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The relationship between clinician turnover and adolescent treatment outcomes: An examination from the client perspective

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Abstract

The turnover of substance use disorder (SUD) treatment staff has been assumed to adversely impact treatment effectiveness, yet only limited research has empirically examined this assumption. Representing an extension of prior organizational-level analyses of the impact of staff turnover on client outcomes, this study examined the impact of SUD clinician turnover on adolescent treatment outcomes using a client perspective. Multilevel regression analysis did reveal that relative to those adolescents who did not experience clinician turnover, adolescents who experienced both direct and indirect clinician turnover reported a significantly higher percentage of days using alcohol or drugs at 6-month follow-up. However, clinician turnover was not found to have significant associations (negative or positive) with the other five treatment outcomes examined (e.g., substance-related problems, involvement in illegal activity). Thus, consistent with our prior findings, the current study provides additional evidence that turnover of SUD clinicians is not necessarily associated with adverse treatment outcomes.

Keywords

adolescent; substance abuse; treatment; staff; turnover; retention

1. Introduction

It has been suggested that turnover of substance use disorder (SUD) treatment staff may have negative impacts on the quality and effectiveness of treatment services that are delivered to clients (e.g., Knudsen, Ducharme, & Roman, 2007; Knudsen, Johnson, & Roman, 2003; McNulty, Oser, Johnson, Knudsen, & Roman, 2007). To date, however, a recent study by Garner, Hunter, Modisette, Ihnes, and Godley (2012) represents the only known empirical test of this common assumption. Using data collected as part of a national evidence-based treatment (EBT) dissemination and implementation initiative, Garner et al. (2012) examined the extent to which organizational-level rates of staff turnover (i.e., annualized rates of organizations' staff turnover over a three-year period) were associated with several client-level treatment outcomes (e.g., days of abstinence, involvement in illegal activity, social risk). In addition to not supporting the hypothesis that higher staff turnover would be significantly associated with poorer treatment outcomes, multilevel regression analyses revealed higher organizational-level rates of staff turnover were significantly associated with clients reporting less involvement in illegal activity and lower social risk. Although not expected, Garner and colleagues noted their findings were consistent with

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qualitative research by Woltmann et al. (2008), which suggested staff turnover can have positive influences on the implementation of EBTs in the mental health field. For example, Woltmann and colleagues noted that 12 of 42 teams (29%) implementing EBTs described turnover as “having a primarily positive influence on implementation,” including giving them the ability to replace “less qualified staff with more qualified staff.” Importantly, however, quantitative findings by Woltmann et al. found team turnover to be a significant negative predictor of 24-month fidelity scores.

In an effort to further advance understanding of the relationship between SUD treatment staff turnover and client treatment outcomes, the present study examined the impact of SUD clinician turnover on treatment outcomes from a client perspective, as opposed to an organizational-level perspective. More specifically, as part of this study, we categorized each adolescent into one of four mutually exclusive groups that represent each adolescent’s experience with clinician turnover. These groups included: a) *directly impacted by clinician turnover*, which represented adolescents who had their clinician turnover during their treatment episode; b) *indirectly impacted by clinician turnover*, which represented adolescents who did not have their clinician turnover during their treatment episode, but may have been indirectly impacted due to turnover of one of the other clinicians at the organization (e.g., an adolescent may be indirectly impacted by the turnover of other clinicians if for instance his/her clinician had less availability due to being assigned additional adolescents who were previously being treated by the clinician who left the organization); c) *directly and indirectly impacted by clinician turnover*, which represented adolescents who experienced both direct and indirect turnover as defined above; and d) *neither directly nor indirectly impacted by clinician turnover*, which represented adolescents who did not experience either direct or indirect clinician turnover during their treatment episode. Thus, in contrast to the organizational-level perspective examined by Garner et al. (2012), which tested the hypothesis that *organizations* with higher rates of clinician turnover had worse average client treatment outcomes, this study drills down further to test the hypothesis that *adolescents* who experience some level of clinician turnover during their treatment episode will have worse treatment outcomes relative to those clients who do not experience clinician turnover.

2. Method

2.1 Study context

Data used in this study was collected as part of a large-scale dissemination and implementation initiative funded by the Substance Abuse and Mental Health Services Administration’s Center for Substance Abuse Treatment (SAMHSA/CSAT). As described by Godley, Garner, Smith, Meyers, & Godley (2011), the general goal of this initiative was to improve adolescent substance use treatment by providing multiple community-based treatment organizations with funding so that their clinical staff could learn and implement the Adolescent Community Reinforcement Approach and Assertive Continuing Care (A-CRA/ACC; Godley et al., 2001), which has been shown to be effective in reducing adolescent substance use and substance-related problems (Dennis et al., 2004; Garner, Godley, Funk, Dennis, & Godley, 2007; Garner et al., 2009; Godley, Godley, Dennis, Funk, & Passetti, 2002, 2007; Godley et al., 2010). All of the treatment organizations received approximately \$900,000 (over a three-year period). Additionally, each treatment organization was able to have up to five staff participate in extensive training, feedback, and supervision in the model at no additional cost. A-CRA/ACC training included components that have been found effective for training clinicians in evidence-based practices (EBPs), including a treatment manual, 3.5-day initial workshop, coaching/supervision sessions, and feedback on recorded sessions (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004; Sholomskas et al., 2005).

2.2 Procedures

This secondary analysis study was conducted under the auspices of Chestnut Health Systems' Institutional Review Board and used clinician and client data collected as part of the SAMHSA/CSAT initiative described above. Clinician turnover information was recorded as part of a contract to Chestnut Health Systems to provide training and technical assistance to each of the treatment organizations participating in the SAMHSA/CSAT project. Adolescent intake and follow-up data was collected by each of the respective treatment organizations participating in the SAMHSA/CSAT-funded initiative.

2.3 Sample

The sample for this study included adolescents who a) received one or more A-CRA/ACC treatment sessions within 30 days of completing their initial intake assessment and b) completed the 6-month follow-up interview. These 2,012 clients, which represented an 85% follow-up rate, were mostly male (73%), with 34% being Caucasian, 13% African American, 31% Hispanic, and 22% mixed or other race. The average age was 15.8 (SD=1.4) years old. There were 50% that reported coming from a family with single parent custody, 65% reported current involvement in the criminal justice system, 69% reported one or more co-occurring disorders (e.g., generalized anxiety disorder, conduct disorder), and 35% reported having had prior substance use treatment. These 2,012 adolescents were nested within 144 clinicians and 27 treatment organizations that were participating in the SAMHSA/CSAT initiative.

2.4 Measures

2.4.1 Independent variable—As part of the SAMHSA/CSAT initiative, project start and end dates were recorded for all project clinicians. Additionally, treatment service information was recorded for all adolescents and included treatment open/close dates as well as dates of each treatment session. This clinician and adolescent information allowed us to create a client-level clinician turnover measure of direct turnover and indirect turnover. More specifically, for each adolescent, we first examined if his/her assigned clinician had a turnover date that fell within the adolescent's treatment open and close dates. If this occurred, the adolescent was coded as having been directly impacted by clinician turnover. If this did not occur, the adolescent was coded as having not been directly impacted by clinician turnover. Next, for each adolescent, we examined if any other project clinician had a turnover date that fell within the adolescent's treatment open and close dates. If this occurred, the adolescent was coded as having been indirectly impacted by clinician turnover. If this did not occur, the adolescent was coded as having not been indirectly impacted by clinician turnover. Finally, using these two dichotomous measures, we categorized each adolescent into one of four mutually exclusive groups. Again, these four groups included: a) directly impacted by clinician turnover, b) indirectly impacted by clinician turnover, c) both directly and indirectly impacted by clinician turnover, and d) neither directly nor indirectly impacted by clinician turnover.

2.4.2 Dependent variable—As part of the SAMHSA/CSAT initiative, adolescents were assessed at treatment intake and 6 months post-treatment intake using the Global Appraisal of Individual Needs (GAIN; Dennis, Titus, White, Unsicker, & Hodgkins, 2003). The GAIN is a comprehensive biopsychosocial assessment designed to integrate research and clinical assessment into one structured interview. Consistent with the treatment outcomes examined as part of our prior work (Garner et al., 2012), we examined the following six treatment outcome measures: a) *percent of days used* (i.e., percentage of days of using alcohol or other drugs during the past 90 days, controlling for days in controlled environments such as jail, prison, or residential treatment); b) *substance problems scale* (i.e., a count of past-month

symptoms of substance abuse, dependence, or substance-induced disorders that is based on DSM-IV; $\alpha = .90$); c) *social risk index* (i.e., a sum of items indicating how many people the respondent hangs out with socially are involved in school, training, illegal activities, substance use, or treatment); d) *recovery environment risk index* (i.e., an average of items [divided by their range] for the days [during the past 90 days] of alcohol in the home, drug use in the home, fighting, victimization, being homeless, and structured activities that involved substance use and the inverse [90-answer] percent of days going to self-help meetings, and involvement in structured substance-free activities); e) *illegal activities scale* (i.e., an average of items [divided by their range] for the recency of illegal activity, days [during the past 90 days] of any illegal activity, supporting oneself financially with illegal activity, illegal activity in order to obtain alcohol or drugs or were performed while drunk or high; $\alpha = .64$); and f) *emotional problems scale* (i.e., an average of items [divided by their range] for recency of mental health problems, memory problems, and behavioral problems; the days [during the past 90 days] of being bothered by mental problems, memory problems, and behavioral problems; and the days the problems kept participant from responsibilities; $\alpha = .72$).

2.5 Analytic Plan

Despite our conceptualization of clinician turnover as a client-level measure, the data remain multilevel in structure. Thus, all analyses for this study were conducted using HLM 6 software (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004). As an initial step, we conducted a series of separate multilevel regression analyses to examine: a) the relationships between each of the adolescent background characteristics and each respective treatment outcome measure (not shown) and b) the relationship between our client-level measure of clinician turnover and each respective treatment outcome measure. Each of these models controlled for the adolescents' baseline measure of each respective treatment outcome measure. Consistent with model building recommendations by Hosmer and Lemeshow (2000), we then examined the extent to which the client-level turnover measure was predictive of each respective treatment outcome measure when controlling for other important client background characteristics (listed in the sample characteristics above). Although a p -value of 0.25 was selected as the criterion for including covariates, which is consistent with Hosmer and Lemeshow's (2000) recommendations for screening important covariates, we used the conventional p -value of 0.05 for determining statistical significance.

3. Results

3.1 Clinician turnover and classification of clients into four clinician turnover impact categories

Of these 144 clinicians included as part of this study, 36 (25%) turned over from the project during the course of this study. The average number of adolescents each clinician turnover directly impacted was 2.3 ($SD = 1.3$), with a range of 1 – 6. The average number of adolescents each clinician turnover indirectly impacted was 12.0 ($SD = 3.7$), with a range of 1 – 18. The majority of adolescents (77.1%) were not impacted by clinician turnover either directly or indirectly. However, in terms of those clients who were impacted in some way by clinician turnover, 49 (2.4%) only experienced direct turnover, 400 (19.9%) only experienced indirect clinician turnover, and 32 (1.6%) experienced both direct and indirect clinician turnover.

3.2 The relationship between clinician turnover and adolescent treatment outcomes

Table 1 presents the unadjusted relationship between client-level clinician turnover and each of the adolescent treatment outcomes examined as part of this study. The only statistically significant finding was that relative to adolescents who did not experience any clinician

turnover, adolescents who experienced both direct and indirect clinician turnover had significantly higher percent of days using alcohol or other drugs ($p = .021$).

Table 2 summarizes results of the subsequent multilevel multivariate regression analyses, which regressed each respective treatment outcome measure on the clinician turnover measure adjusting for adolescent background measures associated with treatment outcome at $p < .25$. Although there was a trend ($p = .06$) for adolescents who experienced both direct and indirect clinician turnover to have a significantly higher percent of days using alcohol or other drugs relative to adolescents who did not experience any clinician turnover, none of the turnover measures were statistically significant for any of the six treatment outcome measures examined.

4. Discussion

In an effort to better understand the extent to which turnover of SUD clinicians is related to treatment outcomes, this study examined the relationship between clinician turnover and several adolescent treatment outcomes. Consistent with the widely held assumption that SUD staff turnover adversely impacts treatment outcomes, we did find that adolescents who experienced both direct and indirect clinician turnover during their treatment episode had a significantly higher percent of days using alcohol or other drugs relative to adolescents who did not experience any clinician turnover during their episode of SUD treatment. This finding is of importance, given it represents the only known empirical evidence to support the commonly held assumption that SUD clinician turnover adversely impacts treatment outcomes. Important to note, however, is that this finding did not reach statistical significance ($p = .058$) in the subsequent multivariate analysis that controlled for other client measures (e.g., prior substance treatment, current criminal justice involvement) identified as being significantly related to percent of days using alcohol or drugs. Moreover, clinician turnover was not found to be significantly associated with any of the other five treatment outcome measures examined as part of this study. Thus, although there is some evidence that suggests SUD clinician turnover may adversely impact treatment outcomes that are more proximal to the treatment (e.g., substance use), the current findings suggest that in general, clinician turnover did not have much of an association (negatively or positively) with other treatment outcomes (e.g., social risk, illegal activities).

As noted previously, research examining the relationship between SUD clinician turnover and treatment outcomes has been very limited. Indeed, the only other known examination of this important relationship is the study by Garner et al. (2012), which examined the extent to which the same client-level treatment outcomes examined as part of this study could be predicted by the annualized rates of staff turnover measured at the organization-level. Similarities between these two studies included both studies not finding clinician turnover to be significantly associated with client's reports on the following three measures: substance problem scale, recovery environment risk index, and emotional problems scale. Differences between these two studies, however, were that while Garner et al. (2012) did not find clinician turnover measured as an organizational-level measure to be significantly associated with adolescents' percent of days of use, the current study did find that adolescents who experienced both direct and indirect clinician turnover reported using alcohol or other drugs a significantly higher percentage of time at the follow-up assessment relative to adolescents who did not experience clinician turnover. This adverse relationship between staff turnover and treatment outcome is consistent with a recent study by Williams and Potts (2010), who, using data from more than 3,000 patients treated for chronic pain, found that higher staff turnover was significantly associated with poorer treatment outcomes, such as decreased self-efficacy and less distance walked.

Another noteworthy difference between our earlier work (Garner et al., 2012) and the current study is that while our earlier study found higher clinician turnover to be significantly associated with more positive treatment outcomes for adolescents' reports of social risk (i.e., lower risk) and involvement in illegal activities (i.e., less involvement), the current study did not find clinician turnover to be significantly associated with either of these treatment outcome measures. Importantly, differences between studies are not entirely surprising, given these two studies represent *related* but *distinct* questions. That is, they are similar in that they both address the general question about the relationship between clinician turnover and treatment outcomes. They are distinct in that our earlier study addressed the extent to which clinician turnover conceptualized as an *organizational measure* (i.e., annualized rate of clinician turnover) was associated with average adolescent outcomes, while the present study addressed the extent to which clinician turnover conceptualized as a *client measure* (e.g., not impacted by clinician turnover, impacted by both direct and indirect clinician turnover) was associated with that specific adolescent's treatment outcome. Thus, this suggests that the relationship between clinician turnover and treatment outcomes may differ depending on the level of analysis examined.

In addition to its strengths, the current study has limitations to be acknowledged. For example, one limitation is that on average, clinicians working on this SAMHSA/CSAT initiative had relatively small caseload sizes, as evidenced from the percentage of adolescents that were directly (4%) or indirectly (21.5%) impacted by clinician turnover. Interestingly, Woltmann et al. (2008) noted as part of their study focused on the role of staff turnover in the implementation of evidence-based practices in mental health care that "Agencies often made the decision to prioritize fidelity (high quality service) over penetration (delivery of service to more consumers), at times serving very few clients." Thus, the low caseload sizes found in our study do seem to be consistent with other efforts to implement evidence-based practices. Nevertheless, it remains unknown to what extent the relationships between clinician turnover and treatment outcomes found in our study generalize to settings and populations where average caseload sizes are larger. Thus, this would be an important area for future research. A second limitation is that we do not know the extent to which each organization had additional clinicians who were not part of the SAMHSA/CSAT-funded initiative and that may have been able to quickly replace clinicians who turnover. The extent to which other clinicians were available to quickly fill in may have diminished the impact of turnover on treatment outcomes. A third limitation is that treatment outcomes were based on self-report. Ideally, objective measures of treatment outcome (e.g., urinalysis, breathalyzer) would be examined when available. A final study limitation is that the number of dependent measures examined increased the likelihood that some findings may be spurious.

In summary, the current study provides preliminary evidence supporting the previously unsubstantiated assumption that turnover of SUD clinicians adversely impacts treatment outcomes. That said, this was the case for only one of the six client treatment outcomes examined and even then was only for adolescents who experienced the highest level of clinician turnover (i.e., experienced both direct and indirect clinician turnover). Clearly, additional research is needed to further examine the extent to which clinician turnover impacts outcomes. In addition to the impact that clinician turnover has on treatment outcomes, future research is needed to quantify the financial impacts of clinician turnover. This seems to be a particularly important area for future research given regardless of the impact the clinician turnover has on treatment outcomes, staff turnover without question has at least some financial costs for the organization. For example, in addition to the relatively modest costs of staff time to recruit and interview several job candidates, there are often the not-so-modest costs associated with training staff. Training costs may be particularly true for organizations delivering evidence-based treatments, given learning such treatments often

requires extensive training and ongoing monitoring/supervision (e.g., Godley et al., 2011; Miller et al., 2004; Sholmoskas et al., 2005). Finally, future researchers are urged to consider that not all staff turnover is inherently bad and that in fact, some staff turnover can be viewed as having positive consequences. Indeed, as qualitative research by Woltmann et al. (2008) has noted, staff turnover may be positive to the extent that it is used as an opportunity for “team realignment.” Thus, similar to the suggestion of turning lemons into lemonade, we recommend looking for ways in which staff turnover can be turned into an opportunity for organizational improvement. Although admittedly this may be “easier said than done,” it may be easier than the alternative of trying to eliminate staff turnover, which given enough time, is actually an inevitable outcome (e.g., retirement as a form of turnover).

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Table 1

Unadjusted relationship between client-level clinician turnover and adolescent treatment outcomes

Predictor	Percent of Days Using AOD (n=2,004)			Substance Problem Scale (n=2,009)			Social Risk Index (n=1,967)			Recovery Environment Risk Index (n=1,911)			Illegal Activities Scale (n=1,979)			Emotional Problems Scale (n=2,008)		
	B (SE)	95% C.I.	Lower, Upper	B (SE)	95% C.I.	Lower, Upper	B (SE)	95% C.I.	Lower, Upper	B (SE)	95% C.I.	Lower, Upper	B (SE)	95% C.I.	Lower, Upper	B (SE)	95% C.I.	Lower, Upper
Turnover																		
Direct Effect Only	0.03 (0.04)	-0.05, 0.12		0.42 (0.30)	-0.17, 1.03		0.24 (0.54)	-0.81, 1.31		-0.01 (0.01)	-0.02, 0.01		0.01 (0.02)	-0.02, 0.05		0.00 (0.02)	-0.03, 0.03	
Indirect Effect Only	0.01 (0.02)	-0.03, 0.06		0.022 (0.19)	-0.35, 0.39		0.18 (0.28)	-0.37, 0.73		-0.01 (0.01)	-0.01, 0.01		-0.01 (0.01)	-0.03, 0.01		-0.01 (0.01)	-0.02, 0.01	
Both Direct and Indirect	0.10 (0.04)	0.01, 0.19		-0.44 (0.32)	-1.08, 0.20		-0.02 (0.69)	-1.38, 1.33		0.01 (0.01)	-0.01, 0.03		0.00 (0.02)	-0.04, 0.04		0.00 (0.03)	-0.05, 0.05	

Note: **Bold** indicates $p < .05$. AOD = Alcohol and Other Drugs. All analyses controlled for the baseline value of each respective outcome variable, which was statistically significant ($p < .05$) in all models.

Table 2

Adjusted relationship between client-level clinician turnover and adolescent treatment outcomes

Predictor	Percent of Days Using AOD (n=1,829)			Substance Problem Scale (n=1,992)			Social Risk Index (n=1,777)			Recovery Environment Risk Index (n=1,838)			Illegal Activities Scale (n=1,935)			Emotional Problems Scale (n=1,994)		
	B (SE)	Lower, Upper	95% C.I.	B (SE)	Lower, Upper	95% C.I.	B (SE)	Lower, Upper	95% C.I.	B (SE)	Lower, Upper	95% C.I.	B (SE)	Lower, Upper	95% C.I.	B (SE)	Lower, Upper	95% C.I.
Female	-0.04 (0.02)	-0.08, 0.01	--	--	--	--	-.0406 (0.291)	-0.975, 0.164	--	--	--	--	-0.03 (0.00)	-0.04, -0.02	-0.04, 0.02	0.02 (0.01)	-0.00, 0.03	--
Race																		
African American	--	--	--	0.33 (0.19)	-0.045, 0.713	--	--	--	--	-0.01 (0.01)	-0.02, 0.00	--	-0.00 (0.01)	-0.01, 0.01	-0.01, 0.01	-0.01 (0.01)	-0.04, 0.01	--
Hispanic	--	--	--	0.46 (0.15)	0.168, 0.756	--	--	--	--	-0.00 (0.01)	-0.01, 0.01	--	0.01 (0.01)	-0.01, 0.02	-0.01, 0.02	-0.03 (0.01)	-0.05, -0.01	--
Mixed/Other	--	--	--	0.119 (0.147)	-0.169, 0.407	--	--	--	--	-0.003 (0.004)	-0.01, 0.01	--	0.01 (0.01)	0.00, 0.02	0.00, 0.02	-0.01 (0.01)	-0.02, 0.01	--
Age	0.01 (0.01)	-0.01, 0.02	--	--	--	--	--	--	--	0.00 (0.00)	0.00, 0.01	--	-0.00 (0.00)	-0.01, 0.00	-0.01, 0.00	--	--	--
Single Parent Custody	0.02 (0.02)	-0.01, 0.05	--	--	--	--	0.39 (0.22)	-0.03, 0.81	--	--	--	--	--	--	--	--	--	--
Current CJ Involvement	0.04 (0.01)	0.01, 0.06	--	--	--	--	0.23 (0.25)	-0.261, 0.718	--	--	--	--	0.01 (0.00)	0.00, 0.02	0.00, 0.02	--	--	--
Any co-occurring disorder	0.049 (0.02)	0.01, 0.07	--	0.48 (0.12)	0.234, 0.716	--	0.57 (0.19)	0.21, 0.94	--	0.01 (0.00)	0.00, 0.02	--	0.02 (0.01)	0.01, 0.03	0.01, 0.03	0.03 (0.01)	0.02, 0.05	--
Any Prior Substance Treatment	0.09 (0.02)	0.05, 0.13	--	0.708 (0.115)	0.482, 0.934	--	0.46 (0.16)	0.14, 0.77	--	0.009 (0.004)	0.00, 0.02	--	0.02 (0.01)	0.00, 0.03	0.00, 0.03	0.019 (0.007)	0.01, 0.03	--
Turnover																		
Direct Effect Only	0.02 (0.04)	-0.07, 0.10	--	0.50 (0.30)	-0.08, 1.08	--	0.52 (0.63)	-0.72, 1.75	--	-0.01 (0.01)	-0.02, 0.01	--	0.01 (0.02)	-0.02, 0.05	-0.02, 0.05	0.00 (0.02)	-0.03, 0.04	--
Indirect Effect Only	0.02 (0.02)	-0.27, 0.07	--	0.05 (0.18)	-0.31, 0.41	--	0.26 (0.30)	-0.33, 0.84	--	-0.00 (0.01)	-0.013, 0.006	--	-0.01 (0.01)	-0.03, 0.00	-0.03, 0.00	-0.00 (0.01)	-0.01, 0.01	--
Both Direct and Indirect	0.09 (0.05)	-0.00, 0.19	--	-0.33 (0.32)	-0.97, 0.30	--	-0.43 (0.83)	-2.11, 1.13	--	0.01 (0.01)	-0.02, 0.03	--	-0.00 (0.02)	-0.04, 0.04	-0.04, 0.04	0.00 (0.03)	-0.05, 0.06	--

Note: **Bold** indicates $p < .05$. AOD = Alcohol and Other Drugs. All analyses controlled for the baseline value of each respective outcome variable, which was statistically significant ($p < .05$) in all models.