Routledge
Taylor & Francis Group

Check for updates

Toward an Understanding of the *Connections* in Creating Lasting Family Connections

Stephen R. Shamblen[a], Ted N. Strader[a], David A. Collins[a], Patrick McKiernan[c], Christopher Kokoski[b], and Brooke B. Arnold[c]

[a]Pacific Institute for Research and Evaluation, Louisville Center, Louisville, Kentucky, USA; [b]COPES, Inc, Louisville, Kentucky, USA; [c]University of Louisville, Louisville, Kentucky, USA

ABSTRACT

The Creating Lasting Family Connections® (CLFC) program is designed to help improve relationship skills and reduce anti-social behaviors. Strader and colleagues propose that prosocial connectedness is responsible for program outcomes. We propose that the intersection of high agreeableness and low impulsivity represent an operational definition. We examined this definition in the context of a RCT with 246 men in prison reentry. CLFCFP increased the number of connected individuals. Being connected and the program independently impacted relationship skills, but no evidence was found to support the hypothesis that the program impacts would be more pronounced among those who were connected.

Introduction

Creating Lasting Family Connections® (CLFC) tries to create receptivity to change by promoting the idea of prosocial connectedness. A core principle of prosocial connectedness is that feeling like one is unconnected to one's community in general, or specifically to one's family, parents, coworkers, contemporaries, or friends, results in (1) behavior that seeks personal rewards without regard to others; and (2) a lack of a positive evaluation and reaction towards others, which overlap with the constructs of impulsivity and agreeableness, respectively. Once these problems are addressed and participants become more prosocially connected, they will be more receptive to making changes taught through proven prevention practices. While indirect evidence exists suggesting that CLFC promotes prosocial connectedness, as it has been shown to increase utilization and satisfaction with the use of needed community services (Johnson et. al., 1996), this hypothesis has not been directly tested.

CONTACT Stephen R. Shamblen ✉ sshamblen@pire.org ⌨ Pacific Institute for Research and Evaluation, Louisvill, 40202, United States.

Background of the CLFC program

CLFC was designed as a family strengthening program for youth and parents to reduce a variety of negative outcomes. CLFC especially targets reductions in alcohol and other drug use, and promotes community and family connections as a broader source of protection (or resiliency). The program addresses a host of problems that serve as impediments to forming prosocial connections to family and community, which ultimately result in antisocial behavior, such as alcohol and other drug use. Relating to the goals of increasing connectedness and reducing antisocial behavior, CLFC has demonstrated (a) an increase in utilization of community services, (b) an increase in parent knowledge about alcohol and other drugs, (c) a delay in the onset of youth alcohol and other drug use, and (d) a decrease in the frequency of youth alcohol and other drug use (Johnson et al., 1996, 1998).

The CLFC program was adapted for adults as the primary recipients of training in 2004. Two adaptation variants were created expressly to (1) increase healthy marriage skills and (2) increase responsible parenting skills, both of which were developed to increase positive behavioral outcomes for each participant's entire family. These programs are designed to help anyone experiencing (or at-risk for) marital stressors or any form of physical or emotional separation (e.g., reentry from incarceration, recovery from substance abuse, military service). Relating to increasing connectedness and decreasing antisocial behavior, these adaptations have been shown to increase relationship skills (e.g., conflict resolution and interpersonal skills) and reduce intentions to binge drink and recidivism (McKiernan, Shamblen, Collins, Strader, & Kokoski, 2013; Shamblen, Arnold, McKiernan, Collins, & Strader, 2013). These CLFC adaptations were also designated as effective on SAMHSA's NREPP as of 2013. Thus, while empirical investigations have suggested the CLFC program is effective in changing outcomes, there has been little empirical examination of the theoretical underpinnings of the program.

A theory and method of measuring connectedness

A key factor in CLFC's theoretical approach to effective prevention (and treatment) is human *connectedness* (Strader, Collins, & Noe, 2000). Research on adolescence identifies family connectedness as one of the most important factors for psychological well-being and positive outcomes (Blum & Rinehart, 1997; Doll & Lyon, 1998; Field, Diego, & Sanders, 2001). Social support systems represent a proxy for connectedness among adults, and they are an important predictor of substance abuse treatment compliance and outcomes (Booth, Russell, Soucek, & Laughlin, 1992). Similarly, improved personal relationships during substance abuse treatment are

associated with reduced drug use and greater program compliance (Broome, Knight, Hiller, & Simpson, 1996).

Specifically, we define prosocial connectedness in this context as feeling emotionally close, cared about, and listened to in the broader community. Further, when *connected*, one is able to express personal thoughts and feelings, and to discover that one's self and one's family are rooted in (and connected to) a community of others in significant and meaningful ways. Feeling or perceiving one's self to be connected (to self, family, and community) appears to create a protective shield of resiliency and strength to resist problem behaviors. From this reference, the term "Connect-Immunity" was developed (see Strader et al., 2000). Similar mechanisms have been identified for negative social influence, as antisocial individuals form social networks with similar peers, resulting in increased antisocial behavior (e.g., Dishion & Tipsord, 2011). Here, we are solely concerned with prosocial connections that individuals form.

Anecdotal evidence suggests that program participants from high-risk environments often arrive for participation in programing with a lack of prosocial connectedness. Programs such as CLFC attempt to establish rapport with clients through meeting clients where they are in their social context. For instance, with prison reentry populations, trainers highlight that participants can exercise their free will—something to which members of prison reentry populations are not accustomed. The premise of CLFC is that until participants are connected (e.g., to trainers and their families), they will not experience the full benefit of more didactic and interactive training content.

The core dimensions of prosocial connectedness are one's orientation towards others and one's orientation towards the self. The personality dimension of agreeableness seems to embody the orientation towards others that CLFC attempts to foster. This becomes the most transparent in the characteristics of agreeableness explained by Costa and McCrae (1992). Based on their analysis of traits thought to constitute agreeableness, they specified six dimensions of this construct: trust, straightforwardness, altruism, compliance (or deference), modesty, and tender-mindedness (or sympathy). Considering the effects of one's orientation towards others, agreeableness has been shown to be negatively related to quarrelsomeness (Moskowitz, 2010) and antisocial behavior (Lynam, Leukefeld, & Clayton, 2003), and positively related to marital satisfaction (Sullivan, 1997). Specifically related to connection and involvement in the larger community, agreeableness has been shown to be related to political participation (Kanacri, 2012) and a sense of community on college campuses (Lounsbury, Loveland, & Gibson, 2003).

Especially in at-risk (i.e., selective and indicated) populations, it is apparent that an individual's attitude toward reward-seeking behavior (for the self) is of key importance in determining outcomes. Specifically, individuals

will often seek rewards (e.g., sex, intoxication from substances, infidelity, theft of valuables) without considering the effects of their behavior on others. Thus, one's orientation towards seeking rewards for the self seems to be a critical determinant of whether one seeks short-term and often short-sighted rewards or whether one has a more long-term orientation towards seeking the rewards conferred by being connected to one's self and others.

This reward orientation seems to be captured by the dimension of impulsivity. Impulsivity contains at least three dimensions. These represent behavioral-based impulsiveness (where one acts immediately without forethought), cognitively-based impulsiveness (where the consequences of actions are not considered prior to behavior), and an inability to be able to follow through with goal directed behavior (or perseverance; Patton, Stanford, & Barratt, 1995; Whiteside & Lynam, 2001).

Current estimates from a representative sample of the United States suggest that 17% of adults have a high level of impulsivity, in which impulsivity is often related to psychopathology (Chamorro, Bernardi, Potenza, Grant, Marsh, Wang, & Blanco, 2012). Not surprisingly, there is evidence that impulsivity is related to high-risk sexual behavior (e.g., Cortez, Boer, & Baltieri, 2011), aggressive driving (Constantinou, Panayiotou, Konstantinou, Loutsiou-Ladd, & Kapardis, 2011), gambling (e.g., Lee, Storr, Ialongo, & Martins, 2011), substance use and severity of substance use problems (e.g., Dvorak, Simons, & Wray, 2011), and anti-social behavior more generally (Neumann, Barker, Koot, & Maughan, 2010). Thus, these findings tend to confirm that those who are impulsive tend to be concerned with seeking personal rewards without much regard for the effects of their behavior on others. Examining the malleability of impulsiveness, a sample followed for eight years in a naturalistic study of attendees of Alcoholics Anonymous suggested that those who had decreases in impulsivity over time exhibited higher levels of coping and social support (Blonigen, Timko, Finney, Moos, & Moos, 2011). Similarly, when impulsivity was altered biochemically in violent offenders using selective serotonin re-uptake inhibitors, violent and impulsive behavior was reduced (Butler et al., 2010).

As can be seen in Table 1, we propose that connectedness represents the intersection of a high level of agreeableness and a low level of impulsivity. Likewise, someone who is not connected is represented by the intersection of a low level of agreeableness and a high level of impulsivity. When crossing these factors, the off diagonals represent isolation from the self and isolation from others. A similar model crossing agreeableness and sensation seeking found these dimensions predicted long- versus short-term relationship strategies (Cunningham, Ault, Bettler, Rowatt, et al., 1999).

Table 1. Proposed operationalization of connectedness.

	Orientation Towards Others (Agreeableness)	
Orientation Towards Self (Impulsivity)	Negative	Positive
Negative	Unconnected	Self-Isolation
Positive	Other Isolation	Connected

Present study

This model leads to several testable hypotheses about the CLFC program and the underlying mechanisms by which the program works.

1. Those participating in the CLFC program will exhibit greater movement towards connectedness relative to those not so exposed.
2. Connectedness will be related to relationship skills, where this relationship will be more pronounced among those participating in the CLFC program.

These hypotheses directly propose that we will observe change over time in the personality dimensions of agreeableness and impulsivity. Personality dimensions are often seen as being more enduring orientations toward the self and others; however, recent evidence has suggested that some traits are quite malleable and that they do indeed change over the life course (Moskowitz, 2010). Directly stated, we believe that the CLFC program will produce changes in these personality dimensions.

We report on an implementation of the CLFC Fatherhood Program (CLFCFP – an adaptation of the CLFC program) with adult fathers in prison reentry in a metropolitan area in the US Southeast. There was also a control group for this sample, where we could examine relative change between the CLFC and control groups across three observation points (pre-intervention, post-intervention, and three-month follow-up).

Method

Participants

The participants in our study were 246 men in reentry from prison, who represent a subset a sample reported on elsewhere (Shamblen, Kokoski, Collins, Strader, & McKiernan, 2017). Of the 246 men, 185 participated in the intervention. Of these 185, 159 (or 86%) provided data at post-test and 135 (or 73%) provided data at three month follow-up. The other 61 men participated in the control condition, where 49 (or 80%) provided data at post-test and 38 (or 62%) provided data at three month follow-up. The background characteristics of the men in both conditions were similar, so only the characteristics of the entire sample are reported. About one-fifth

(19%) of the men completed substance abuse treatment through a thera-peutic community program while in prison, while the balance of the sam-ple (59% + 22% = 81%) was referred for participation in the study through one of two residential substance abuse treatment providers outside of prison. Close to three-quarters (71%) of the men reported their race as White and one-quarter reported their race as Black (25%). There were very few Hispanics in the sample (1%). The men reported an average age of 33 at pretest. Slightly more than one quarter of the men reported being inde-pendently housed at pretest (28%) and about more than one third reported living with (at least some of) their children (41%) at pretest. Almost all men reported having a high school diploma or equivalent (95%) and slightly more than half were employed (51%) at pretest.

Measures

Participants completed a questionnaire at each of the three waves of the study that included a measure of agreeableness, impulsivity, and relation-ship skills. As personality measures are often lengthy, we sought reliable and valid short measures of agreeableness and impulsivity. We measured agreeableness with the abbreviated version of Goldberg's (1992) exhaustive list of attributes of the Big Five markers of personality. The eight item abbreviated version offered by Saucier (1994) has been shown to have acceptable internal consistency (coefficient alphas ranged between .75 and .88), as well as exhibiting simple structure using principal component ana-lysis. Coefficient alpha as measured in our pretest was .85.

Using an abbreviated version of the Barratt Impulsiveness Scale (Patton et al., 1995), we measured three constituent dimensions, namely: attentional impulsiveness (i.e., lack of attention and cognitive instability), motor impul-siveness (i.e., motor impulsiveness and perseverance), and non-planning impulsiveness (i.e., self-control and cognitive complexity). We used the top four highest loading items on each of these three principal components. These facets of impulsiveness can be combined to create an overall impul-siveness scale. A previous study reported that the overall impulsiveness scale score was internally consistent (coefficient alphas ranged between .79 and .83; Patton et al., 1995). The scale also exhibited discriminant validity, insofar as prison inmates were found to score significantly higher on impulsiveness than undergraduate students, psychiatric patients, and sub-stance abusers (Patton et al., 1995). The coefficient alpha yielded by our pretest was acceptable (α=.81).

As we mentioned previously, the construct of prosocial connectedness is defined as being the intersection of high agreeableness and low impulsiv-ity. We examined dispersion for agreeableness and impulsivity by

Table 2. Inter-quartile ranges for agreeableness and impulsivity.

			Impulsive Quartile 1 (1.08 to 2.07)	Quartile 2 (2.08 to 2.49)	Quartile 3 (2.50 to 2.82)	Quartile 4 (2.83 to 2.92)	Total (1.08 to 2.92)
Agreeable	Quartile 1	n	15	37	36	42	130
	(2.50 to 5.49)	%	2%	6%	6%	7%	21%
	Quartile 2	n	32	49	43	29	153
	(5.50 to 6.62)	%	5%	8%	7%	5%	25%
	Quartile 3	n	38	37	34	17	126
	(6.63 to 7.49)	%	6%	6%	5%	3%	20%
	Quartile 4	n	108	60	26	17	211
	(7.50 to 9.00)	%	17%	10%	4%	3%	34%
	Total	n	193	183	139	105	620
	(2.50 to 9.00)	%	31%	30%	22%	17%	100%

calculating the inter-quartile ranges (IQR) for both variables and we examined their intersection, as can be seen in Table 2. Whereas the IQR were smaller around the median, as would be expected for a variable with a relatively normal distribution, the variables were rather well dispersed. Also, not surprisingly the IQR were a bit wider at the socially undesirable ends of these scales.

Although somewhat arbitrary, we felt median splits served as a suitable method to operationally define prosocial connectedness in this preliminary study. Those who were at or above the median on agreeableness (6.63 on a 1 to 9 response scale) or impulsivity (2.50 on a 1 to 4 response scale) were considered as high on those personality dimensions, low otherwise. Thus, those at or above the median on agreeableness and those below the median on impulsivity were defined as connected.

Relationship skills were measured with 58 items inquiring about various relationship skills using a 1 (strongly disagree) to 5 (strongly agree) Likert scale. The relationship skill items, developed by McGuire and Associates, were adapted from scales by Olson and colleagues (Barnes & Olson, 2003; Olson, 2006; Olson, Fournier, & Druckman, 1986; Olson & Schaefer, 2000) to more closely align with the content and principles of CLFC. Scale scores were calculated by taking the average of responses to items constituting each scale. The specific relationship skills measured by these nine subscales are: communication skills, conflict resolution skills, intra-personal skills, emotional awareness, emotional expression, inter-personal skills, relationship management skills, relationship satisfaction, and relationship commitment. As reported elsewhere (McKiernan et al., 2013; Shamblen et al., 2013, 2017), the nine relationship skills are highly correlated. Coefficient alpha was extremely high for the nine relationship skills sub scales (pretest $\alpha=.91$), so we only report results from the overall relationship skills scale, as little additional information is conferred by the analysis of the individual scales.

Procedure

Random assignment to condition was implemented by first obtaining groups of approximately 20 (or another multiple of four) participants to serve in a cohort and acquiring information on their background characteristics (i.e., number of felonies, age, and race: African-American vs. otherwise). Mahalanobis distance metric was calculated for each participant, which represents the distance of each participant from the population centroid on these characteristics. The data were then sorted on their Mahalanobis distance scores and grouped into sequential groups of four. One of each group of four participants was randomly selected to participate in the control group. Thus, this technique represents stratified random assignment using Mahalanobis distance metric matching (Rubin, 1980). Simple random assignment was not used, as there was a limited pool of participants and the project was required to serve more than half of the participants with program services.

The survey used to collect data for this report was administered to all participants at pretest (i.e., prior to any intervention activities), post-test, and three-month follow-up (i.e., 3-6 months after post-test). Pre-test and post-test surveys were proctored by administrative (i.e., non-facilitator) staff using a set of standard survey protocols. All research activities were approved by the institutional review board of the first author. Informed consent was obtained from all participants before completing the pretest survey. All participants were informed that their participation in the surveys was voluntary and their decision to not complete the survey would not affect their participation in the program. Participants were also informed that their responses were confidential and would not be shared, except in aggregate form for reporting purposes. Intervention participants were offered a $50 gift card as an incentive to participating in each of the post-test and follow-up surveys and control participants were offered a $25 gift card as an incentive for the post-test survey and offered a $50 gift card as an incentive for participation in the follow-up survey. Follow-up surveys were either collected in person or through mailed surveys.

Analytic methods

In this study, multiple observations are nested within participants. Random intercept mixed model regressions, sometimes referred to hierarchical linear models, were used to analyze these data. This method, by way of contrast to repeated measures ANOVA, allows for all cases to be analyzed even if a participant does not have all three repeated measurements (Raudenbush & Bryk, 2002). Posing the intercept as the random effect adjusts model estimates for non-independence arising due to multiple observations being nested within the same individual. The model for the first hypothesis

pertaining to changes in connectedness, a dichotomous outcome, used a generalized linear mixed model assuming an outcome with a binomial distribution (and used a logit link function). The model for the second hypothesis assumed a normally distributed continuous outcome. The model for the first hypothesis was run using the lme4 library (Bates et al., 2015) and the model for the second hypothesis was performed using the nlme library (Pinheiro, Bates, DebRoy, & Sarkar, 2015) in the R foundation for statistical computing (Ihaka & Gentleman, 1996). The model for the first hypothesis regressed connectedness on contrasts representing intervention condition, time [linear (or straight line increase) and quadratic (or inverted u-shaped change representing unsustained program effects)], and the orthogonal interactions between intervention and time. The model for the second hypothesis regressed relationship skills on the same predictors as hypothesis one, but with the addition of connectedness as a predictor with all higher-way interactions. Differential attrition between the intervention and control groups can lead to groups with different background characteristics being followed over time. As discussed in more detail elsewhere (Shamblen et al., 2017), there was no evidence to suggest differential attrition between the intervention and control group, so no statistical adjustments (e.g., Heckman, 1976) were applied in our models to mitigate selectivity biases.

Results

As illustrated by Figure 1, between pretest, post-test, and follow-up, the percentage of connected individuals remained relatively constant in the control group (31%, 35%, and 35%, respectively), whereas the percentage of connected individuals in the CLFC group increased (29%, 43%, and 54%, respectively), which was statistically significant, $z = 2.52$, $p = .011$, $OR = 5.40$. All other tests of model coefficients in the hypothesis one analysis were not statistically significant ($p < .10$).

The model testing hypothesis two found a main effect for connectedness, where relationship skills were higher among those who were connected, $M = 3.29$ ($SD = .36$), relative to those who were not connected, $M = 2.82$ ($SD = .48$), $t(365) = 8.63$, $p < .001$, $r = .41$. Relationship skills were also found to increase between pretest, $M = 2.78$ ($SD = .51$) and post-test, $M = 3.15$ ($SD = .42$), and then plateau between post-test and follow-up, $M = 3.14$ ($SD = .44$), where the linear, $t(365) = 5.04$, $p < .001$, $r = .26$, and quadratic, $t(365) = 4.90$, $p < .001$, $r = .25$, main effects were statistically significant. As reported from these data elsewhere (Shamblen et al., 2017), a significant linear by intervention interaction suggested that relationship skills improved between pretest and post-test in the CLFC group, where they plateaued, which was larger than the increase observed for the control group,
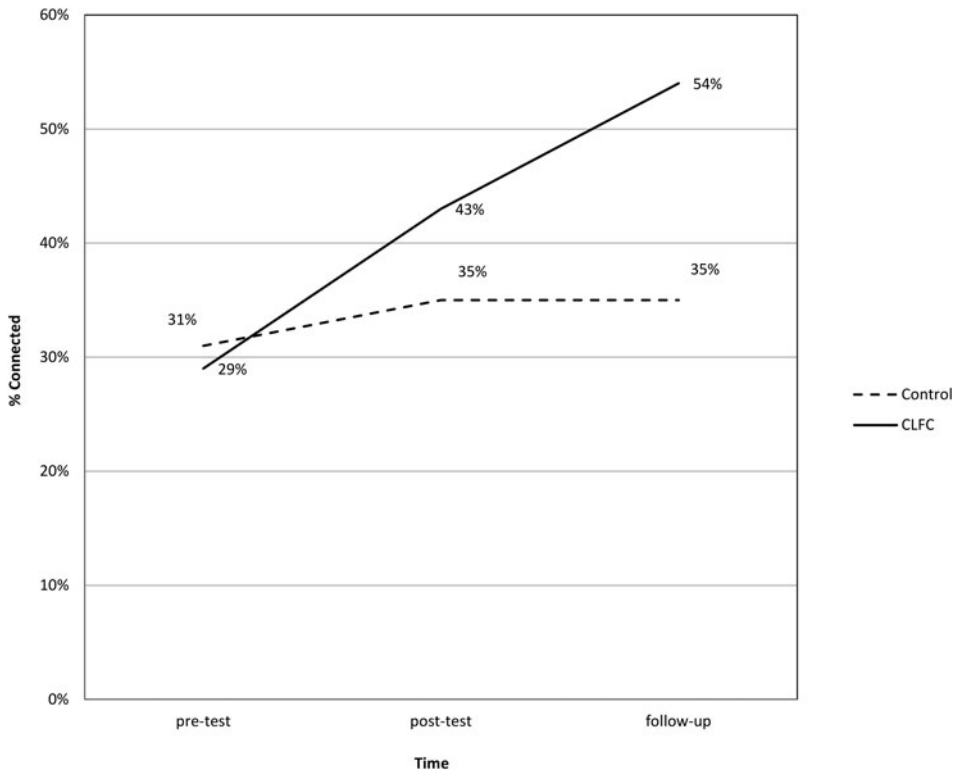
Figure 1. The effects of the CLFC program on connectedness, relative to controls.

$t(365)=2.33$, $p=.020$, $r=.12$. This relationship is depicted in Figure 2. The overall higher level of relationships skills in the CLFC group at later waves caused the intervention main effect to be statistically significant as well, $t(243)=1.99$, $p=.048$, $r=.13$. There was no interaction between intervention condition, connectedness, and time. Thus, there was no empirical evidence from this test to suggest connectedness produces receptiveness to curriculum content, leading to more favorable relationship skills. All other tests of model coefficients were not statistically significant ($p<.06$).

Discussion

Our study found evidence from a randomized controlled trial that CLFCFP increased the number of individuals who define themselves as being prosocially connected, relative to controls, which is one of the primary goals of the CLFCFP. When statistically controlling for CLFCFP effects in examining the relationship of connectedness to relationship skills, there was evidence to suggest that connectedness accounts for unique variance in describing relationship skills. In addition, the CLFCFP program accounts for unique variance in increasing relationship skills, relative to controls. There was no evidence to
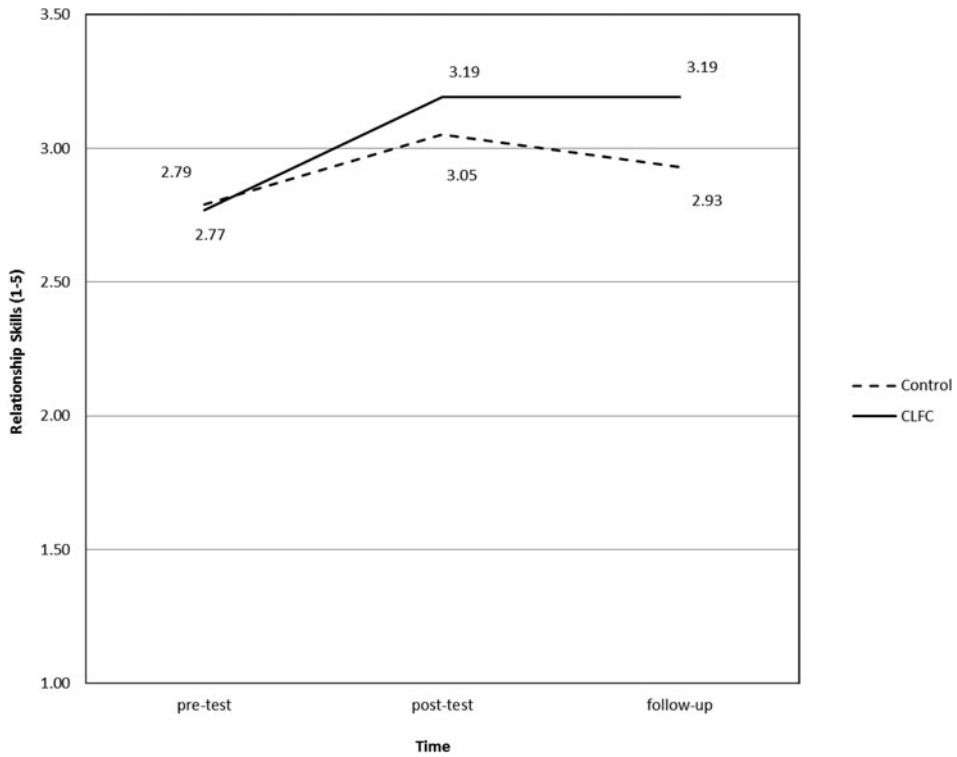
Figure 2. The effects of the CLFC program on relationship skills, relative to controls.

suggest a synergistic effect where relationship skills improved the most among those who were connected *and* exposed to the CLFC program.

These findings are consistent with prior studies finding higher levels of agreeableness (Lynam et al., 2003; Moskowitz, 2010; Sullivan, 1997) and lower levels of impulsivity (Blonigen et al., 2011; Butler et al., 2010; Constantinou et al., 2011; Neumann et al., 2010) being related to more positive relationship attributes, outcomes, and skills, as well as prior findings that the CLFCFP program has a positive impact on the relationship skills of fathers (McKiernan et al., 2013).

Limitations

It could be argued that this definition of prosocial connectedness superficially makes connectedness a dichotomy, as opposed to a two dimensional construct with two continuous dimensions of agreeableness and impulsivity. Moreover, when continuous variables are dichotomized, this often superficially reduces the variability (see MacCallum, Zhang, Preacher, & Rucker, 2002). Although these criticisms are true, it represents a conceptual conundrum when trying to represent connectedness as a single continuous score. If we standardize both scores and then take the centered product,

this score defines a continuum where higher scores represent high and low connectedness and lower scores represent self- and other-isolates. If we interpolate scale scores to the same metric and take the product (e.g., both zero to four), this then creates an interaction predictor that is not orthogonal to the main effects for agreeableness and impulsivity. As such, we opted for the conceptual clarity of a simple dichotomous indicator of being connected. Despite our somewhat crude measurement strategy that could have reduced variability, we nonetheless found relationships given reduced variability and presumably higher measurement error. Thus, this speaks to the robustness of the findings reported in this paper.

Implications for family therapy/practice

This study serves as a solid starting point for a theory of prosocial connectedness, suggesting that connectedness can be operationally defined as the intersection of impulsivity and agreeableness, and that connectedness is indeed related to developing relationship skills necessary for successful relationships. Programs like CLFCFP are successful in fostering a sense of connectedness, while also directly impacting relationship skills. Nonetheless, the data do not support the notion that connectedness allows participants to be open to curriculum content, which allows for them to internalize curriculum content. Instead, connectedness and relationship skills, while related, are independently impacted by the program.

Directions for future research

Future research must more carefully establish the construct validity of our operational definition of connectedness using a more sophisticated treatment of social interaction, such as social network analyses, social interaction diaries, and measures of social support in a larger and more diverse sample.

Author note

References

Bates, D., Maechler, M., Bolker, B., Walker, S., Christensen, R., Singmann, H., … Grothendieck, G. (2015). *lme4: linear mixed-effects models using Eigen and S4* (Version 1.1-8) [Software]. Retrieved from https://cran.r-project.org/web/packages/lme4.

Blonigen, D., Timko, C., Finney, J. W., Moos, B., & Moos, R. (2011). Alcoholics anonymous attendance, decreases in impulsivity and drinking and psychosocial outcomes over 16 years: Moderated-mediation from a developmental perspective. *Addiction*, *106*(12), 2167–2177. doi:10.1111/j.1360-0443.2011.03522.x

Blum, R. W., & Rinehart, P. M. (1997). *Reducing the risk: Connections that make a difference in the lives of youth*. Minneapolis, MN: University of Minnesota.

Booth, B. M., Russell, D. W., Soucek, S., & Laughlin, P. R. (1992). Social support and outcome of alcoholism treatment: An exploratory analysis. *American Journal of Drug and Alcohol Abuse*, *18*, 87–101.

Broome, K. M., Knight, K., Hiller, M. L., & Simpson, D. D. (1996). Drug treatment process indicators for probationers and prediction of recidivism. *Journal of Substance Abuse Treatment*, *13*(6), 487–491. doi:10.1016/S0740-5472(96)00097-9

Butler, T., Schofield, P. W., Greenberg, D., Allnutt, S. H., Indig, D., Carr, V., … Ellis, A. (2010). Reducing impulsivity in repeat violent offenders: An open label trial of a selective serotonin reuptake inhibitor. *Australian & New Zealand Journal of Psychiatry*, *44*(12), 1137–1143.

Chamorro, J., Bernardi, S., Potenza, M. N., Grant, J. E., Marsh, R., Wang, S., & Blanco, C. (2012). Impulsivity in the general population: A national study. *Journal of Psychiatric Research*, *46*(8), 994–1001. doi:10.1016/j.jpsychires.2012.04.023

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Constantinou, E., Panayiotou, G., Konstantinou, N., Loutsiou-Ladd, A., & Kapardis, A. (2011). Risky and aggressive driving in young adults: Personality matters. *Accident Analysis & Prevention*, *43*(4), 1323–1331. doi:10.1016/j.aap.2011.02.002

Cortez, F. C., Boer, D. P., & Baltieri, D. A. (2011). Psychosocial pathways to inconsistent condom use among male sex workers: Personality, drug misuse and criminality. *Sexual Health*, *8*(3), 390–398. doi:10.1071/SH10136

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO PI-R) and the NEO five-factor inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

Cunningham, M. R., Ault, L., Bettler, R., Rowatt, W. C., et al. (1999, June). *Four approaches to romantic relationships: A life-span trajectory analysis of partners, players, predators, & parasites. paper presented at the 1999 meeting of the international society for the study of personal relationships*. KY: University of Louisville.

Dempster, A. P., Laird, N., & Rubin, D. (1977). Maximum likelihood from incomplete data via the EM algorithm. *Journal of the Royal Statistical Society, Series B*, *39*(1), 1–38.

Dishion, T. J., & Tipsord, J. M. (2011). Peer contagion in child and adolescent social and emotional development. *Annual Review of Psychology*, *62*, 189–214.

Doll, B., & Lyon, M. A. (1998). Risk and resilience: Implications for the delivery of educational and mental health services in schools. *School Psychology Review*, *27*, 348–363.

Dvorak, R. D., Simons, J. S., & Wray, T. B. (2011). Alcohol use and problem severity: Associations with dual systems of self-control. *Journal of Studies on Alcohol and Drugs*, *72*(4), 678–684.

Field, T., Diego, M., & Sanders, C. (2001). Adolescent depression and risk factors. *Adolescence*, *36*, 491–498.

Goldberg, L. R. (1992). The development of markers for the big-five factor structure. *Psychological Assessment*, *4*(1), 2, 26–42. doi:10.1037/1040-3590.4.1.26

Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for

substance abuse prevention. *Psychological Bulletin*, *112*(1), 64–105. doi:10.1037//0033-2909.112.1.64

Heckman, J. J. (1976). The common structure of statistical models of truncation, sample selection and limited dependent variables and a simple estimator for such models. *Annals of Economic and Social Measurement*, *5*, 475–492.

Ihaka, R., & Gentleman, R. (1996). R: A language for data analysis and graphics. *Journal of Computational and Graphical Statistics*, *5*(3), 299–314. doi:10.1080/10618600.1996.10474713

Johnson, K., Bryant, D., Collins, D., Noe, T., Strader, T., & Berbaum, M. (1998). Preventing and reducing alcohol and other drug use among high-risk youths by increasing family resilience. *Social Work*, *43*(4), 297–308. doi:10.1093/sw/43.4.297

Johnson, K., Strader, T., Berbaum, M., Bryant, D., Bucholtz, G., Collins, D., & Noe, T. (1996). Reducing alcohol and other drug use by strengthening community, family, and youth resiliency: An evaluation of the creating lasting connections program. *Journal of Adolescent Research*, *11*(1), 36–67. doi:10.1177/0743554896111004

Kanacri, B. P. L. (2012). The mediational role of values in linking personality traits to civic engagement in Italian youth. *Journal of Prevention & Intervention in the Community*, *40*(1), 8–21.

Lee, G. P., Storr, C. L., Ialongo, N. S., & Martins, S. S. (2011). Compounded effect of early adolescence depressive symptoms and impulsivity on late adolescence gambling: A longitudinal study. *Journal of Adolescent Health*, *48*(2), 164–169. doi:10.1016/j.jadohealth.2010.06.002

Lounsbury, J., Loveland, J., & Gibson, L. (2003). An investigation of psychological sense of community in relation to big five personality traits. *Journal of Community Psychology*, *31*(5), 531–541. doi:10.1002/jcop.10065

Lynam, D. R., Leukefeld, C., & Clayton, R. R. (2003). The contribution of personality to the overlap between antisocial behavior and substance use/misuse. *Aggressive Behavior*, *29*(4), 316–331. doi:10.1002/ab.10073

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods*, *7*(1), 19–40. doi:10.1037//1082-989X.7.1.19

McKiernan, P., Shamblen, S., Collins, D., Strader, T., & Kokoski, C. (2013). Creating Lasting Family Connections: Reducing recidivism with community-based family strengthening model. *Criminal Justice Policy Review*, *24*(1), 94–122. doi:10.1177/0887403412447505

Moskowitz, D. S. (2010). Quarrelsomeness in daily life. *Journal of Personality*, *78*(1), 39–66.

Neumann, A., Barker, E. D., Koot, H. M., & Maughan, B. (2010). The role of contextual risk, impulsivity, and parental knowledge in the development of adolescent antisocial behavior. *Journal of Abnormal Psychology*, *119*(3), 534–545. doi:10.1037/a0019860

Olson, D. H. (2006). *Four ENRICH couple scales*. Minneapolis, MN: Life Innovations, Inc.

Olson, D. H., Fournier, D. G., & Druckman, J. M. (1986). *PREPARE, PREPARE-MC and ENRICH inventories* (2nd ed.). Minneapolis, MN: Life Innovations Inc.

Olson, D. H., & Schaefer, M. T. (2000). *PAIR Item booklet*. Minneapolis, MN: Life Innovations, Inc.

Patton, J. M., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the barratt impulsiveness scale. *Journal of Clinical Psychology*, *51*(6), 768–774. doi:10.1002/1097-4679(199511)51:6<768::AID-JCLP2270510607>3.0.CO;2-1

Pinheiro, J., Bates, D., DebRoy, S., & Sarkar, D. (2015). *nlme: linear and nonlinear mixed effects models* (Version 3.1-122) [Software]. Retrieved from https://cran.r-project.org/web/packages/nlme.

Raudenbush, S. W., & Bryk, A. (2002). *Hierarchical linear models* (2nd ed.). Thousand Oaks, CA: Sage.

Rubin, D. B. (1980). Bias reduction using Mahalanobis metric matching. *Biometrics*, *36*(2), 293–298. doi:10.2307/2529981

Saucier, G. (1994). Mini-markers: A brief version of Goldberg's unipolar big-five markers. *Journal of Personality Assessment*, *63*(3), 506–516.

Shamblen, S. R., Arnold, B. B., McKiernan, P., Collins, D. A., & Strader, T. N. (2013). Applying the creating lasting family connections marriage enhancement program to marriages affected by prison reentry. *Family Process*, *52*(3), 477–498. doi:10.1111/famp.12003

Shamblen, S. R., Kokoski, C., Collins, D. A., Strader, T. N., & McKiernan, P. (2017). Implementing Creating Lasting Family Connections with reentry fathers: A partial replication during a period of policy change. *Journal of Offender Rehabilitation*, *56*(5), 295–307.

Strader, T. N., Collins, D. A., & Noe, T. (2000). *Building healthy individuals, families, and communities: Creating lasting connections*. New York: Kluwer Academic/Plenum.

Sullivan, K. T. (1997). *Contributions of personality and behavior to change in marital satisfaction. Dissertation Abstracts International: Section B: The Sciences and Engineering*, *58*(6-B), 3328.

Whiteside, S. P., & Lynam, D. R. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences*, *30*(4), 669–689. doi:10.1016/S0191-8869(00)00064-7

Wright, B. A., & Lopez, S. J. (2002). Widening the diagnostic focus: A case for including human strengths and environmental resources. In C. R. Snyder and Shane J. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 26–44). Oxford, England: Oxford University Press.