Cautious use of race in analyses to predict retention in substance abuse treatment

Alexandra Duncan1; Rashid Ahmed2

IMPAQ International, LLC, Health Division1; Cancer Care Manitoba, University of Manitoba2

Abstract

Aims: This study examines differences in organizational characteristics and client retention in substance abuse treatment programs serving either predominantly African American or predominately Non-African American clients. Methods: Wilcoxon Exact Test or the Cochran Mantel-Haenszel Chi-Square was used to compare differences in organizational characteristics. Generalized Estimating Equation was used to consider client- and program-level independent effects and cross level interactions on retention in treatment. Results: The findings show longer retention in predominately African American programs (p=2.36, p<0.01); however, shorter retention among African American clients (β=0.24, p<0.01), demonstrating the difficulty in making client level conclusions based on program level data, or vice versa. Mixed model analyses show program directors who had been at the facility for 10 years or less (β=0.45, p<0.05), use of client/staff matching (β=0.43, p<0.01), and programs with low levels of legal coercion (β=1.03, p<0.05) predict longer client retention. Conclusions: The findings suggest organizational factors and race are important predictors of client retention in treatment and have important implications for behavioral health providers seeking to improve client retention. Knowledge of the interaction between racial composition and organizational characteristics can be helpful in improving program retention.

Introduction

Negative consequences associated with drug use disproportionately affect racial and ethnic minorities.1 Previous research on treatment success report mixed findings regarding disparities between African Americans and Whites. African American researchers were shown to have fewer treatment visits2 and higher drop out rates3 in comparison to Whites. Both client-level4,5 and organizational-level6,7 factors have been shown to influence client retention in treatment and substance use outcomes. Retention in treatment has been shown to be the strongest and most reliable predictor of post-treatment drug use and criminality outcomes.8-11 Minimum retention thresholds for achieving statistically significant post-treatment outcomes average about ninety days for residential treatment.12-14

Sample

The sample was drawn from The Drug Abuse Treatment Outcomes Study (DATOS). The DATOS was initiated in the 1990s by the National Institute on Drug Abuse (NIDA) to expand on research to evaluate the effectiveness of community-based drug treatment in the United States. For the purposes of these analyses, data were restricted to adult clients in long-term residential treatment whose program director responded to the treatment process questionnaire, resulting in 1168 clients and 19 long-term residential treatment programs. Long-term residential treatment included traditional therapeutic communities, modified therapeutic communities, and other programs requiring in-residence treatment.

Methods

Client Retention in Treatment, Client Legal Coercion, and Client Race were Level 1 variables. All other variables were Level 2. Dependent Variable

- Client Retention in Treatment – A dichotomous measure of clients retained in treatment for 90 days or more, or less than 90 days.

Independent Variables

- Client Race – client self-identified race.
- Program Racial Composition – proportion of majority racial group within the program (African American or White) determined by cluster analysis. A predominantly African American program has 50% or more African American clients. A predominantly Non-African American program has less than 50% African American clients.
- Client-Level Legal Coercion12 – Legal coercion status is a composite variable that includes client self-report of (1) pre-treatment legal status, (2) urine monitoring by the criminal justice system, and (3) an indication that legal problems were a primary or secondary reason for entering treatment.
- Program-Level Legal Coercion - Program legal coercion is derived from client legal coercion measure. Programs with the majority of their clients in groups 3, 4, 5, or 6 on the client-level legal coercion status measure were classified as highly coerced. Programs with the majority of their clients in groups 1 or 2 on the client-level status measure were classified as lowly coerced.
- Program Characteristics – various program factors rated by the program administrator.
- Staff Characteristics - staff in recovery, counselor caseload.
- Treatment Characteristics – various treatment characteristics rated by the program administrator (client planned duration of stay, type of counseling offered).
- Services Offered - staff assessment of services provided (educational programs, ancillary services).

Analytic Plan

Program racial composition was determined by cluster analysis. Wilcoxon Exact Test or Cochran Mantel-Haenszel Chi-Square was performed to determine if there were differences in organizational characteristics by program type (African American or Non-African American program). Generalized estimating equation (GEE) was used because at least one variable from the program-level dataset was used as a predictor. To identify variables for the multilevel analysis, variables were screened using ordinary logistic regression with the assumption of independence of the observations with liberal (p<0.2) and retention (p<0.12). Variables of theoretical importance were also considered. Centering was considered and tested. The centering did not change the results; thus, centered variables were not used for this analysis.

Results

Table 1: Legal Coercion

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>No</th>
<th>Yes</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>2</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
<td>4</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
<td>5</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>7</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>8</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>15</td>
<td>9</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2: Comparison of “African American” Programs and “White” Programs

<table>
<thead>
<tr>
<th>Program Characteristics</th>
<th>Average program capacity</th>
<th>Facility participates in evaluation activities</th>
<th>Program Director tenure (years)</th>
<th>Percentage of staff in recovery</th>
<th>Average counselor caseload</th>
</tr>
</thead>
<tbody>
<tr>
<td>All: N=13</td>
<td>64.53 (9 programs)</td>
<td>85% (5 programs)</td>
<td>36% (3 programs)</td>
<td>10.00 (13 programs)</td>
<td></td>
</tr>
<tr>
<td>White N=10</td>
<td>69.55 (8 programs)</td>
<td>89% (8 programs)</td>
<td>39% (4 programs)</td>
<td>11.62 (13 programs)</td>
<td></td>
</tr>
<tr>
<td>African American Ch-</td>
<td>56 (1 program)</td>
<td>83% (1 program)</td>
<td>100% (1 program)</td>
<td>7.50 (1 program)</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

The results from the current study demonstrate an ecological fallacy if attributing longer retention to African American clients based on results showing predominately African American programs predicted longer retention in treatment as compared to predominately Non-African American programs. The final model showed that African American clients were retained for shorter period as compared to Whites. Additional research is needed to understand the reasons for these differences at the individual and program levels.

Conclusion

Organizations should assess their client population to determine if the majority of their clients fit a particular profile. As the present findings show, program race is an important predictor of client retention in treatment.

References