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From Defiance to Reliance: Spiritual Virtue as a Pathway Towards Desistence, Humility, and Recovery Among Juvenile Offenders

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This study examined the impact of two "spiritual virtues"—service to others and the spiritual experience of love—on sobriety, character development (humility), and recidivism. We control for conduct disorder and other comorbid conditions, including defiant behaviors. One hundred ninety-five adolescents with substance dependency court-referred to residential treatment were assessed at intake, discharge, and 12 months posttreatment. Higher service to others predicted reduced relapse and greater humility, with or without the experience of spiritual love. Defiance was associated with higher incarceration, but the combination of service and love predicted lower incarceration and mediated the impact of defiance. Survival analysis demonstrated that youths with low service, with or without high love, were more likely to relapse than high helpers with high love. Spiritual virtue appears to be a promising pathway for recovery and desistence, even for youthful offenders deemed the most difficult to rehabilitate.

Keywords: youth addiction, defiance, spirituality, service, Alcoholics Anonymous

Adolescents are coming of age in an era characterized by the decline of institutional legitimacy, the withering of community, a greater sense of normlessness, and a corrosion of meaning (LaFree, 1999; Putnam, 2000; Quinones, 2016). The communal and spiritual void that has emerged in recent decades has increased demand for the "quick fix" relief that drugs provide and contributed to a range of related social problems. But deeply meaningful experiences, such as compassionate service to others and other forms of spiritual growth, offer resources for countering these negative social trends. Social connections, shifting the lens from self to others, and spiritual growth all have a role to play in dispelling the darkening shadow of youth addiction and delinquency.

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The proliferation of prescription medications, especially opioids, the recent legalization of marijuana, and the greater availability of street drugs have increased access to alcohol and other drugs (AOD) among U.S. youths (M. Cook, 2016; Rapaport, 2016). AOD-related problems contribute to a host of social issues, including an overcrowded juvenile detention system, the spread of sexually transmitted diseases among adolescents, and increased emergency room visits by youths (Lee, Pagano, Johnson, & Post, 2016). AOD use is commonly listed as one of the key "adverse childhood experiences"—the "10 negative childhood events that positively correlate with chronic disease in adulthood" (Baglivio & Epps, 2016, p. 179). Young adults have recently experienced increased exposure to AOD risk factors such as child abuse and violence, as well as decreased exposure to factors that reduce the likelihood of addiction (religious activity, social connectedness, and volunteerism; Johnson, Pagano, Lee, & Post, 2015; Pagano, Wang, Rowles, Lee, & Johnson, 2015).

The strong relationship between delinquency and AOD use is well established in the research literature (Wooditch, Tang, & Taxman, 2014). Close to half of incarcerated youths—those who commit the most serious forms of delinquency—have a substance abuse problem and this group is more likely to exhibit misconduct while in a correctional facility, including weapons-related incidents (DeLisi, Trulson, Marquart, Drury, & Kosloski, 2011). After release from incarceration, studies have found that 4 in 10 serious, violent, and chronically delinquent youth require treatment for chemical dependency (Trulson, Marquart, Mullings, & Caeti, 2005). Rehabilitating these serious, often defiant, delinquents has proven challenging. The consensus seems to be that "for the most part many interventions do not make much of a dent in serious juvenile recidivism" (Trulson et al., 2005, p. 356). In other words, the ideal of individualized treatment for youthful offenders in the hope of rehabilitation is often in tension with the ideology that nothing works and therefore public safety should be protected by incarcerating fundamentally incorrigible offenders (Wolfgang, Figlio, & Sellin, 1972; Trulson et al., 2005). The oppositional and often hostile demeanor of defiant youths poses an enormous challenge for both clinicians and parents. A disobedient stance is incongruent with the demands of treatment programs for disciplined behavior.

However, there is growing awareness among clinicians and researchers that "spiritual virtues" (such as helping others and the experience of spiritual love), and religiosity more generally, are associated with improved sobriety and character development, as well as reduced recidivism (Johnson, Lee, Pagano, & Post, 2016; Kelly, Pagano, Stout, & Johnson, 2011; Lee & Pagano, 2014; Lee et al., 2016; Lee, Veta, Johnson, & Pagano, 2014). The recent establishment of the field of "positive criminology" has helped draw attention to the substantial secular and faith-based infrastructure that could be more fully utilized to improve adolescent recovery and character development, including the 12-Step program and support network originally developed in the 1930s by Alcoholics Anonymous (AA; see Johnson et al., 2016).

Although recent scholarship on spiritual virtue, desistence, and recovery has been informative, it has not considered the complexities that arise for many youths with both AOD issues and co-occurring conditions such as conduct disorder (CD), major depressive disorder (MDD), and attention-deficit/hyperactivity disorder (ADHD). Such difficult-to-treat adolescents might actually be ready to change, if they are provided with a pathway to recovery and desistence that works with their defiant demeanor. AA theory suggests that spiritual virtue is perhaps uniquely suited to aid recovery even when one or more of these comorbid disorders is present, provided that the adolescent's outlook has shifted from a position of "defiance"—considered by AA "the outstanding characteristic of many an alcoholic"—to one of "reliance" (AA, 1953, p. 31). This article offers an initial investigation of this thesis.

Defiance and Co-Occurring Disorders

Researchers have identified defiance as a strategic focus in adolescent addiction recovery, in conjunction with co-occurring disorders. Several instruments capture aspects of defiance, with the most frequent being the diagnostic categories of CD, characterized by serious violations of the rights of others, or oppositional defiant disorder (ODD), characterized by patterns of hostile and defiant behaviors (A. K. Cook & Gordon, 2012). Loeber and Keenan

(1994, p. 497) stated that "Among the mental disorders in childhood" CD "causes the most physical harm and property loss." Also, youths with CD "show the worst outcomes following drug treatment" (Myers, Brown, & Mott, 1995, p. 68). However measured, defiance has been linked to AOD use, including cannabis and crack cocaine (Pianca et al., 2016; Zohsel et al., 2016). Consequently, prevention efforts might be directed at particularly "aggressive" youths, who are also "multiple-substance users" with "persistent problem behavior as distinct from occasional problem behavior" (White, Loeber, Stouthamer-Loeber, & Farrington, 1999). Diagnostic categories such as CD and ODD may not characterize all defiant youth, or distinguish adolescents with high-risk for delinquency. A better understanding of youth exhibiting defiance, as distinct from youth with aggression associated with ODD, and early-onset and persistent aggression associated with CD, can provide insights into effective prevention for AOD use and juvenile justice involvement.

Yet defiance is not simply a barrier to effective recovery; it may be a resource that could aid in the recovery process, if utilized appropriately. For example, the question, "Can teenage defiance be manipulated for good?" has been answered affirmatively; "Teenage rebellion can be virtuous—even wholesome—depending on the situation" and "benevolent defiance" can foster prosocial outcomes (Ripley, 2016). Service to others and additional spiritual aspects of the 12-Step process may open a pathway for youths to benevolently defy delinquent subcultural norms. By connecting with spiritual virtues, defiant youths may become engaged in prosocial community relationships and overcome the isolating effects of addiction (Johnson et al., 2015).

Spiritual Virtues

Nearly half (47%) of AOD treatment programs require participation in 12-Step groups during treatment and 85% link adolescents with AA or Narcotics Anonymous groups as a continuing care resource at discharge (Kelly & Yeterian, 2008; Knudsen et al., 2008). The 12 Steps are an effective adjunct to therapy in facilitating recovery and the "active ingredients" are well known to researchers and clinicians: shifting youths from a self-centered to an other-centered orientation, enhancing meaning and purpose, promoting healthy spirituality, and replacing social isolation with support and connectedness (Johnson et al., 2015; Lee et al., 2016). AA cofounder Dr. Bob asserted that the essence of the 12 Steps can be "boiled down" to the twin virtues of "love and service" (AA, 1980, p. 338; Lee et al., 2016). AA's theory of behavior change suggests that the act of helping others flows from a spiritually grounded humility and openness to input from others that is the "foundation stone" of recovery (AA, 2001, p. 97). In order to grow spiritually, the addict must move from "defiance" to "reliance" (AA, 1953, p. 31). AA refers to reliance as depending upon a higher power of one's own understanding for navigating life's problems instead of the defiant escape from reality provided, at least temporarily, by alcohol and other addictions (AA, 2001).

The AA pamphlet *Living Sober* emphasizes that sobriety is much more than not drinking or using drugs. It is a way of life built around absolute spiritual virtues such as honesty, unselfishness, purity, and love that must be observed in all of aspects of daily living. This requires an active rather than passive outlook and demands other-centered benevolent action (AA, 1975). The positive impact of this spiritual way of life is well established, as active service during AOD treatment cuts the risk of relapse in half (Pagano, Kelly, et al., 2013), reduces depression during recovery, an important co-occurring disorder (Pagano, Zemore, Onder, & Stout, 2009), and helps build positive self-identity and social integration (Pagano, White, Kelly, Stout, & Tonigan, 2013). Similarly, the experience of spiritual love (and religiosity more generally) is associated with improved sobriety and character development, as well as reduced recidivism (Johnson et al., 2016; Kelly et al., 2011; Lee et al., 2014).

Desistance and Spirituality

Spiritual experiences are becoming better understood as effective resources in the literature on rehabilitation and desistance from crime. This makes sense in light of the strong associations between crime/delinquency and AOD use (Wooditch et al., 2014). Scholars tend to agree that desistance is an ongoing process rather than a discrete event (Bushway, Piquero, Broidy, Cauffman, & Mazerolle, 2001; Jang,

2013; Laub & Sampson, 2001, p. 11). Giordano, Cernkovich, and Rudolph (2002, p. 992) argued that in addition to structural influences, four types of interrelated "cognitive and identity transformations" play an important role in this process. They include (1) one's openness to change; (2) one's exposure to a particular hook (or set of hooks) for change; (3) one's construction of a conventional "replacement self" or new identity; and (4) one's perception of crime and deviance to be negative. They also contend that the motivation for change involves "emotional transformations" for the actor's new emotional identities with "an increased ability to regulate or manage the emotions in socially acceptable ways" (Giordano, Schroeder, & Cernkovich, 2007, p. 1610), which in turn increase the likelihood of desistance.

These dimensions of the inner life of youths are closely connected with overcoming spiritual emptiness and a corresponding low sense of self-worth (Lee et al., 2016). The concept of identity change provides one avenue for exampling why. In Paternoster and Bushway's (2009, p. 1105) formulation, desistance is based on "a distinction between . . . one's current or working identity and . . . the kind of person that one wishes to be—and, more importantly, not be ["feared self"]—in the future: one's possible self." Perceived current failures and expected future failures produce a "crystallization of discontent" that motivate a deliberate act of intentional self-change. Identity transformation occurs when the old, "feared" self is replaced by a new, "possible" or "replacement self" (Giordano et al., 2002; Paternoster & Bushway, 2009).

Religion and spirituality have figured prominently in recent scholarship on desistance (Hallett, Hays, Johnson, Jang, & Duwe, 2016, 2017; Jang & Johnson, 2011; Lee et al., 2016; Maruna, Wilson, & Curran, 2006; Ulmer, Desmond, Jang, & Johnson, 2012). Religion provides "hooks for change" (Giordano et al., 2002, p. 992) by offering opportunities for participation in religious/spiritual activities and service to others (Jang et al., 2017). Religious involvement of various kinds (e.g., service attendance, Bible study, experiencing spiritual or divine love, and involvement in faith-based or 12-Step programs) is associated with desistance (Clear & Sumter, 2002; Lee et al., 2016; O'Connor & Duncan, 2011; O'Connor & Perreyclear, 2002).

Current Focus

This is the first 12-month prospective study to empirically investigate Dr. Bob's boiled-down essence of AA (the spiritual virtues of "love and service") on recovery and recidivism (AA, 1980, p. 338; Lee et al., 2016). We have two aims: (1) test whether the benefits of this twin virtue extend to 12 months posttreatment and (2) determine whether these benefits extend to defiant youths, a group that is thought to be difficult to rehabilitate. Few empirical papers document the impact of spiritual experience combined with prosocial helping on outcome measures such as AOD use, character development, and incarceration. We hypothesize higher service to others and experiences of spiritual love will predict reduced relapse and recidivism, while fostering greater humility, even for highly defiant youths.

Method

Procedures

Participants were 195 youths in residential treatment. Inclusion criteria included the following: ages 14–18 years, English speaking, stable address and telephone, met diagnostic criteria for current AOD dependency, not currently suicidal/homicidal, and medical clearance verifying the absence of acute intoxications and withdrawal symptoms. Case Medical Center institutional review board approved the study. Of the 211 patients approached, none were ineligible and 16 refused to participate. There were no significant differences between youths enrolled versus not enrolled but treated during the enrollment period in terms of intake characteristics and rates of treatment completion. Ninety percent of the enrollment sample completed treatment, 6% were prematurely discharged against medical advice, and 5% were transferred to a higher-level medical facility. There were no significant intake differences between participants with (N = 185, 96%) and without a discharge interview (N = 8, 4%). All 195 enrolled participants were followed for 12 months after the nominal date of leaving the treatment facility. Twenty-eight participants

were unable to be scheduled for posttreatment interviews due to incarceration, six subjects refused their follow-up interviews, and 21 subjects were lost to follow-up. Of those able to be scheduled at the time of their posttreatment interview, 87% ($N = 156/179$) completed a 6-month interview, and 84% ($N = 141/168$) completed a 12-month interview. There were no significances at baseline or discharge between subjects who did and did not complete a 6-month or 12-month interview (Pagano et al., 2015; see also Kelly et al., 2011).

Setting

Subjects were recruited from New Directions (ND), the largest adolescent residential treatment provider in northeastern Ohio. ND is a 24-hr-monitored, 8-week residential treatment program ($M = 2.2$ months) that provides a range of evidenced-based therapeutic modalities, including cognitive–behavioral therapy; motivational enhancement therapy; reality therapy; adolescent community reinforcement approaches; gender-specific treatment; medication-assisted treatment; relapse prevention; and family, individual, and group therapies. Each week patients spent roughly 20 hr in therapeutic activities and attended three 12-step meetings.

Measures

Data were gathered via rater-administered interviews, youth reports, medical chart review, and electronic court records. Participants completed a 60-min semistructured interview in a private location with experienced clinical interviewers at baseline in the week following the admissions interview ($M = 7$ days, range 0–10 days), treatment discharge, 6 months, and 12 months after the date of discharge.

Background

Background characteristics associated with outcomes in prior work (Pagano, Friend, Tonigan, & Stout, 2004) were assessed at intake: gender, minority status (Black vs. non-Black), ethnicity (Hispanic vs. non-Hispanic), age, grade, parental marital status, parental education, urbanicity of residence (i.e., urban/suburban vs. rural/small town), global health, atheist or agnostic status. Urbanicity of residence was assessed using the ZIP code approximation version of the census tract–based Rural–Urban Commuting Area codes. A single health quality-of-life item from the Youth Risk Behavior Survey asked youths to rate their health in general, with response items ranging from 1 (*poor*) to 5 (*excellent*). Youths also indicated whether or not they were atheist/agnostic on the Religious Beliefs and Behaviors Questionnaire (Connors, Tonigan, & Miller, 1996), which has shown good psychometric properties in the current sample (Kelly et al., 2011). There were no significant correlations between background variables except for low correlations between lifetime traumatic experiences and female gender ($r = .2$, $p < .01$) and Hispanic ethnicity ($r = .2$, $p < .01$).

The rater-administered, semistructured, MINI-International Neuropsychiatric Interview Plus (Arnaud et al., 2010) was used to assess AOD use disorders, CD, MDD, and ADHD. Presence of the disorder in the past 6 months was considered positive for the current diagnosis. Kappa statistics showed high agreement with clinician assessment of ADHD ($\kappa = 0.92$; Pagano et al., 2016). Rates of CD (68%), ADHD (58%), and MDD (23%) in the sample were similar to those in other investigations (Brown, 2007; Kaminer, Burleson, & Goldberger, 2002).

Addiction Severity

We assessed addiction severity with data on prior treatment history (measured in the previous 24 months with select items from the valid and reliable Health Care Data Form; see Zywiak et al., 1999) and two indices of addiction severity (readiness for change and longest period of time sober). Readiness for change was assessed with the valid University of Rhode Island Change Assessment Scale (DiClemente, Schlundt, & Gemmell, 2004; $\alpha = 0.91$ in our sample). With reference to the past month, 32 items were rated on a 5-point Likert scale from 1 (*strong disagreement*) to 5 (*strong agreement*). A readiness-for-change score was calculated from the sum of three subscale scores (contemplation, action, and maintenance) minus the precontemplation subscale. Youth self-report of the longest period of voluntary abstinence since initial AOD use was assessed using a select item from the valid Addiction Severity Index (Hendriks, Kaplan, Van-Limbeck, &

Geerlungs, 1989). Addiction severity indices were not correlated (*r*s = −.1 to .1, *ns*).

Predictor Variables

Service participation was assessed using the Service to Others in Sobriety (SOS) questionnaire, a 12-item self-report of AA-related helping, with excellent psychometric properties and good internal consistency (αs = .82–.92), construct validity (*r*s = .3–.6), test–retest reliability (r = .94), and feasibility (Pagano, Kelly, et al., 2013). With reference to the past month, 12 SOS items are rated from 1 (*rarely*) to 5 (*always*) and summed; a score of 40+ is used to categorize high (High H) versus low (Low H) helping (Pagano, White, et al., 2013). Two items from the valid Daily Spiritual Experiences Scale (DSES; Underwood & Teresi, 2002) were used to assess spiritual love: "I feel God's love for me directly" and "I feel God's love for me through others." DSES items are rated on a Likert scale from 1 (*never*) to 5 (*always*) and summed. Based on prior work (Lee, Poloma, & Post, 2013), high love (high L) was defined as endorsement of "always" to either of the two DSES items. For an indicator variable of the twin spiritual virtues of love and service (hereinafter referred to as "twin virtue"), high service (yes/no) and high love (yes/no) were combined to form four categories: High H/High L (the highest indicator of twin virtue), High H/Low L, Low H/High L, and Low H/Low L, as in prior work (Lee et al., 2016).

Defiant behaviors were assessed with three items from the "negative home behaviors" subscale (A. K. Cook & Gordon, 2012) of the Juvenile Offender Parent Questionnaire (Rose, Glaser, Calhoun, & Bates, 2004). These items assess arguing and fighting in the home, violating curfew, and not obeying the rules of the home and have been shown to have adequate psychometric properties, including internal reliability (α = .92; Bradshaw, Glaser, Calhoun, & Bates, 2006; A. K. Cook & Gordon, 2012). Items are rated on a 3-point Likert scale from 0 (*no*), to 1 (*sometimes*), to 2 (*yes*) and summed. For descriptive reporting, high defiance was dichotomized as endorsement of "yes" to all three items.

Outcomes

Outcomes studied were AOD use, character development, and incarceration. AOD use was assessed with the valid and reliable Timeline Follow-Back interview (Donohue et al., 2004). Percentage of days abstinent (PDA) was calculated as the number of days a subject was abstinent from AOD divided by the number of days in the assessment period multiplied by 100. PDA scores showed high agreement with urine toxicology screens in the current sample (κ = 0.87). Character development in terms of humility was measured with the valid Behavioral Step-Work subscale (Greenfield & Tonigan, 2013) adapted from the General Alcoholics Anonymous Tools of Recovery, which showed good internal validity in the current sample (α = .82; Lee et al., 2016). Incarceration incidences were assessed from electronic legal records maintained by 17 counties in northeastern Ohio. Incarceration episodes showed high correlation with youth report of legal involvement on the Substance Abuse Subtle Screening Inventory at intake (r = .5, $p < .001$).

Analysis

Statistical analyses were conducted with SAS Version 9.2 (SAS Institute Inc., 2002), using PROC FREQ, PROC PHREG, PROC MIXED, and PROC GLIMMEX. Differences between groups were examined using Fisher's exact test for binary variables and Kruskal-Wallis chi-squared test for continuous variables. We used proportional hazard regression (time to relapse), a negative binomial logistical regression (incarceration), and a random-effects regression (humility). We first tested for main effects of twin virtue on 12-month outcomes. We then considered whether benefits of twin virtue differed for defiant youth by including main effects of defiance and its interaction term with twin virtue. Models controlled for intake characteristics associated with outcomes in prior work (background, AOD severity), twin virtue, and the outcome variable at intake. To discern effects due to defiance rather than an associated condition, we controlled for the three most common comorbid psychiatric conditions.

Results

Sample at Intake

We report intake characteristics of the sample, which are comparable to other studies of adolescents in residential treatment. Participants were 16 years old on average ($M = 16.2$, $SD = 1.1$). Approximately half (48%) were male, 32% were African American, and 8% were Hispanic. Approximately half were living in a single parent household (50%) or in a rural setting (53%) and 27% had a parent with a college degree. The majority of youth entered treatment with marijuana dependence (92%) and 61% met the criteria for alcohol dependence. Comorbidity of alcohol dependency with drug dependency occurred in 60% of the sample. As detailed elsewhere (Kelly et al., 2011), the most prevalent drug dependency types comorbid with alcohol dependency were marijuana (59.5%) and narcotics (21.0%). Most entered residential treatment for the first time, in good health (68%), and in the contemplative stage (52%). Psychiatric comorbidity was high with 71% meeting diagnostic criteria for CD, 58% ADHD, and 29% MDD. Approximately one-third identified themselves as spiritual (38%) or religious (32%) and 15% were atheist/agnostic. At intake, the rate of twin virtue (high love/high service) was low (4%) and most were low in both virtues (72%). As shown in Table 1, the mean humility score was 27.90 ($SD = 11.16$), 9% had a history of incarceration, and alcohol and/or other drugs were consumed on most days (70%) in the month prior to intake. Approximately two out of five youths were high in defiance (39%), which was not distinguished by most intake characteristics. Defiant youths were more likely to enter treatment in the action stage of change (48%, $p < .001$) with lower rates of twin virtue than their nondefiant peers (0% vs. 6%, $p < .05$).

Sample at Discharge

Table 2 shows characteristics of the sample at discharge. Most participants completed treatment (90%) with a mean treatment duration of 10.2 weeks ($SD = 2.4$). After 2 months of residential treatment, a similar proportion of the sample were religious (36%) and atheist/agnostic (15%), although there was a significant increase in the proportion who endorsed being spiritual (increase from 38% to 45%; $\chi^2 = 22.78$, $p < .0001$). There were also significant shifts in the proportion of youths acquiring the twin virtues, with 10% high in both virtues, 23% high in love only, 11% high in service only, and 56% low in both virtues. As shown in Table 2, defiance was not related to discharge status of spiritual principles (belief orientation, virtue status) or their changes from baseline. Among those high in both virtues, the top two peer-helping activities rated "often" or "always" were endorsed at similar rates by youths with and without high defiance: listening for 10 minutes to another alcoholic/addict (89%) and sharing one's personal story with another alcoholic (85%).

Predictors of 12-Month Outcomes

Table 3 shows the relationships between defiance, virtue status at discharge, and 12-month outcomes, controlling for intake characteristics and treatment completion. The status of twin virtue at treatment discharge was significantly associated with decreased risk of relapse ($F = 5.00$, $p < .05$), incarceration ($F = 3.99$, $p < .05$), and higher levels of humility ($F = 3.33$, $p < .05$) in the year following treatment. Figure 1 presents a survival analysis that illustrates the significant effect of twin virtue on relapse over the 12 months following treatment. Youths low in helping/service with or without high love were more likely to relapse than those with the twin virtue ($\chi^2 = 7.02$, $p < .05$). Like other studies (Nock, Kazdin, Hiripi, & Kessler, 2007), high defiance was associated with worse outcomes. Youth with high defiance were more likely to be incarcerated ($F = 5.30$, $p < .05$) with a trend toward having lower humility ($F = 2.38$, $p < .07$). There were two significant interactions between defiance and twin virtue on 12-month outcomes (incarceration: $F = 4.53$, $p < .05$; humility: $F = 2.74$, $p < .05$). Post hoc analyses showed that the negative impact of defiance on risk of incarceration and lower humility were negated for defiant youths high in both virtues or high in service only. As shown in Table 3, few covariates were associated with outcomes. Male gender ($F = 4.76$, $p < .05$) and lower readiness for change ($F = 5.55$, $p < .05$) were associated with increased risk of incarceration.

Table 1
Sample at Intake

Intake variable	Total	High defiance	
		No	Yes
Background	195 (100%)	118 (61%)	77 (39%)
Age (*M*, *SD*)	16.2 (1.1)	16.3 (1.0)	16.0 (1.1)
Male (%)	93 (48%)	62 (53%)	31 (33%)
Minority (%)	62 (32%)	35 (30%)	27 (35%)
Hispanic (%)	15 (8%)	10 (8%)	5 (6%)
Parent BA+ (%)	53 (27%)	33 (28%)	20 (26%)
Single parent (%)	98 (50%)	56 (47%)	42 (55%)
Rural/small town (%)	103 (53%)	63 (53%)	40 (52%)
Good health (%)	133 (68%)	83 (70%)	50 (65%)
AOD severity			
Prior treatment (%)	17 (9%)	12 (10%)	5 (7%)
Longest time sober (*M*, *SD*)	62.6 (36.8)	65.0 (36.4)	57.8 (37.1)
Readiness for change (%)			
Precontemplation (%)	23 (12%)	14 (12%)	9 (12%)
Contemplation (%)	101 (52%)	70 (59%)	31 (40%)
Action (%)	71 (36%)	21 (18%)	37 (48%)***
Psychiatric			
ADHD (%)	113 (58%)	69 (58%)	44 (39%)
Conduct disorder (%)	138 (71%)	81 (69%)	57 (74%)
Major depressive disorder (%)	57 (29%)	36 (31%)	21 (27%)
Spiritual principles			
Belief orientation (%)			
Atheist (%)	16 (8%)	11 (9%)	5 (6%)
Agnostic (%)	14 (7%)	7 (6%)	7 (9%)
Unsure (%)	28 (14%)	17 (14%)	11 (14%)
Spiritual (%)	74 (38%)	47 (40%)	27 (35%)
Religious (%)	63 (32%)	36 (31%)	27 (35%)
Love/service status (%)			
Low love/low service (%)	140 (72%)	85 (72%)	55 (71%)
Low love/high service (%)	33 (17%)	19 (16%)	14 (18%)
High love/low service (%)	15 (7%)	7 (6%)	8 (10%)
High love/high service (%)	7 (4%)	7 (6%)	0 (0%)*
Outcomes at intake			
Humility (*M*, *SD*)	27.90 (11.16)	28.42 (12.10)	27.56 (10.54)
Detention hall/jail history (%)	18 (9%)	11 (9%)	7 (9%)
Percentage days abstinent (*M*, *SD*)	0.3 (0.3)	0.3 (0.3)	0.3 (0.3)

Note. BA+ = parent has a 4-year college degree or higher; AOD = alcohol and other drugs; ADHD = attention-deficit/hyperactivity disorder.
* $p < .05$. *** $p < .001$.

Discussion

This is the first 12-month prospective study to test AA cofounder Dr. Bob's claim that the 12 Steps can be boiled down to "love and service." AA's theory of behavior change posits this twin virtue as a path to recovery in the context of moving from defiance to reliance. We found higher service to others predicted reduced relapse and greater humility, with or without the experience of spiritual love. Defiance was associated with higher incarceration, but the combination of service and spiritual love predicted lower incarceration and mediated the impact of defiance. Survival analysis demonstrated that youths with low service, with or without high spiritual love, were more likely to relapse than high helpers with high love. The scriptural admonition "Faith without works is dead" (AA, 2001, p. 76) appears prescient: the experience of spiritual love enhances the effect

Table 2
Sample at Discharge

Discharge variable	Total	High defiance	
		No	Yes
Treatment status	195 (100%)	118 (61%)	77 (39%)
Treatment duration (weeks) (*M*, *SD*)	10.2 (2.4)	10.2 (2.4)	10.5 (2.6)
Completed treatment (%)	175 (90%)	106 (90%)	69 (90%)
Spiritual principles			
Belief orientation (%)			
Atheist (%)	13 (7%)	9 (8%)	4 (6%)
Agnostic (%)	16 (8%)	10 (9%)	6 (9%)
Unsure (%)	5 (3%)	2 (2%)	3 (4%)
Spiritual (%)	80 (45%)	51 (48%)	29 (41%)
Religious (%)	63 (36%)	29 (41%)	28 (40%)
Love/service status (%)			
Low love/low service (%)	109 (56%)	61 (52%)	48 (62%)
Low love/high service (%)	22 (11%)	12 (10%)	10 (13%)
High love/low service (%)	45 (23%)	31 (26%)	14 (18%)
High love/high service (%)	19 (10%)	14 (12%)	5 (6%)

of service to others on incarceration but does not exert an independent effect on any of our outcomes.

Youths with high defiance entered treatment with higher readiness for change but lower rates of high love/service. Given the treatment protocol utilized in this program, it is likely that Step-work played a key role in fostering change. Working the 12 Steps facilitates the experience of spiritual love and harnesses the energy (and motivation to change) defiant adolescents seem to possess in greater quantities. Our findings support the AA theory that the spiritual virtue of helping others fosters recovery and reduces recidivism (Johnson et al., 2015; Pagano et al., 2009, 2010; Pagano, Post, & Johnson, 2011). Spiritual experiences such as "God consciousness" and love emanating from a divine source enhance this effect (Kelly et al., 2011; Lee et al., 2014, 2016). For defiant youths with AOD use disorder and comorbid conditions who are also highly motivated to change, perhaps because of a "crystallization of discontent" related to a "feared self" they would like to change (Bacon, Paternoster, & Brame, 2009), AA's process provides emotional "hooks for change" (Giordano et al., 2002, p. 992). It does this by offering a set of low-intensity and concrete actions, a way to position one's "dark past" as a positive resource for helping similarly situated others, and a supportive environment for "faking it until you make it" that replaces social disconnection with solidarity and mutual self-help (Johnson et al., 2015). In other words, "discontent" defiant youths—those who have "hit bottom" in AA parlance—have the resources (defiant energy, willingness to change) needed to thrive in a 12-Step framework, and to channel the adolescent impulse to defy into a willingness to disobey delinquent subcultural norms.

The 12 Steps change "vital behaviors" by helping AOD-using and delinquent youths learn to "love what they hate": sobriety, humility, service to others, spiritual development (Patterson, Grenny, Maxfield, McMillan, & Switzler, 2011, pp. 192–212). One of our findings is particularly striking: involvement in high love and high service appears to move adolescents from defiance to humility. AA suggests the moral framework of the addict is based on selfishness and seeks to shift this lens to a morality of recovery rooted in humility and altruism (Post, Pagano, Lee, & Johnson, 2016). AA's process can be understood as replacing a set of negative, defiant norms with a positive set of defiant norms that is equally countercultural but in a healthy direction.

Strengths and Limitations

There are several limitations and strengths of this study. First, although our sample offered many advantages compared to previous studies,

Table 3
Predictors of 12-Month Outcomes

Covariate	Predictor	AOD relapse		Incarceration		Humility	
		B (*SE*)	*F*	*B* (*SE*)	*F*	*B* (*SE*)	*F*
	Love/service status (discharge)	−.27 (.12)	5.00*	−2.28 (1.25)	3.99*	9.43 (3.58)	3.33*
	High defiance	−.13 (.22)	.32	12.38 (5.38)	5.30*	−7.78 (3.37)	2.38†
	Love/service × High defiance	.12 (.24)	.23	−7.04 (3.31)	4.53*	3.82 (1.52)	2.74*
Intake							
Age		.26 (.19)	4.30	1.79 (1.49)	.10	.08 (.50)	.03
Male		.28 (.24)	1.30	9.67 (4.89)	4.76*	2.08 (1.35)	2.38
Minority		−.29 (.29)	1.05	4.97 (3.17)	2.45	−1.22 (1.27)	.92
Hispanic		.62 (.38)	2.75	−7.85 (.12)	3.68	−3.27 (1.98)	3.04
Parent BA+		.15 (.09)	2.59	−.58 (.93)	.39	−.10 (.46)	.05
Single parent		.27 (.23)	1.29	−3.67 (3.04)	1.45	.19 (1.03)	.03
Rural/small town		−.23 (.24)	.92	.61 (1.82)	.11	−1.35 (1.10)	1.51
Good health		.34 (.27)	2.49	−9.87 (5.36)	3.08	−.66 (.93)	.50
Prior treatment		−.57 (.44)	1.68	−3.32 (1.73)	3.66	−.47 (1.85)	.06
Longest time sober		−.09 (.23)	.15	−.27 (.12)	.17	1.36 (1.02)	1.75
Readiness for change		.08 (.16)	.28	−8.47 (3.59)	5.55*	.26 (.67)	.15
ADHD		−.10 (.23)	.18	.13 (1.47)	.01	.88 (1.06)	.71
Conduct disorder		.37 (.25)	2.11	3.36 (2.42)	1.93	−3.00 (1.92)	3.01
Major depressive disorder		.29 (.33)	.74	9.54 (6.19)	2.37	−2.99 (1.66)	2.29
Atheist/agnostic		.01 (.09)	.01	1.75 (2.06)	.72	−1.15 (1.37)	.70
Intake assessment of outcome		−.02 (.12)	.87	−.89 (2.22)	.16	−.02 (.04)	.29
Discharge							
Completed treatment		.03 (.39)	.01	.82 (.55)	2.20	.22 (.27)	.03

Note. BA+ = parent has a 4-year college degree or higher; ADHD = attention-deficit/hyperactivity disorder.
† $p < .10$. * $p < .05$.

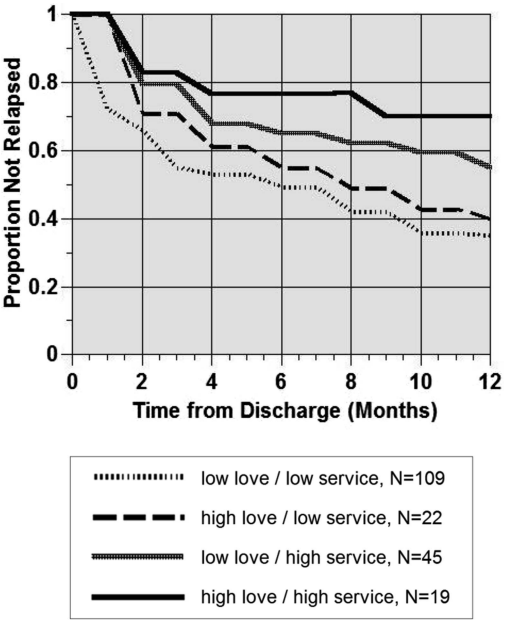

Figure 1. Time to relapse. Wilcoxon's $\chi^2 = 7.02, p < .05$; youths with low service with or without high love are more likely to relapse than those with high service and high love; there are no differences in risk of relapse between high servers with or without high love.

including representation of minority and female youth, as well as being the largest clinical sample that we know of to date with substance-dependent youths in treatment, it was recruited from only one geographic area of a single state. Second, we did not measure change in defiance as this variable was only assessed at intake. Despite these limitations, our prospective design advances our understanding of mechanisms of behavioral change derived from the spiritual virtues of love and service, particularly for the defiant. This time ordering, along with the use of valid and reliable instruments to measure variables from a variety of sources, represent strengths of the design. Furthermore, youth self-reports of service are highly correlated with counselors' reports of youths' service participation (Pagano, Kelly, et al., 2013), and youths are better informants of internalizing states than adult informants (Pagano, Cassidy, Little, Murphy, & Jellinek, 2000).

Implications and Future Directions

AA connects defiant and selfish adolescents with a therapeutic experience of positive emotions connected to an altruistic orientation and lifestyle. Although defiant youths may present as difficult, clinicians may be encouraged to know that they can be highly motivated to change their behavior and equally likely to develop a faith that works (i.e., twin virtue) as their peers without defiance. AA emphasizes humility and teachability as an accurate sense of one's self and abilities along with an openness to input from others. Future research could seek to replicate our results, particularly with regard to defiant youths, for the most serious and chronic delinquents. Active engagement with spiritual virtues, what AA refers to more generally as sober living, offer a resource for "redemptive scripts" (Maruna et al., 2006, p. 180; see also Smith, 2017, p. 108, on "redemptive stories") that allow offenders to reframe the meaning of their previous misdeeds in light of the positive person that they are becoming by engaging in AA's Step-work. Such scripts can be religious or secular in nature (Maruna et al., 2006).

The ability to tell a meaningful story ("storytelling") about one's life is one of the four essential "pillars" of a meaningful life, along with "belongingness," "purpose," and "transcendence" (Smith, 2017, p. 41). For serious delinquents, "post-traumatic growth" (Smith, 2017, p. 168) is possible, but this could be limited if the redemptive story is obscured by a "contamination story" (Smith, 2017, p. 110) involving stagnation, chaos, and isolation. Criminologists are beginning to appreciate the importance of identity change in moving offenders from their old, "feared" self to a new, "possible," or "replacement self" (Giordano et al., 2002, 2007; Giordano, Longmore, Schroeder, & Seffrin, 2008; Paternoster & Bushway, 2009). AA's 12 Steps could be adapted to better serve serious youthful delinquents with and without addiction by helping them to frame a redemption story that positions their dark past as a resource for future growth (storytelling). The other pillars of meaning are also present in the 12 Steps: reliance on a higher power (transcendence), serving others (purpose), and developing deep connections with a home group and a sponsor (belonging). We hope that our findings encourage experimental applications of the 12 Steps in order to reach the chronic and serious delinquents who may present a defiant

demeanor, but may also be ready to change if the right pathway appears.

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