23, P = 0.03); (ii) education level (= 0.18, P = 0.10); and (iii) years working in the addiction field (r = 0.33, P = 0.002). Except for a significant correlation between naltrexone knowledge test score and years working in the addiction field (r = 0.49, P = 0.001), these three variables were not correlated with each other. Neither recovery status of the participant nor role in the centre (counselor vs administrator) were correlated with the composite score (r values < 0.10, P values > 0.10).

Based on the results from the correlation analysis, a regression model was defined using the three significant variables as predictors. Variables were entered into the model using the simultaneous entry procedure. The overall model was significant, F(3,80) = 4.93, P = 0.003 (R² = 0.16). Only years working in the addiction field was predictive of unique variance on the composite score (Beta = 0.31, t = 2.58, P = 0.01). Education failed to reach significance at the 0.05 level (P = 0.06), and naltrexone knowledge test score provided no additional significant predictive value (P > 0.10). In summary, participants with more years of experience in the addiction field were generally more positive in their valuation of the use of adjunctive pharmacotherapy in the treatment of alcoholism. Figure 1 shows a scatterplot of this relationship.

### DISCUSSION

This investigation focused on the knowledge and attitudes of counselors and administrators in community-based addiction treatment centres. These professionals are critical players in efforts to translate adjunctive pharmacotherapies into a more mainstream practice in the treatment of alcoholism. If these treatment professionals embrace the value of adjunctive medications, more alcohol-dependent individuals will be informed about this treatment option, and many will benefit by adding medication to their psychosocial treatment. Currently, few counselors inform their clients about the availability and/or value of adjunctive medications for alcoholism, despite the fact that there is substantial empirical support for their efficacy. The present investigation examined counselors’ and administrators’ knowledge about one of these drugs, naltrexone, and examined factors that predicted positive opinions about the use of adjunctive pharmacotherapies, in general.

Results demonstrated that participants had little knowledge about naltrexone. On average, scores reflected no better than chance performance. An examination of the pattern of incorrect responses revealed that most respondents chose ‘don’t know’ when they did not provide the correct answer, suggesting that a lack of information, rather than misinformation, accounts for the low scores. In addition, counselors rated the value of adjunctive pharmacotherapies as low, both in general and in comparison to psychosocial treatment approaches.

Investigators examined whether naltrexone knowledge and other demographic and experiential variables, reported by others to have predictive value, were related to degree of valuation of adjunctive pharmacotherapies for alcoholism. Results showed that years of experience in the addiction field was a significant indicator of this composite score, and this relationship remained even when the effects of knowledge of naltrexone and education level were partialed out. Of those with negative composite scores (reflecting lower valuation/confidence in pharmacotherapies), only 20% had >10 years of experience in the addiction field. Of those with positive composite scores (reflecting greater valuation of pharmacotherapies), half had >10 years of experience.

This finding has important implications for technology transfer efforts—most notably, that interventions are needed to change knowledge and attitudes about adjunctive alcohol pharmacotherapies. The most senior addictions professionals—those with the most years of experience—were most likely to value pharmacotherapies as a treatment tool. While it is tempting to speculate a causal relationship, the present data were cross-sectional, not longitudinal, so it is not possible to conclude that increases in experience led to greater valuation of pharmacotherapies. It is reasonable to assume that the most experienced individuals may be the ones most likely to retire in the near future (almost half of those with positive composite scores were over age 50). If years of experience does have a causal relationship with positive opinions about pharmacotherapy, it is unlikely that a timely change in the zeitgeist regarding the use of adjunctive alcohol pharmacotherapies in community addiction treatment centres will occur naturally. Deliberate efforts are needed to help both experienced and inexperienced treatment professionals appreciate the value that adjunctive pharmacotherapies can afford their alcoholic clients.

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2 Analyses confirmed that the relationship between years of experience and valuation of pharmacotherapy remained significant when the effect of age was removed, partial r = 0.30, P = 0.007.
It should be noted that the present investigation does not address whether the variables of interest are related to one’s openness to appreciate the value of alcohol pharmacotherapies following an educational intervention. Rather, the data show that most demographic and experiential variables were unrelated to valuation of pharmacotherapies in the absence of training. Outcome data from the educational intervention trial we conducted (from which the present baseline data were drawn) will be important in determining which variables relate to attitude change following specific training in the value of adjunctive pharmacotherapies. Some have suggested, for example, that professionals in recovery from addiction, who may have relied on 12-Step therapy, may be especially reluctant to adopt adjunctive pharmacotherapies (Petrakis et al., 2003; Knudsen et al., 2005). Outcome data from this project will help examine this issue empirically; current results suggest only that recovery status was not related to existing valuation of pharmacotherapies.

As expected, participants widely endorsed the importance of standard psychosocial interventions in treating alcoholism (e.g. reducing denial, identifying triggers for drinking, and developing drink refusal skills). These approaches were considered essential by the vast majority of participants, whereas referring a client to receive medication to help control drinking urges was considered by most to have no effect. The fact that very few participants (only 6%) considered this approach to be harmful to clients is encouraging. This result suggests that educational efforts do not need to overcome a barrier of negative opinions about adjunctive pharmacotherapies; rather, it implies that educational activities should focus on conveying accurate and empirically supported information.

The present study has some limitations that should be considered in interpreting the results. This investigation was exploratory in nature, so less rigorous statistical tests were used (e.g. P values of 0.10 were used to examine potential predictors) than would be used in hypothesis testing. However, exploration was not random—the variables chosen for analyses were selected based on prior work by others. Another limitation is that the primary dependent measure—valuation of adjunctive pharmacotherapy—has not been psychometrically evaluated. It was quantified with a composite score using standardized scores from two items with face validity on this issue (essentiality of referring client to receive medication to help control drinking urges and agreement with the statement that pharmacologic interventions have convincingly been shown to be useful in the treatment of alcohol dependence). In addition, one limit to generalizability is that the present study included only counselors and administrators from agencies that lacked a physician on staff. While this is typical of most outpatient community-based addiction treatment centres, it likely influences the valuation ratings. That is, others have reported that having a medical provider on staff increases the likelihood that the agency utilizes naltrexone in the treatment of alcohol-dependent clients (Roman and Johnson, 2002), so it is likely that staff at such agencies might be more knowledgeable about and supportive of the value of adjunctive pharmacotherapies.

In summary, few individuals who might benefit from adjunctive medications for alcoholism are receiving them (Thomas and Wallack, 2001; Thomas et al., 2001; Mark et al., 2003; Roman and Johnson, 2002). Generally speaking, education about these medications has not been directed toward counselors, either by alcoholism researchers or the pharmaceutical industry. It is not surprising, then, that counselors and administrators are uncertain about these treatments and their potential to benefit alcoholic clients. By October 2007, addiction treatment agencies in the United States that receive support through federal block grants (which includes all of the agencies that participated in the present study) are expected to implement evidence-based practices and report outcomes to the Substance Abuse and Mental Health Services Administration (SAMHSA) through its National Outcome Measures program (SAMHSA, 2005). Adjunctive pharmacotherapies for alcoholism is one such evidence-based practice that can be implemented into the treatment plan (Miller and Wilbourne, 2002), even if the treating counselor is not licensed to prescribe medications. The counselor can inform his/her client about the benefits that these agents might provide, encourage the client to seek information about these medications from a physician, discuss what barriers the client may have, and if the client receives a prescription for the medication, the counselor can ask about compliance and outcomes during the counseling process. Though other important barriers exist (e.g. cost of purchasing medications; client’s lack of a regular primary care physician to prescribe medications; skepticism/resistance by clients to take medication), the most proximal barrier, and the one that the alcohol research community can most immediately address, is the failure for counselors at community-based addiction treatment centres to tell their clients about the availability and potential benefit of these medications. The results of this exploratory investigation suggest that this barrier may be due to the fact that counselors and administrators lack knowledge of and confidence in these agents. These results support the need to provide directed educational interventions specifically for counselors and administrators at community-based addiction treatment centres.

![Fig. 1. Scatterplot showing the relationship between valuation of adjunctive pharmacotherapies (where scores >0 reflect greater appreciation) and years of experience in the addiction treatment field. This relationship was significant, r = 0.33, P = 0.002.](image-url)
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