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Love and Service in Adolescent Addiction Recovery

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ABSTRACT

This article is one of the first to examine the relationships among a specific combination of “spiritual virtues” (helping others and the experience of divine love) and outcomes related to criminal involvement, sobriety, and character development among adolescents. One hundred ninety-five adolescents with substance dependency court-referred to residential treatment were assessed at intake, discharge, and 6 months posttreatment. Higher service to others predicted reduced recidivism, reduced relapse, and greater character development. Experiencing divine love enhanced the effect of service on recidivism. Greater attention to spiritual virtues might improve treatment for youth involved with alcohol, drugs, and certain forms of crime.

KEYWORDS

Youth addiction;
adolescents; spirituality;
service; Alcoholics
Anonymous

“[The] Twelve Steps when simmered down ... resolve themselves into the words ‘love’ and ‘service.’” (Dr. Bob, Alcoholics Anonymous, 1980, p. 338)

Introduction

The 21st century has witnessed a dramatic increase in addiction among U.S. youth, with similar rates of alcohol and other drug (AOD) use disorders among girls and boys (Mulye et al., 2009). The recent legalization of marijuana in several states, the plethora of prescription medications, and the prevalence of street drugs including methamphetamines gives youths the greatest access to controlled substances since the initiation of the “War on Drugs” (Hurley & Mazor, 2013). AOD-related problems among youths are also on the rise in terms of crime, vandalism, and violence, along with an overcrowded juvenile detention system (Drug Abuse Warning Network,

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2008; Neighbors, Kempton, & Forehand, 1992; Teplin, Abram, & McClelland, 1996; Webb, 2009). Sexually transmitted diseases acquired through intoxicated unprotected sex, AOD-related accidents, and emergency room visits have dramatically risen among young adults (Coleman & Carter, 2005; Drug Abuse Warning Network, 2008; Eigen, 1991; Milgram, 1993; Miniño, Xu, & Kochanek, 2010; U.S. Department of Transportation, 2009). Addiction and related problems have increased among youths in tandem with a decline in resources that contribute to adolescent development. This generation of young adults has grown up with more child abuse, violence, and single parent households, as well as less religious activity, social connectedness, and volunteerism—risk factors that have been linked to increased likelihood of adolescent addiction (B. R. Johnson, Pagano, Lee, & Post, 2015; Pagano, Wang, Rowles, Lee, & Johnson, 2015).

Character development, Alcoholics Anonymous, and adolescent addiction

The impact of these social trends on adolescent development of values and character is a topic of much debate. There is evidence pointing to a constellation of “depraved state” (Lengfeld, 1919, p. 306; White, 2002) characteristics that profile adolescents with addiction, although contemporary researchers use other terms to capture this state (e.g., “feared self” or “spoiled identity,” see Paternoster & Bushway, 2009, pp. 1106–1107). Common elements identified by the National Academy of Sciences include difficulties with impulse control and delaying gratification; an antisocial, defiant attitude; envy; high perceived social alienation; and a heightened sense of stress (Nelson, 1983, n.p.). Similarly, other researchers have pointed to the “excessive, repetitive use of pleasurable activities to cope with unmanageable internal conflict, pressure and stress” (Hatterer, quoted in Nelson, 1983, n.p.). More recent research has confirmed the importance of negative affect and impulsivity, while adding low conscientiousness as a risk factor (Terracciano, Löckenhoff, Crum, Bienvu, & Costa, 2008). Involvement in crime is also associated with AOD use and this relationship is mutually reinforcing, with antisocial thoughts and deviant peer groups playing a key role (Wooditch, Liensheng, & Taxman, 2014). Taken together, these characteristics suggest an underlying state of low self-worth and deprivation that drive addiction and externalizing behaviors such as stealing, lying, trespassing, or vandalism.

Addiction has been referenced as a disease of distorted perception of self and lack of regard for others. Egocentric thinking is posited as a root cause of addiction and appears to be elevated among millennial youths (Carter, Johnson, Exline, Post, & Pagano, 2012). Alcoholics Anonymous (AA; 1953) frames the collection of characteristics associated with addiction as “instincts gone awry” and their solution is a form of character development that includes a spiritual dimension:

We have been demanding more than our share of security, prestige, and romance. . . . Never was there enough of what we thought we wanted. . . . We had lacked the perspective to see that character-building and spiritual values had to come first, and that material satisfactions were not the purpose of living. Quite characteristically, we had gone all out in confusing the ends with the means. Instead of regarding the satisfaction of our material desires as the means by which we could live and function as human beings, we had taken these satisfactions to be the final end and aim of life. (p. 71)

For AA, a spiritual void feeds the egocentrism and self-aggrandizement that is the root cause of addiction and leads to a “baseline subjective sense of restlessness, irritability, and discontent” (Sussman, 2010, p. 28). The AA “Big Book” states without equivocation: “Selfishness—self-centeredness! That, we think, is the root of our troubles. . . . Above everything, we alcoholics must be rid of this selfishness. We must, or it kills us” (AA, 2001, p. 62). AA is quite clear that this feeling of never having enough and not being enough could be successfully addressed by becoming involved in spiritual virtues associated with “circles of love and service”—to borrow the title of a popular AA pamphlet (AA, 1978).

Social and emotional learning interventions, of which AA can be understood to be an example, have demonstrated a positive impact on both AOD use and character development (Kellam et al., 2008; Lewis et al., 2012; Payton et al., 2008). In addition, character development has mediated the impact of such programs on AOD use in at least some studies (Lewis et al., 2012). The value of character education is becoming more widely recognized in a variety of settings and has been defined as “fostering the *habits of mind, heart, and action* that enable an individual to flourish” (Bohlin, Farmer, & Ryan, 2001, pp. 1–2). Humility and leadership are especially important to character education and human flourishing. Humility, defined as “a willingness to both recognize and correct our moral failings,” is one of the key components that acts as a “bridge between moral judgment and moral action” for youths and is also at the core of AA’s approach (Lickona, 1999, n.p.). Leadership has also received significant attention in character education in religious and secular settings (Roehlkepartain, Ebstyn King, Wagener, & Benson, 2006). Both humility and leadership have been an important focus of character education in schools (Fertman & van Linden, 1999; Lickona, 1999).

Deprivation, delinquency, and adolescent addiction

Character development is inhibited by the experience of deprivation in an emotional or material sense. Adolescents often use alcohol and drugs to meet the developmental need to fit in, while drowning out a pervasive sense of not being ‘good enough’ (Pagano et al., 2015). This *feeling* of deprivation is frequently connected to a previous *experience* of having actually been deprived of

some important resource, such as a loving caregiver or adequate material resources (Winnicott, 1984). But absolute deprivation may be less important than the cognitive appraisal that what one has is unjustly less than what members of a relevant reference group possess (Smith, Pettigrew, Pippin, & Bialosiewicz, 2012). This process extends to a wide variety of outcomes including delinquency, which is strongly linked to both deprivation and AOD use (Inciardi, Horowitz, & Pottieger, 1993). Greater exposure to materialistic culture also seems to exacerbate individual feelings of deprivation. This is especially relevant for crimes of acquisition such as theft and burglary (Yang, Ramasubramanian, & Oliver, 2008). Adolescents who vandalize or steal the property of others are often struggling to cope with a sense of emotional deprivation that involved an early separation from an important caregiver (Winnicott, 1984). When counseling the parents of a “deprived child,” Winnicott (1984, p. 121) advised them that the child is not ultimately interested in the stolen items; instead, stealing is an indirect way of making a claim on the parents because the child feels “deprived of their love.” Shoplifting has long been understood to be an expression of an underlying sense of being unfulfilled that is associated with earlier experiences of deprivation, as well as a lack of self-esteem linked to early childhood stress and social isolation (Russell, 1973; Yates, 1986).

Unfortunately, social trends related to increased trauma among youths, higher levels of single parent households, less religious activity, lower levels of social connectedness and less volunteerism all contribute to the psychological profile of deprivation, delinquency, and addiction among adolescents (B. R. Johnson et al., 2015). These trends may indicate an underlying spiritual emptiness and corresponding sense of low self-worth that can be addressed by strategies that reframe one’s life (and its stresses) to make it more meaningful while also improving one’s self identity. For example, Paternoster and Bushway’s (2009) identity theory of criminal desistance may be particularly relevant for delinquent substance abusers in treatment. In this framework an offender’s current and future self-identity is critical to whether they persist or desist from criminal behavior. Paternoster and Bushway (2009) argue that many individuals have aspirations about what they hope to become (the positive possible self) as well as anxiety over what they fear they may become (the feared self). They argue that a “crystallization of discontent” (p. 1103) can provide the initial motivation to change the self. Moreover, this initial motivation can be bolstered by a change of preferences and social networks. Thus, we posit that AA can provide a path for enhancing a new and positive emerging self that overcomes feelings of deprivation and character deficits.

Spiritual virtue, Alcoholics Anonymous, and adolescent addiction

Alcoholics Anonymous is almost universally recommended by addiction treatment programs as an adjunct to modalities such as cognitive behavioral

therapy, reality therapy, individual and family therapy, and medication-assisted treatment. Nearly half of youths are required to participate in 12-Step groups during treatment and almost 9 out of 10 are linked to these groups after treatment (Kelly, Pagano, Stout, & Johnson, 2011). The primary purpose of AA is to carry the message of recovery to other addicts, so service to others has been a fundamental programmatic activity and mechanism for sustaining character development and behavioral change in the 12-Step program since 1935 (Pagano, Friend, Tonigan, & Stout, 2004). A decade of research has emerged in the 21st century demonstrating the benefits of AA helping on adolescent outcomes. These include enhanced sobriety (Lee, Veta, Johnson, & Pagano, 2014; Pagano et al., 2015), reduced negative self-appraisal and symptoms of depression (Pagano, Phillips, Stout, Menard, & Piliavin, 2007; Pagano, Zetmore, Onder, & Stout, 2009), decreased incarceration (Pagano et al., 2015), and higher levels of social involvement (Pagano, White, Kelly, Stout, & Tonigan, 2013). AA's focus on service has been found to help addicts get "out of self" through the mechanism of helping fellow sufferers and in the process help themselves reduce the likelihood of relapse (B. R. Johnson et al., 2015; Pagano, White, et al., 2013).

Recent research has identified another key ingredient in AA's process of behavioral change: spirituality. A large and growing body of research has supported the positive effects of spiritual and religious variables on a host of physical and emotional health outcomes and quality of life indicators (Koenig, King, & Carson, 2012). This has also been associated with reduced AOD use in multiple studies, although the precise operationalization has varied, including formal religious practices and beliefs, spiritual experience, or God consciousness, (Kelly et al., 2011; Lee et al., 2014; Pagano, Kelly, et al., 2013; Pagano, Post, & Johnson 2011; Pagano, Zeltner, et al., 2009; Pagano, Zetmore, et al., 2009). AA argues that a spiritual awakening works hand in hand with service to others and results in character development, which includes the "adoption of new attitudes and behaviors that are incompatible with an intoxicated [and criminal] lifestyle and that facilitate attributing new meaning to life stress" (Kelly et al., 2011, p. 1001; Lee et al., 2014). The goal is mature character, which involves a "movement from self-centeredness to God-centeredness," however the term "God" might be understood (Keating, 2009, p. 3).

Counselors routinely address the spiritual emptiness that is associated with poor mental health and substance dependence. For some clinicians, "spirituality is the therapy, it is the treatment, it is recovery" (Booth, 2012). Yet despite the demonstrated importance of the experience of divine love for well-being and benevolent service, the effect of this particular spiritual experience has yet to be isolated in an AOD study (Lee, Poloma, & Post, 2013). Previous research suggests that only "some aspects of spirituality" might be consistent predictors of AOD use (Sussman, 2010, p. 42). A focus

on the experience of divine love has the potential to enhance our understanding of this complicated issue by directly measuring the core experience that empowers belief, ritual, and durable organization across many religious and “spiritual but not religious” groups (Lee et al., 2013).

The twin spiritual virtues of openness to divine love and service to others have been identified as the “heart of religion,” at least in Christianity, the tradition that is the most prevalent in the U.S. (Lee et al., 2013). This tradition shaped the formation of AA and helping alcoholics find a “God of one’s own understanding” is a primary purpose of the AA “Big Book.” The Bible links love and service by stating that “faith without works is dead” (James 2:20, KJV trans.), this idea is highlighted in the “Big Book” (AA, 2001, p. 76), and Dr. Bob boiled the essence of the 12-Step program down to “love and service,” as noted in the epigraph. We therefore refer to these two experiences (encountering God’s love and engaging in service to others) as spiritual virtue.

Study aims

This is the first study to quantify two central spiritual virtues (divine love and helping others) to test their main effects independently and in combination on behavioral change among juveniles with addiction. Taking this step addresses important limitations in the research literature, including a lack of knowledge about how AA-related service shapes character and delinquent behaviors, as well as the possible additive benefits to service when combined with divine love. Specifically, we test three hypotheses: (1) youths entering treatment with lower levels of spiritual virtue (divine love and service to others) will have fewer inner resources, which indicates a state of deprivation (e.g., abuse history, single parent household, lower readiness to change, lower lifetime religious practices, higher criminal activity, higher AOD use); (2) getting active in service during treatment will be associated with character reform post-treatment (reduced risk of relapse, improved character, less theft/burglary/vandalism); and (3) the benefits of service on post-treatment outcomes will be pronounced when combined with divine love.

Method

Procedures

Participants were 195 youths aged 14 to 18 years entering residential treatment at a large adolescent treatment facility. Inclusion criteria included the following: ages 14–18 years, English speaking, stable address and telephone, met diagnostic criteria (American Psychiatric Association [APA], 2000) for current AOD dependency, not currently suicidal/homicidal, and medical

clearance verifying the absence of acute intoxications and withdrawal symptoms. In the week before admission date, participants were sent an information packet with an invitation letter to participate in the study. Following the admission interview with clinical staff, participants were approached by research staff and given a brief description of the study. Eligible participants signed statements of informed consent/assent, and were scheduled for an intake interview. Clinical staff members were not informed of any research results, and research data were not entered into participants' medical records. Participants were paid \$25 after a completed interview.

Of the 211 patients approached, none were ineligible and 16 refused to participate, resulting in an enrollment sample of 195 subjects. 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, as reported in detail elsewhere (Kelly et al., 2011). Eighty-nine percent of the enrollment sample completed treatment, 6% were prematurely discharged against medical advice, and 5% were transferred to a higher-level medical facility. Discharge assessments were unable to be scheduled for 3 treatment completers, 3 premature discharges, and 2 higher-level facility discharges. There were no significant intake differences between participants with ($N = 185$, 96%) and without a discharge interview ($N = 8$, 4%). Eight percent ($N = 16$) of the enrollment sample were incarcerated at the time of their 6-month interview and were thus unable to be interviewed. Of those eligible for scheduling of 6-month interviews ($N = 179$), 87% ($N = 156$) completed a 6-month interview, 12% ($N = 21$) were lost to follow-up, and 1% ($N = 2$) refused study participation. There were no significant differences between participants with and without a 6-month interview in terms of intake characteristics or treatment duration. All study procedures were approved by the Case Medical Center Institutional Review Board for human investigation, and a Certificate of Confidentiality from the National Institute on Alcohol Abuse and Alcoholism was obtained. Further details regarding study design, sample and assessment procedures are provided elsewhere (Kelly et al., 2011).

Setting

The setting for this study is an intensive residential treatment program located in northeast Ohio (New Directions). It is monitored 24-hours per day and provides a range of therapies to individuals, groups of clients, and families. While in residential treatment, clients spend roughly 20 hours each week in therapeutic activities, with AA as an adjunct to formal programs. Services provided in residential treatment include gender-specific group therapy, family and individual therapy, education, and relapse prevention. Clients attended at least three 12-Step meetings each week of

the residential treatment program ($M = 2.2$ months). Clients are eligible to go on pass after their initial week in treatment, and clinicians collect urine toxicology screens upon their return as part of treatment procedures.

Measures

Data were gathered via rater-administered interviews, youth-reports, medical chart review, and electronic court records. Participants completed a semi-structured interview in a private location with a research assistant at three time points: at baseline in the week following the admissions interview ($M = 7$ days, range 0–10 days), treatment discharge, and 6-months after the date of discharge. Semi-structured interviews were conducted in person by experienced clinical interviewers whose training ranged from B.A. to M.D. Training of interviewers included didactic tutorials, mock interviews and role-playing, and supervised interviews with detailed feedback from the Principal Investigator. All individuals involved in collecting human subjects' data completed the National Institute of Health required courses on human subjects' protection.

Background

Background characteristics associated with outcomes in prior work (Pagano et al., 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, lifetime religious practices, and lifetime traumatic experiences. Urbanicity of residence was assessed using the zip code approximation version of the census tract-based Rural–Urban Commuting Area codes (<http://depts.washington.edu/uwruca/ruca-data.php>). 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 *excellent* (5) to *poor* (1). Prior studies have demonstrated good construct validity of this item in relation to biomarkers and perceived life satisfaction in adolescents (Luhtanen & Crocker, 2005; Sivak & Schoettle, 2011). Youths also completed the lifetime formal practices subscale from the Religious Beliefs and Behaviors questionnaire (Connors, Tonigan, & Miller, 1996) and the lifetime traumatic experiences scale adapted from the valid Massachusetts Youth Screening Inventory (Grisso & Barnum, 2000), both of which showed good internal consistency in the current sample ($\alpha = 0.86$ – 0.88). 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 ($r = .2$, $p < .01$).

Addiction severity

Two indices of addiction severity were 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), which showed excellent internal consistency in the current sample ($\alpha = .91$). 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 (ASI; Hendricks, Kaplan, Van-Limbeck, & Geerlungs, 1989). There were no significant correlations between addiction severity indices ($r_s = -.1 - .1, ns$).

Outcomes

Outcomes studied were AOD use, character development, and related crimes indicative of youths' lack of consideration of others' property. AOD use was assessed with the valid and reliable Timeline Follow-Back interview (TLFB; Donohue et al., 2004). Following the TLFB administration manual (Sobell & Sobell, 1996), the interviewer used a calendar grid and memory anchor points to aid participant recall of daily drinking and/or drug use on each day in the assessment period. Data on alcohol use were collected on the first pass through the calendar, followed by use of 7 drug types (cannabis, cocaine, hallucinogens, sedatives/hypnotics, narcotics, stimulants, and inhalants). 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 ($\kappa = .87$). Two indices of character development were assessed: humility and leadership. 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 consistency in the current sample ($\alpha = .82$). Leadership was assessed with the valid Narcissistic Personality Inventory leadership/authority subscale (Emmons, 1984), which showed good internal consistency in the current sample ($\alpha = .84$). Participation in criminal offenses that indicated a lack of consideration of others' property was used as an indicator of a character deficit. Theft, burglary, and vandalism offenses were assessed from electronic court records maintained in booking databases maintained by 16 municipal court districts referring participants to treatment. Because youths as young as 16 years could be charged as adults, adult court records were also collected from referring municipal courts. Participants were matched to the booking databases on last name, first

name, gender, and date of birth. When electronic records were not available, paper copies with equivalent data points were provided by the courts to the research team. Each committed offense recorded the offense date, category (theft, burglary, vandalism), type (felony, misdemeanor), severity level from most severe (1) to least severe (5), and AOD involvement (yes/no). Theft, burglary, and vandalism offenses committed in the year prior to intake and in the 6-months post date of discharge were recoded and reviewed by an experienced peer interviewer for completeness and accuracy. Court records have shown high correlation with youth-report of legal involvement (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). With the exception of a low correlation between burglary and theft offenses ($r = .2, p < .01$), outcomes were not correlated at intake ($r_s = -.1 - .1, ns$).

Predictor variables

Service participation was assessed using the Service to Others in Sobriety (SOS) questionnaire (Pagano et al., 2010), a 12-item self-report of AA-related helping that has shown good psychometric properties in the current sample (Pagano, Kelly, et al., 2013). With reference to the past month, 12 SOS items were rated from 1 (*rarely*) to 5 (*always*) and summed; a score of 40+ was 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 divine love: “I feel God’s love for me directly” and “I feel God’s love for me through others.” DSES items were rated on a Likert scale from 5 (*always*) to 1 (*never*). Based on prior work (Lee et al., 2013), high love (high L) was defined as endorsement of “always” to either of the 2 DSES items.

Statistical analytic plan

Statistical analyses were conducted with SAS Version 9.2 (SAS Institute Inc., 2002), using PROC FREQ, PROC LOGISTIC, and PROC MIXED. Distributions of variables were examined for normality; positively skewed variables (longest time sober, PDA) were given a square root transformation, as was done in Project MATCH (Project MATCH Research Group, 1997). Differences between groups were examined using Fisher’s Exact Test for binary variables and Kruskal-Wallis chi-squared test for continuous variables. Because post-treatment crimes were significantly correlated (phi correlations: 0.2 – 0.3, $p < .01$), a logistic regression with a correction for over-dispersion examined main effects of High H and High L and their interaction term on likelihood of committing 1 or more (1+) crimes post-treatment. Random effect regressions examined main effects of High H and High L, and a High H X High L interaction term on continuous outcomes (character, PDA); subjects were modeled as random effects with an unstructured covariance

design. Intake covariates (background, AOD severity) associated with outcomes in prior work (Lee et al., 2014; Pagano, White, et al., 2013) and pre-treatment levels of High H and High L and the outcome variable were included in regression models. Preliminary analyses suggested that linear modeling was adequate. Examination of the correlation matrix for independent variables in analytic models found no correlation to exceed 0.3 and collinearity diagnostics indicated no problems. For the purposes of interpretation, Cohen (1988) considers $r = .10$ “small,” $r = .30$ “medium,” and $r = .50$ “large.” We reported all 2-tailed tests with significance values greater than 95% ($p < .05$).

Results

Sample at intake

Table 1 shows the sample ($N = 195$) at intake. Most youths were marijuana dependent (92%) with comorbid alcohol dependency (61%), with rates comparable to other samples of adolescents in residential treatment (Godley, Godley, Dennis, Funk, & Passetti, 2002; Hall, Howard, and McCabe, 2010). Approximately half were male (48%), from a rural/small town (50%), and living in a single parent household (50%). Thirty-two percent were African American, and 8% were Hispanic. Participants were 16 years old on average ($M = 16.2$) and in the 10th grade ($M = 10.1$ years of education). Most were admitted into treatment for the first time (91%) in good global health (68%), with an assigned probation officer (83%), in the lower two stages of readiness for change (63%), and had a parent without a college degree (73%). Youths on average used AOD on 18 of the 30 days prior to treatment, and the average longest period of time sober was 62 days. Forty-five percent had committed a vandalism offense in the prior year, 30% had a theft offense, and 17% had been involved in a burglary; most offenses were misdemeanors (73%) and did not involve AOD (83%). Additional information regarding the profile of the sample at intake is detailed elsewhere (S. M. Johnson, Carter, & Pagano, 2011; Kelly et al., 2011).

Clinical characteristics associated with love and service

As Table 1 shows, the majority of the sample (72%) entered treatment with low levels of helping others and low levels of experiencing divine love (Low H/Low L). High L/Low H (17%) was more common than High H/Low L (8%), and High H/High L was rare (4%). After approximately two ($M = 2.2$) months of treatment, 56% of the sample endorsed Low H/Low L, 11% reported Low H/High L, 23% reported High H/Low L, and 10% reported High H/High L. There was substantial stability in virtue grouping across time ($\text{kappa} = .5, p < .001$)

Table 1. Intake profile of sample.

Intake variable	Total (195, 100%)	Spiritual virtues (divine love and helping) at intake				
		Low H/low L 140 (72%)	Low H/high L 33 (17%)	High H/low L 15 (8%)	High H/high L 7 (4%)	
Background						
Male	93 (48%)	70 (50%)	11 (33%)	8 (53%)	4 (57%)	
Minority	62 (32%)	46 (33%)	8 (24%)	6 (40%)	2 (29%)	
Hispanic	15 (8%)	10 (7%)	4 (12%)	1 (7%)	0 (0%)	
Age (years)	16.2 (1.1)	16.2 (1.1)	16.0 (1.1)	16.2 (0.9)	17.3 (0.8)	
Grades 9–10	119 (62%)	85 (62%)	25 (76%)	7 (47%)	2 (29%)	
Parent BA+	53 (27%)	35 (25%)	10 (30%)	6 (40%)	2 (29%)	
Single parent	97 (50%)	69 (49%)	12 (36%)	10 (67%)	6 (86%)	
Rural/small town	103 (53%)	78 (56%)	15 (45%)	6 (40%)	4 (57%)	
Good health	133 (68%)	97 (69%)	23 (70%)	7 (47%)	6 (86%)	
Lifetime religiosity***	4.0 (2.4)	3.5 (2.3) ^b	5.3 (2.4) ^a	4.3 (2.0) ^b	6.4 (1.7) ^a	
Trauma experiences	1.7 (1.5)	1.7 (1.5)	1.6 (1.4)	2.4 (1.5)	1.6 (1.1)	
Prior treatment	17 (9%)	9 (6%)	1 (3%)	1 (7%)	1 (14%)	
Longest time sober	62.6 (36.8)	61.3 (37.3)	70.8 (34.4)	46.2 (36.5)	86.0 (18.1)	
readiness for change*	11.0 (2.5)	10.8 (2.5) ^b	11.5 (2.3) ^b	11.6 (2.2) ^b	12.8 (2.7) ^a	
Outcomes at intake						
Character						
Leadership	3.6 (1.4)	3.6 (1.5)	3.8 (1.5)	3.5 (1.1)	3.9 (1.3)	
Humility	27.9 (11.2)	27.1 (12.6)	28.7 (5.4)	32.3 (5.0)	30.7 (6.5)	
Criminal						
Theft	59 (30%)	39 (28%)	13 (39%)	5 (33%)	2 (29%)	
Burglary	34 (17%)	23 (16%)	4 (12%)	5 (33%)	2 (29%)	
Vandalism	87 (45%)	63 (45%)	19 (58%)	5 (33%)	0 (0%)	
AOD use	0.4 (0.3)	0.4 (0.3)	0.5 (0.2)	0.5 (0.3)	0.5 (0.2)	

Notes: H = helping others; L = divine love; Parent BA+ = parent has a four-year college degree or higher; AOD = alcohol and other drugs; PDA = percent days abstinent.

Groups sharing the same letter (^a or ^b) are not significantly different.

* $p < .05$. *** $p < .001$.

with 56% reporting no change in their virtue grouping, 31% increased in their virtue grouping, and 13% decreased in their virtue grouping.

Two of the 6 hypothesized clinical characteristics were associated with levels of virtue at intake: readiness-for-change ($F = 8.2, p < .001$) and lifetime formal religious practices ($F = 3.0, p < .05$). Post-hoc Tukey comparisons showed a significant influence of formal religious practices on levels of L but not H, and higher readiness-for-change among youths with High H/High L than other groups. These characteristics also distinguished virtue groups at discharge and lower virtue was also related to higher levels of trauma at that time point (see Table 2).

Impact of love and service on posttreatment outcomes

Six-month outcomes are presented in Table 3. Although PDA scores were higher 6-months post-treatment ($M = .81, t = 13.1, p < .0001$), there was little change in humility ($M = 29.1, t = .22, p = .77$) or leadership ($M = 4.6, t = -1.21, p = .22$) from levels reported at intake. Twenty-six percent of the sample committed at least 1 offense in the 6-months post-treatment (13% theft, 10% burglary, 6% vandalism) and very few offenses (<5%) involved AOD use. Most theft and vandalism crimes were misdemeanors (67%) whereas 75% of burglary crimes were felonies.

As shown in Table 3, High H during treatment was associated with greater improvements in PDA, character, and reduced risk of committing crime in the 6 months post-treatment. In comparison to youths with Low H, youths with High H had significantly higher PDA ($M = .86$ vs. $M = .65$), humility ($M = 37.4$ vs. $M = 28.9$), and leadership ($M = 6.32$ vs. $M = 4.60$) at 6-months post-treatment (Figure 1). A significant High H \times High L interaction on likelihood of crime provided support for our third hypothesis of additive benefit from High H when combined with High L. While 63% of youths low in both virtues during treatment committed a crime post-treatment, only 7% of youths high in both virtues committed a crime post-treatment, approximately half the rate observed among youths high in one virtue (15%).

Most covariates were not associated with 6-month outcomes. However, minority youths had significantly higher leadership scores at 6-months than non-minority youths ($M = 4.7$ vs. 4.5). Older age was associated with decreased risk of crime post-treatment and lifetime religious practices were associated with increased humility.

Discussion

This study is the first to assess the relationship between two specific spiritual virtues (the experience of divine love and service to others) and AOD use,



Table 2. Characteristics of youths with high versus low helping and divine love at discharge.

Intake variable	Total (N = 195)	Spiritual virtues at discharge					
		Low H/low L 109 (56%)	Low H/high L 22 (11%)	High H/low L 45 (23%)	High H/high L 19 (10%)		
Background							
Male	93 (47.7)	60 (55.0)	9 (40.9)	21 (46.7)	3 (15.8)		
Minority	62 (31.8)	39 (35.8)	8 (36.4)	9 (20.0)	6 (31.6)		
Hispanic	15 (7.7)	7 (6.4)	1 (4.5)	4 (8.9)	3 (15.8)		
Age (years)	16.2 (1.1)	16.2 (1.1)	16.0 (0.9)	16.1 (1.0)	16.5 (0.9)		
Grades 9–10	119 (61.7)	67 (62.6)	16 (72.7)	24 (53.2)	12 (63.2)		
Parent BA+	53 (27.2)	32 (29.4)	8 (36.4)	10 (22.2)	3 (15.8)		
Single parent	97 (49.7)	58 (53.2)	8 (36.4)	22 (48.9)	9 (47.4)		
Rural/small town	103 (52.8)	58 (53.2)	9 (40.9)	25 (55.6)	11 (57.9)		
Good health	133 (68.2)	75 (68.8)	10 (45.5)	33 (73.3)	15 (78.9)		
Lifetime religiosity***	4.0 (2.4)	3.5 (2.3) ^c	5.0 (2.2) ^{ab}	3.9 (2.5) ^{b,c}	5.8 (1.8) ^a		
Trauma experiences*	1.7 (1.5)	1.4 (1.4) ^b	1.6 (1.5) ^{ab}	2.0 (1.5) ^{ab}	2.4 (1.1) ^a		
Prior treatment	17 (8.7)	9 (8.3)	1 (4.5)	7 (15.6)	0		
Longest time sober	62.6 (36.8)	60.3 (36.2)	66.0 (38.3)	59.6 (38.6)	79.1 (31.9)		
Readiness for change**	11.0 (2.4)	10.8 (2.5) ^b	11.5 (2.3) ^{ab}	11.6 (2.2) ^{ab}	12.8 (2.7) ^a		
Outcomes at intake							
Character							
Leadership	3.6 (1.4)	3.7 (1.5)	3.5 (1.3)	3.6 (1.5)	3.5 (1.3)		
Humility	27.9 (11.2)	27.5 (13.8)	27.8 (5.7)	27.7 (6.7)	30.6 (6.8)		
Theft	59 (30.3)	32 (29.4)	6 (27.3)	16 (35.6)	5 (26.3)		
Burglary	34 (17.4)	18 (16.5)	4 (18.2)	9 (20.0)	3 (15.8)		
Vandalism	87 (44.6)	42 (38.5)	13 (59.1)	22 (48.9)	10 (52.6)		
PDA	0.4 (0.3)	0.4 (0.3)	0.5 (0.2)	0.5 (0.3)	0.3 (0.3)		
Spiritual virtues at intake							
High helping (intake)	22 (11%)	8 (7%)	3 (14%)	7 (16%)	4 (21%)		
High love (intake)	40 (20%)	14 (13%)	14 (64%)	4 (9%)	8 (42%)		

Notes. H = helping others; L = divine love; Parent BA+ = parent has a four-year college degree or higher; AOD = alcohol and other drugs; PDA = percent days abstinent;

Groups sharing the same superscript letter (^a, ^b or ^c) are not significantly different.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Impact of spiritual virtues (helping others and divine love) on posttreatment outcomes.

	Recidivism	Character		AOD
	1+ Crime	Leadership	humility	PDA
	43 (22%)	4.6 (1.3)	29.1 (3.7)	0.81 (0.3)
	OR	F	F	F
<i>Discharge variables</i>				
Spiritual principles at discharge				
High H	5.21*	19.81***	15.88***	8.18**
High L	0.04	4.41*	2.85	0.79
High H x High L	6.42*	1.23	0.41	0.18
Treatment duration	1.32	1.01	1.18	1.98
<i>Intake variables</i>				
Background				
Male	1.95	0.06	0.47	0.04
Minority	3.49	10.80**	0.22	2.39
Hispanic	0.45	0.07	0.21	0.88
Age (years)	7.45**	0.40	0.64	0.08
Parental education	3.00	3.22	2.54	2.77
Single parent	1.31	3.15	0.26	1.43
Rural/small town	2.01	1.47	0.05	2.45
Health	0.67	3.21	1.12	0.59
Lifetime religiosity	1.47	0.86	4.79*	0.48
Trauma experiences	2.00	0.15	0.05	0.02
AOD severity				
Prior treatment	0.01	0.04	0.01	0.65
Longest time sober	2.34	0.62	0.23	0.30
Readiness for change	0.01	0.26	0.36	0.50
Spiritual principles at intake				
High H	1.47	0.01	3.32	0.09
High L	0.89	0.08	0.28	0.42
Dependent variable at intake	4.82*	14.22**	0.36	7.89**

Note. AOD = alcohol and other drugs; PDA = percent days abstinent; OR = odds ratio; H = helping, L = divine love.

* $p < .05$. ** $p < .01$. *** $p < .001$.

self-centered delinquent activity, and positive character development for youths in residential treatment with AA as an adjunct therapy. We found some support for our hypothesis that youths entering treatment with lower levels of virtue are associated with a state of deprivation, with significant effects for lower readiness to change and lower lifetime religious practices, but not abuse history, association with a single parent household, delinquent background, or AOD severity. Consistent with previous research, in the six months post-discharge we found that youths who became active in service during treatment displayed reduced risk of relapse. We advanced the literature by demonstrating that these service-active adolescents also exhibited lower theft, burglary, or vandalism. Taken together, AOD and delinquency are outcomes that both AA and scholars have framed as evidence of selfishness, deprivation, or a “feared self” (B. R. Johnson et al., 2015; Paternoster & Bushway, 2009). Service can be seen as a character-building exercise that

may reduce involvement in these selfish yet ultimately self-destructive acts. We further extended the research to date by providing support for the benefits of service on positive character development, specifically leadership and humility. We also hypothesized that the effect of service on post-treatment outcomes would be more pronounced when combined with divine love and we found that this was the case only for delinquency recidivism. We also found that older youths were less likely to recidivate, that minorities and those who experienced higher levels of divine love were more likely to develop their leadership capacities, and that those with higher lifetime religious practices became more humble.

Only service and the level of AOD use at intake predicted percent days abstinent at the 6-month time point. Previous research with adults found that those who were working the 12th Step of actively helping other alcoholics were almost twice as likely to have avoided alcohol in the year after treatment as those who were not helping others (Pagano et al., 2004). The beneficial effects of 12-Step service on AOD use has also been demonstrated for youths, particularly those dealing with social anxiety disorder (Pagano et al., 2015). There are many reasons, including the suggestion that in the act of helping others with a similar problem, the helper may gain insight into their own character deficiencies that need to be addressed, as well as an increased commitment to solving their own problems (Zenmore & Pagano, 2008). Our study proposes a complimentary pathway: character development. Previous work established that youth spiritual development in AA was associated with reduced narcissism and AOD use and increased service to others (Lee et al., 2014). The strong link between service and leadership/humility in the current study confirms that we would be well-served by further understanding the role of character in pathways to sobriety. Service in a 12-Step context advances character by reframing negative self-appraisals and life stress as resources that can be used to help similarly situated others in a context of mutually improving habits of mind, heart, and action (Bohlin et al., 2001; B. R. Johnson et al., 2015; Kelly et al., 2011; Lee & Pagano 2014).

Our results also confirm the value of attending to specific spiritual experiences, such as divine love, rather than relying on aggregated scales that might mask particularly important active ingredients (cf. Lee et al., 2014). Reviews of the literature involving both cross-sectional and prospective studies, as well as clinical and non-clinical samples, routinely find that spirituality and religiosity are associated with reduced AOD use (Kelly & Greene, 2014). Although that is not the case in our study, we did find that the experience of divine love enhances the impact of service on recidivism and exerts a direct effect on leadership. These findings advance the previous research on the positive effects of divine love on well-being and benevolence (Lee et al., 2013). What might account for the lack of a direct effect of divine love in three out of four of our models? AA, drawing on the Christian scriptures,

argues that, “Faith alone is insufficient. To be vital, faith must be accompanied by self sacrifice and unselfish, constructive action” (AA, 2001, p. 93). Furthermore, the AA “Big Book” notes that, “we work out our solution on the spiritual as well as an altruistic plane” (AA, 2001, p. xxvi), again indicating the importance of linking faith to service. We need more research on the interaction of love and service to better understand Dr. Bob’s essential components of AA, but our study suggests that this is a fruitful avenue for investigation.

Our findings on the effect of the twin virtues of divine love and service on recidivism are consistent with research on Prison Fellowship Ministries (PF), the group with the most pervasive outreach of existing prison ministries in the U.S. PF views faith as the critical ingredient in offender rehabilitation and offers offenders weekly Bible studies. Although the experience of divine love does not necessarily follow from Bible study, there is anecdotal evidence that this is a possible outcome. For example, recent research on PF highlights the case of an inmate “Nat,” who said that the PF program got him in touch with a higher power (Jesus) that helps him stay sober. Nat refers to having a sense of “power” and “peace” through his relationship with God that motivates him not to break the “pact” he has made not to drink and gives him a “calmness of spirit” (B. R. Johnson, 2011, pp. 140–141). As with AA, PF members assume leadership roles in serving the organization and others. In PF, this takes the form of mentors, deacons, and elders (B. R. Johnson, 2011), with analogous roles in AA being sponsors, group chairpersons, or general service representatives. The PF intervention has been shown to be associated with reductions in adult recidivism (B. R. Johnson, Larson, & Pitts, 1997), an effect that persists even two or three years post-release (B. R. Johnson, 2004). The PF findings, when combined with those of the current study, provide further support for the value of future research into the relationship between love and service.

Our results on the combined effect of love and service are consistent with the perspective that spiritual experiences like divine love may inspire and deepen motivation to serve others. This other-regarding service contrasts with helping for self-oriented reasons, such as to escape one’s problems, learn new skills, or gain in reputation. Intrinsic other-regarding reasons for service seem to produce greater benefits. For example, in a longitudinal study of older adult volunteers, those individuals who served others for more other-regarding reasons have a lower risk of mortality four years later, whereas those who serve for self-regarding reasons experience no such benefit, and sometimes even experience an increase in mortality (Konrath, Fuhrel-Forbis, Lou, & Brown, 2012). If we hypothesize that underlying motives for service matter and that benefits are limited to those agents with other-regarding motives, then the experience of divine love would increase these benefits by virtue of freeing the self from itself in order to

achieve a transcendence of self-regarding motivations. This is consistent with AA's (1953) 12 Steps, which posit a spiritual awakening preceding involvement in serving others. If spiritual experiences, and especially the experience of divine love, move the motivational structure from Buber's (1958/2000) classic "I-It" (narcissism, solipsism) to "I-Thou" (the genuine discovery of the other as a center of value equal to or greater than one's own), then perhaps the benefits of service to others will be greater because of the purity of motive that such experiences foster.

Konrath et al. (2012) hypothesize that when motives are more purely other-regarding, the biological caregiving behavioral system is engaged (emotions, underlying neurological and psychological circuitry), deactivating the stress response and elevating levels of oxytocin. Spiritual experience, in shifting the motivational structures of the self to sincere other-regard, may activate this complex caregiving circuitry. When this occurs, spiritual awakening aligns with character development by substituting humility for self-aggrandizement (AA, 2001), connectedness for isolation (Alexander, 2010; Hari, 2015; B. R. Johnson et al., 2015; Pagano et al., 2015), generosity/helping for taking (Johnson et al., 2015), and a spiritual sense of purpose for a lack of meaning (Lee & Pagano, 2014; Lee et al., 2014). Spiritual experiences also provide a lens for reinterpreting what might otherwise be debilitating negative experiences from the past associated with delinquency or addiction (e.g., "I survived for a reason"; Kelly & Greene, 2014, p. 310) in ways that enhance a sense of well-being and work alongside therapeutic approaches to addiction.

In addition to spiritual virtue, the peer group also exerts an important influence on youths. Associating with delinquent peers is one of the most consistent and strongest predictors of future delinquent behavior (Haynie, 2002; Matsueda & Anderson, 1998; McGloin, 2009; Pratt et al., 2010; Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994; Warr, 2002). However, there is considerable debate about whether the influence of peers is general (i.e., a general tendency to delinquent behavior) or crime-specific (Matsueda, 1988, 1997; Warr, 2002). While there is consensus that delinquent peers predict future delinquent behavior, Warr (2002) argues that empirical support for the general or crime-specific influences of peers remains equivocal. Thomas (2015) used multilevel latent-trait models and found that individuals who associate with friends who demonstrate specialization in violence, theft, and substance use are significantly more likely to display greater levels of specialization in those offense types themselves. If peers are likely to have specialized or crime-specific influences on friends, it is also reasonable to assume conversely that those participants high in service within AA would exhibit salutary influences on those they have befriended through service. Indeed, we find that high service is associated with greater

improvement in each outcome (PDA, character, and recidivism) at 6 months post-treatment. Future research is needed to more directly test the effects of immersion in altruistic (other-oriented) groups like AA compared to delinquent (selfish) peer groups, but our results suggest that this research is likely to prove fruitful. This effort may also have financial implications: every dollar invested in treatment saves \$4 to \$7 in reduced drug-related crime and related costs, whereas a year in prison costs \$18,400 (National Institute on Drug Abuse, 2012). The reductions in criminal activity associated with increased love and service suggest cost-savings for approaches that facilitate youth engagement in the 12-Step program.

Some limitations of our study merit discussion. First, concurrent assessment of love and service cannot determine whether these virtues influence each other. However, we do know that measured baseline characteristics did not distinguish youths who developed high love or high service. This rules out any influence from demographic and clinical variables in understanding which factors promote high love and service. Second, the increase in love and service during treatment occurred without an intervention that promoted these virtues. In other words, this study did not specifically seek to change these virtues, but instead took advantage of whatever change occurred naturalistically in a treatment setting with AA as an adjunct to therapy. Effects of love and service may be greater if an intervention had been designed specifically to foster these virtues. It may be the case that greater increases in the experience of divine love would have been observed if an intervention had been designed to foster spiritual connection. As it stands, our findings suggest that divine love is insufficient by itself for victory over addiction and associated problems, but future research is warranted to further understand the extent to which “faith without works is dead” (AA, 2001, p. 76). Third, findings may not generalize to youth populations with less severe AOD use and without judicial involvement. However, rates of relapse and recidivism are comparable to young adult populations with less severe AOD use and related problems (Liebschutz et al., 2003; Rounds-Bryant, Kristiansen, & Hubbard, 1999; Tapert, Aarons, Sedlar, & Brown, 2001). Finally, longer follow-up than 6-months post-treatment is warranted to determine the long-term effects of love and service in 12-Step contexts on sustaining sobriety, enhancing character, and reducing recidivism.

Despite these limitations, our results extend previous work conducted largely with adult Caucasian males to a mixed gender sample of juveniles with high representation of minority youth. The prospective design of this study advances our understanding of behavioral change derived from high love and service because our predictors were measured months prior to our outcomes. This time-ordering, along with the use of valid and reliable instruments to measure variables from a variety of sources (i.e., semi-

structured interviews, medical records, court-records, youth reports), represent strengths of the research design. Our self-report instruments have been shown to be highly correlated with biomarkers and chart records of youth behaviors (Donohue et al., 2004; Luhtanen & Crocker, 2005; Sivak & Schoettle, 2011). Further, youth self-reports of service are highly correlated with counselors' reports of youths' service participation (Pagano, White, et al., 2013), and youths are better informants of internalizing states than adult informants (Pagano, Cassidy, Little, Murphy, & Jellinek, 2000). In fact, the only way to assess divine love is with self-reports, given the nature of this construct as a measure of perceived experience.

Clinical implications

AA emphasized the therapeutic value of positive emotions long before the development of what is now called "positive psychology." It seeks to connect fellow sufferers with a spiritual experience that engages the limbic brain, a process that hinges on "receptivity to unconditional love" (Valliant, 2014, p. 215). AA fosters this experience by promoting the willingness to "turn oneself over to God, to a home group, or to a trusted other, as long as it were not 'me,'" which is another way of helping "oneself to feel loved" (Valliant, 2014, p. 216). AA meetings are often quite spiritual and members frequently report "feeling God's presence in their lives on a daily basis" (Galanter, 2014, p. 114). This also provides a strong sense of purpose (Galanter, 2014). A positive limbic reaction that results from the experience of unconditional love (perceived as divine, human, or both in origin) is likely to be quite meaningful. For Dr. Bob and "most long-term members of AA... some reconciliation with a Higher Power" was needed so that the fulfillment associated with love and service "displaces the need for alcohol" (Post, 2014, p. 131). This spiritual awakening is often experienced as a divine love that heals through a sense of unconditional acceptance and forgiveness, which in turn motivates service to others in a spirit of unconditional love (Post, 2014).

Our results suggest that inclusion of the twin spiritual virtues promoted by AA (love and service) might improve treatment for youth involved with alcohol, drugs, and certain forms of self-centered crime such as theft, burglary, and vandalism. AA's approach was identified in Sorokin's (1954/2002, p. 232) classic study of altruism as being consistent with that of other benevolent groups such as the Order of St. Francis and the Society of Buddha's Disciples, despite their dramatic differences in belief content, because they all required "dropping membership in the predominantly selfish groups and in continuing it in the mutually harmonious altruistic groups." Our results suggest that youths immersed in peer groups that promote self-centered delinquency can overcome the negative effects of this socialization by becoming involved in a combination of experiences related to divine love

and service. AA provides the kind of altruistic setting that is capable of improving character development, reducing AOD use, and decreasing delinquency. Carl Jung (1961, n.p.), in a letter to AA co-founder Bill W. over 50 years ago, was not without wisdom when he emphasized the power of spiritual virtue in contributing to positive clinical outcomes: “You see, ‘alcohol’ in Latin is ‘spiritus’ and you use the same word for the highest religious experience as well as for the most depraving poison. The helpful formula therefore is: spiritus contra spiritum.” We are just beginning to empirically document the clinical implications of Jung’s insight and we hope our findings encourage others to contribute to this line of research.

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