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## The effects of the ARC organizational intervention on caseworker turnover, climate, and culture in children's service systems<sup>☆</sup>

Charles Glisson<sup>\*</sup>, Denzel Dukes, Philip Green

*Children's Mental Health Services Research Center, The University of Tennessee,  
128 Henson Hall, Knoxville, TN 37996-3332, USA*

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### Abstract

**Objective:** This study examines the effects of the Availability, Responsiveness, and Continuity (ARC) organizational intervention strategy on caseworker turnover, climate, and culture in a child welfare and juvenile justice system.

**Method:** Using a pre-post, randomized blocks, true experimental design, 10 urban and 16 rural case management teams were randomly assigned to either the ARC organizational intervention condition or to a control condition. The culture and climate of each case management team were assessed at baseline and again after the one-year organizational intervention was completed. In addition, caseworker turnover was assessed by identifying caseworkers on the sampled teams who quit their jobs during the year.

**Results:** Hierarchical Linear Models (HLM) analyses indicate that the ARC organizational intervention reduced the probability of caseworker turnover by two-thirds and improved organizational climate by reducing role conflict, role overload, emotional exhaustion, and depersonalization in both urban and rural case management teams.

**Conclusions:** Organizational intervention strategies can be used to reduce staff turnover and improve organizational climates in urban and rural child welfare and juvenile justice systems. This is important because child welfare and juvenile justice systems in the U.S.A. are plagued by high turnover rates, and there is evidence that high staff turnover and poor organizational climates negatively affect service quality and outcomes in these systems.

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<sup>\*</sup> Corresponding author.

## Introduction

Child welfare and juvenile justice systems in the U.S.A. serve some 3 million children each year, and a large portion of these children face serious emotional or behavioral problems that can follow them into adulthood (Burns, Phillips, Wagner, Barth, Kolko, Campbell, & Landsverk, 2004; Hazen, Hough, Landsverk, & Wood, 2004; MacKinnon-Lewis, Kaufman, & Frabutt, 2002; US Department of Health and Human Services, 2003, 2005). The high risk of chronic behavioral and emotional problems faced by these children and their families underscores the need for timely and appropriate care, but many child welfare and juvenile justice systems provide ineffective and inefficient care (Burns et al., 2004; Garbarino, 1999; Lindsey, 1994; MacKinnon-Lewis et al., 2002; US Department of Health and Human Services, 2004). Although there are several factors that contribute to inadequate care in child welfare and juvenile justice systems, there is evidence that these deficits in care are in part a function of the poor work environments and high rates of caseworker turnover that characterize many of these systems (Glisson, submitted; Glisson & Hemmelgarn, 1998; Glisson & James, 2002; US Government Accountability Office, 2003). These preliminary studies suggest that child welfare and juvenile justice work is similar to other types of high stress work in requiring a stable workforce and positive work environment for optimal performance (Edmondson, Bohmer, & Pisano, 2001; Huy, 2002).

Previous studies of child welfare and juvenile justice systems indicate that work environment characteristics such as culture and climate affect employee turnover, service provider attitudes toward their work, service quality, and service outcomes. For example, members of case management teams with more positive organizational cultures and climates have better work attitudes, are less likely to quit their jobs, deliver higher quality services, and produce more effective outcomes for children (Glisson, submitted; Glisson & Hemmelgarn, 1998; Glisson & James, 2002). A recent study of child welfare systems by the US Government Accountability Office (2003) concluded that increased workforce stability and positive organizational climates are critical to improving services in those systems. Moreover, a number of writers argue that the culture and climate of mental health and social service organizations are important to service outcomes because they affect whether the best practices and most innovative service protocols are adopted, how they are implemented, and whether they are sustained and effective (Glisson, 2002; Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Hohmann & Shear, 2002; Jensen, 2003; Schoenwald & Hoagwood, 2001).

For these reasons, a previous study published in *Child Abuse & Neglect* that documented the effects of work environment characteristics on service quality and outcomes in child welfare and juvenile justice systems concluded that future efforts to improve children's service systems should focus on creating positive organizational climates (Glisson & Hemmelgarn, 1998). However, little is known about effective methods for developing positive organizational climates within child welfare and juvenile justice systems. This is because organizational intervention strategies that have been used to improve work environments and performance in other types of organizations are rarely used in children's service systems (US Government Accountability Office, 2003). Moreover, almost no studies of organizational intervention strategies have been conducted in child welfare and juvenile justice systems, and there are no randomized controlled studies that test whether organizational intervention strategies can improve work environments and reduce caseworker turnover in these systems.

The study described here is the first to use a true experimental design to assess the impact of organizational intervention strategies on caseworker turnover, culture, and climate in a children's service system. The intervention strategies were selected and adapted for children's service organizations from

a broad range of organizational and community development literatures (Glisson, 2002; Glisson & Schoenwald, 2005). The sections that follow (1) describe work environment characteristics of child welfare and juvenile justice systems, (2) examine the roles played by organizational culture and climate in those work environments, (3) describe the Availability, Responsiveness and Continuity (ARC) organizational intervention model that was designed to improve the work environments of children's service systems, and (4) present the results of a study that tested the effect of the ARC intervention model in a child welfare and juvenile justice system.

### *Work environment characteristics of child welfare and juvenile justice systems*

In some states, child welfare and juvenile justice services are provided by two distinct systems and in others, such as the southeastern state in this study, child welfare and juvenile justice services are provided by one system. The child welfare and juvenile justice system studied here is divided into four urban and eight rural regions. Each of the four urban regions includes one urban county and each of the eight rural regions includes multiple rural counties. Regional directors administer each of the 12 urban and rural regions. The case management teams in each region are responsible for the care of children referred for abuse, neglect, status offenses, or delinquency. The case management teams assess the children and families, develop case management plans, refer the children and families for needed mental health and social services, identify children who need residential care, place children in the most appropriate residential setting, and monitor the children and families' progress.

The nature of the caseworkers' responsibilities, the seriousness of the behavioral and emotional problems experienced by the children and families they serve, and the demands of judges, attorneys, advocates, and others make child welfare and juvenile justice work stressful, indeterminate, and complex. These work environment characteristics explain why previous studies of child welfare and juvenile justice systems found that indicators of organizational climate such as role overload, role conflict, emotional exhaustion, and depersonalization affected case managers' work attitudes, the quality of care they provide, and service outcomes (Glisson, submitted; Glisson & Durick, 1988; Glisson & Hemmelgarn, 1998; Glisson & James, 2002).

These work environment characteristics also help to explain why many child welfare and juvenile justice systems develop defensive cultures that erect barriers to innovation and resist new service technologies that could potentially improve the quality and outcomes of services. These defensive cultures require excessive documentation, overly restrictive supervisory approval, and rigid conformity to procedural specifications as protection against public criticism, administrative sanctions, and litigation. Such cultures promote reactivity rather than responsiveness to serving children because caseworkers in defensive cultures create strategies to avoid assuming responsibility for children and families with the most serious problems out of fear that bureaucratic or legal sanctions will result if examples of failed services become public (Glisson & James, 1992; Nugent & Glisson, 1999). As a result, constructive organizational cultures that emphasize performance, support, and innovation are difficult to develop and caseworkers in many child welfare and juvenile justice systems follow well-worn and familiar organizational paths of behavior regardless of the implications for service quality or outcomes (Martin, Peters, & Glisson, 1998).

### *The differences between culture and climate*

The climates of work organizations have been studied since the 1950s and organizational cultures have been studied since the 1970s. But it is only within the last decade that both culture and climate have

been addressed simultaneously in the same article or text (Schneider, 1990). This is important because some writers use the two terms interchangeably (e.g., Schneider, 2000), some writers argue that culture and climate overlap or that one encompasses the other (e.g., Denison, 1996), and others argue they are distinct (e.g., Schein, 2000). Moreover, most of the articles that address culture and climate simultaneously offer only theoretical discussions of the concepts or qualitative case studies that provide no empirical evidence that the concepts are either interchangeable, overlapping, or distinctive (Michela & Burke, 2000; Schneider, Gunnarson, & Niles-Jolly, 1994; Tesluk, Farr, & Klein, 1997; Virtanen, 2000).

An extensive content analysis of the organizational literature on culture and climate identified core concepts for culture and climate which highlight the differences between the two constructs (Verbeke, Volgering, & Hessels, 1998). Using these concepts, climate is defined as the psychological impact of the work environment on the individual worker (e.g., emotional exhaustion, role overload) and culture is described as the organization's behavioral expectations of its employees and the way things are done in the organization (e.g., support, conformity). An empirical study of both culture and climate in a child welfare and juvenile justice system confirmed these differences and provided evidence that the constructs of culture and climate are empirically distinct (Glisson & James, 2002).

Climate can be defined at two levels. At the individual level, *psychological* climate is the individual's perception of the psychological impact of the work environment on his or her own well-being (James & James, 1989). If employees in the same work unit share the same perceptions, their perceptions can be aggregated to describe the *organizational* climate of that unit (Jones & James, 1979; Joyce & Slocum, 1984). However, organizational climate remains a property of the individuals because it represents the individuals' shared perceptions of how their work environment impacts them as individuals (James, 1982).

Culture is defined only at the organizational or work unit level and captures the behavioral expectations and norms that characterize the way work is done in an organization or work unit (Cooke & Szumal, 1993; Sorensen, 2002). The behavioral expectations (e.g., conformity, support, consensus) are the basis for socializing new coworkers in how they are to carry out their work. The values represented by those expectations and norms are also included in many definitions of culture. Writers sometimes describe culture as a "deeper" construct than climate when the definition includes the values and assumptions that drive those behavioral expectations (Stackman, Pinder, & Connor, 2000). References to the "deeper" aspects of culture parallel the "inner layer" described by Rousseau (1990) and the "invisible" part of culture described by Hofstede (1998).

However, there is evidence that culture is expressed and transmitted among employees more through observable behavioral expectations than through "deeper" values or assumptions (Ashkanasy, Broadfoot, & Falkus, 2000; Hofstede, 1998; Hofstede, Neuijen, Ohayv, & Sanders, 1990). That is, individuals in an organization comply with behavioral expectations without necessarily internalizing the values and assumptions that lie at the core of those expectations. This is because behavioral expectations may reflect the values and assumptions of organizational leaders rather than those of the rank and file who simply comply with the expectations. Behavioral norms within a work unit may also develop as a means of coping with the work conditions and realities that workers face on a day-to-day basis, independent of the values and assumptions of organizational leaders (Hemmelgarn, Glisson, & Dukes, 2001).

As observed in a study of children's emergency health services, expected behaviors in high stress human service environments have what Schein (1992) labeled "survival value" regardless of their contribution to care (Hemmelgarn et al., 2001). That is, work unit norms can include expected behaviors that workers depend on in their efforts to survive in a work environment that makes intense demands of their time, energy, and emotional resources. For example, "survival" norms might include service providers adopting

rigid and authoritarian approaches to interacting with clients. Ironically, there is evidence that these types of normative-based survival mechanisms (e.g., rigidity) could be self-defeating because they may actually *increase* the negative psychological impact of a work environment on individual service providers (e.g., emotional exhaustion) in high stress work environments (Glisson & James, 2002; Hemmelgarn et al., 2001).

#### *The work environments of case management teams*

Individual work units such as case management teams can develop distinctive work environments within the larger organization because work environments develop as a function of the social contexts within which members interact on a day-to-day basis (Hofstede, 1998; Stackman et al., 2000). Distinct work environments for individual work units emerge when the organization is large and the units work independently under separate supervisors in different geographical locations (Trice & Beyer, 1993). These characteristics apply to the case management teams in the child welfare and juvenile justice system studied here and social interactions within these teams are the basis for the individuals' interpretations of the meaning and impact of their work environment (Rentsch, 1990).

The cultures and climates of case management teams are important to service effectiveness because they define characteristics of the social context in which the service is provided. The social context model guiding the present study specifies that climate mediates the impact of organizational culture on work performance (Glisson, 2002). As specified by this model, the performance of a work team is affected by the impact of the team's work norms and expectations on the individual team members' perceptions of role conflict, role overload, depersonalization, and emotional exhaustion.

#### *Using organizational interventions to improve work environments*

Almost no organizational intervention research has been conducted in child welfare and juvenile justice organizations, but there is empirical evidence from a variety of other types of organizations that organizational interventions can build work environments that make organizations more effective (Burke, 1993). A meta-analysis of 126 studies by Neuman, Edwards, and Raju (1989) and a meta-analysis of 98 studies by Guzzo, Jette, and Katzell (1985) concluded that organizational interventions can improve work attitudes and performance. A meta-analysis of 52 additional studies by Robertson, Roberts, and Porras (1993) found that organizational interventions that target three organizational dimensions (i.e., social, technical, and strategic) are the most effective. But they also found that among interventions that target a single dimension, those that target the social dimension (e.g., culture and climate) are more effective than those that only target either the technical or strategic dimension.

Affirming the value of targeting multiple dimensions, Worren, Ruddle, and Moore (1999) argued that traditional development models that focus only on work relationships are less effective than broader systems-based models. Systems interventions can introduce new strategies to guide the organization's interactions with its external environment, implement innovative technologies, and change specific work protocols. Most recent intervention models take this broader systems perspective (Woodman, 1989). That is, they focus on the technology and strategies used by the organization as well as facilitate positive social contexts and work relationships (Farias & Johnson, 2000).

Both traditional organizational development models and more recent systems change models acknowledge the central role played by social context in the success of technical and strategic change efforts.

Studies in a variety of organizations confirm the importance of an organization's social context in implementing state-of-the-art technologies and forming strategic responses to evolving or turbulent external environments. For example, hospitals with "psychologically safe" climates were more likely to implement new cardiac surgical technologies successfully (Edmondson et al., 2001). Successful strategic and technical changes in an information technology firm were linked to organizational social contexts characterized by support and trust (Huy, 2002). And a study of a children's residential treatment facility identified social context factors that presented barriers to strategic change and technological innovation aimed at improving services (Kahn, Cross, & Parker, 2003).

Studies also indicate that organizational interventions must focus on small groups or teams within an organization to be successful. This is because resistance to change and innovation in an organization forms at small group levels. It is within these work groups that the social processing of information, social interactions devoted to understanding the work, the development of shared schema, and other interpretative processes occur (George & Jones, 2001). For this reason, Weick and Quinn (1999) argued that change at the organizational level is rooted in group-level change. Similarly, general systems theories of organizational performance explain that group-level changes affect the entire organizational system within which the groups are embedded (Katz & Kahn, 1978; Whelan-Berry, Gordon, & Hinings, 2003).

The present study tests an organizational intervention with case management teams so it is important that there is evidence that the cultures and climates of such work teams vary within larger organizational systems and constitute appropriate targets for change efforts (Edmondson et al., 2001; Glisson & James, 2002; Weick & Quinn, 1999; Wilderom, Glunk, & Maslowski, 2000). Research in a variety of organizations confirms that interventions with work teams can improve performance relative to other work teams that function within the same organization (Porras & Robertson, 1992).

### *The theoretical foundations of the ARC organizational intervention model*

The ARC organizational intervention model depends on general systems theory (Katz & Kahn, 1978), diffusion of innovation theory (Rogers, 1995), sociotechnical systems theory (Rousseau, 1977), traditional models of organizational development (Burke, 1993; Porras & Robertson, 1992; Tichy, 1983), and interorganizational domain development (Trist, 1985). General systems theories describe organizations as strategically linking inputs from their external environments to technical processes to create outputs in the form of products or services (Katz & Kahn, 1978). Those outputs complete a cycle of exchange between the organization and its external environment. Although *technical* and *strategic* processes produce and distribute these outputs, general systems, sociotechnical, diffusion of innovation, and change management models argue that the effectiveness of technical and strategic processes depends on the *social* context in which the technologies are embedded and the strategies are enacted (Robertson et al., 1993; Rogers, 1995; Rousseau, 1977; Trist, 1985; Worren et al., 1999). The important role played by social context in technical and strategic activities is supported by social cognitive theory that describes the effect of social context on cognitive processes that affect both attitudes and behavior (Bandura, 1986). This effect explains why interventions designed to improve an organization's social context (e.g., decrease levels of depersonalization, role conflicts, role overload, and emotional exhaustion) can be used to support changes in core technical and strategic processes (Burke, 1993; Michela & Burke, 2000; Porras & Robertson, 1992).

### *The role of change agents*

The ARC intervention was implemented in the present study by doctoral and masters-level social workers, psychologists, and counselors trained as change agents by the University of Tennessee Children's Mental Health Services Research Center. ARC change agents are trained to work with service teams, administrators, key opinion leaders, and community stakeholders to remove service barriers created by bureaucratic red tape, turf wars, misinformation, ineffective procedures, poor communication, and mistrust (Beer, 1980; Bennis, 1966; Blake, Shepard, & Mouton, 1964; Callister & Wall, 2001; French & Bell, 1984; Porras & Robertson, 1992; Robey & Altman, 1982; Rogers, 1995). Change agents help organizations overcome such barriers to adopt new technologies (e.g., best practices), develop new service strategies, and design successful work processes (Burke, 1993; French & Bell, 1984; Pasmore, Francis, Haldeman, & Shani, 1982; Porras & Robertson, 1992; Steel & Shane, 1986; Walton, 1987).

### *Guiding principles and components of the ARC organizational intervention strategy*

ARC change efforts are guided by five principles that were adapted for children's service systems from Osborne and Gaebler's (1992) model of effective public service organizations. ARC's guiding principles describe effective service systems as (1) mission-driven—all actions and decisions contribute to the well-being of children, (2) results-oriented—measure individual, team, and organizational performance by improvements in the well-being of children, (3) improvement-directed—continually seek to be more effective in improving the well-being of children, (4) relationship-centered—focus on the network of relationships (e.g., families, schools, community) that are most important to children's well-being, and (5) participation-based—include service providers and stakeholders in forming policies, designing strategies, and adopting technologies for improving the well-being of children. ARC change agents apply these principles in implementing the following intervention components.

*Intervention components.* The organizational and inter-organizational domain literature concludes that multiple intervention components are needed to develop effective organizational responses to identified problems (Barraud-Didier & Guerrero, 2002; Burke, 1993; Guzzo et al., 1985; Neuman et al., 1989; Porras & Robertson, 1992; Robertson et al., 1993; Rogers, 1995; Trist, 1985; Worren et al., 1999). This is because multiple social, technical, and strategic factors affect the success of an organizational change effort and the relative importance of each factor in a specific effort or work group is difficult to predict *a priori* (Robertson et al., 1993; Worren et al., 1999). Selected on the basis of their demonstrated effectiveness in other types of organizations, the content of each of 12 components was adapted for the ARC model to include specific examples from social and mental health services. Two of the intervention components, organizational leadership and goal setting, were originally subsumed under the other ten components, but have since been identified as separate components. The intervention components are implemented in three stages (collaboration, participation, and innovation) over four phases (problem identification, direction setting, implementation, and stabilization) (Glisson & Schoenwald, 2005).

#### *Stage 1—Collaboration*

- (1) *Support the organizational leadership's* use of the ARC model and principles to communicate a clear vision for change, set high performance standards, and create a healthy climate for improving

effectiveness. The organizational leadership describes the ARC intervention process to staff, forms a participative structure to implement the intervention, and establishes rewards and incentives for meeting performance standards (Edmondson et al., 2001; Green, 1998; Gustafson, Sainfort, Eichler, Adams, Bisognano, & Steudel, 2003; Meyers, Sivakumar, & Nakata, 1999; Murphy & Southey, 2003; Young, 2000).

- (2) *Cultivate personal relationships* with administrators, service providers, opinion leaders, and stakeholders to provide the foundation for communication, sharing information, and solving identified problems (Rogers, 1995). Personal relationships are formed through personal communications, one-on-one meetings, and *quid pro quo* activities that focus on service issues and barriers of interest to the participants (Backer & Rogers, 1998; Ferlie, Gabbay, Fitzgerald, Locock, & Dopson, 2001).
- (3) *Access or develop networks* among administrators, service providers, and stake holders. Provide opportunities for idea exchange, access to experts, and collaboration (Goes & Park, 1997; Rogers, 1995). Innovation and change are influenced by social networks that affect perceptions, process information, and offer support (Edmondson et al., 2001; Ferlie et al., 2001).

#### *Stage 2—Participation*

- (4) *Build teamwork* within work units to facilitate participation, information sharing, and support. The emphasis is on helping work teams use their collective expertise to improve services, increase social support, and reduce the perceived risks associated with change (Baer & Frese, 2003; Dyer, 1977; Edmondson et al., 2001; Ensley & Pearce, 2001; Higgins & Routhieaux, 1999; Patten, 1981; Rentsch, 1990; Rentsch & Klimoski, 2001).
- (5) *Provide information and training* about the intervention model, state and federal policies, best practices, and data management strategies to support improvement efforts (Barraud-Didier & Guerrero, 2002; Green, 1998; Gustafson et al., 2003; Meyers et al., 1999; Pasmore et al., 1982; Rogers, 1995; Tasi, 2001). Information and training include demonstrating the relative advantage of an innovation, explaining ARC principles (e.g., improvement directed), offering opportunities to experiment, and reducing uncertainty associated with change (Dirkson, Ament, & Go, 1996; Ferlie et al., 2001; Meyer & Goes, 1988).
- (6) *Establish a feedback system* to provide performance information to work teams and management. Feedback about work team performance using valid outcome indicators is a key factor contributing to the successful adoption of new practices and other improvements by creating a “tension for change” (Burke, 1993; Green, 1998; Grimshaw et al., 2004; Merlani, Garnerin, Diby, Ferring, & Ricou, 2001; Meyer & Goes, 1988; Porras & Robertson, 1992; Scanlon, Darby, Rolph, & Doty, 2001).
- (7) *Implement participatory decision-making* within work teams to create support and provide the opportunity for input into problem-solving efforts that address the way services are delivered (e.g., referral procedures, risk assessment). Participatory decision-making is used in conflict resolution, goal setting, continuous quality improvement, teamwork and other intervention components (Bennis, 1966; McGregor, 1960; Meyers et al., 1999; Porras & Robertson, 1992; Terziowski, 2002; Yousef, 2000).
- (8) *Resolve conflicts* at the interpersonal, intra-, and inter-organizational levels to address differences in opinion and competing interests that limit the ability of work teams and management to improve services. Conflicts are addressed by information sharing, clarification of issues, prioritizing, promoting schema agreement, and mediation (Alper, Tjosvold, & Law, 2000; Caldwell & O’Reilly, 1982; Callister & Wall, 2001; Rentsch & Klimoski, 2001; Walton, 1987).

### Stage 3—Innovation

- (9) *Develop goal setting* procedures to define both short-term and long-term performance goals using feedback, participative decision-making, and other components. Identified goals should be difficult to reach and represent challenges for the teams and organization related to service improvement and innovation (Durham, Knight, & Locke, 1997; Gibson, 2001; Knight, Durham, & Locke, 2001; Sue-Chan & Ong, 2002; Weldon & Yun, 2000).
- (10) *Use continuous quality improvement* techniques for changing organizational policies and practices (e.g., referral procedures, assessment protocols) to support the work of frontline service providers. Recommendations for improvements originate from the teams using data-based procedures that identify barriers to care and monitor results of improvement initiatives (Berlowitz et al., 2003; Lemieux-Charles et al., 2002; Shortell, Bennett, & Byck, 1998; Shortell et al., 1995; Steel & Shane, 1986).
- (11) *Redesign job characteristics* to eliminate service barriers by revising job responsibilities (e.g., assessment, referral, monitoring) and broadening skills (e.g., use of standardized assessments). Job redesign requires that teams be given the opportunity to make suggestions about how their members approach their work and implement new skills (e.g., for assessment, referral, and monitoring) (French & Bell, 1984; Hackman & Oldham, 1980; Terziowski, 2002).
- (12) *Ensure self-regulation and stabilization* of change effort by providing information and training to facilitate the independent use of the previous components so that the innovations are maintained after the intervention period ends (Porras & Robertson, 1992; Rogers, 1995).

### Hypotheses

The study examined three hypotheses. First, it was hypothesized that the case management teams that participated in the ARC organizational intervention would have lower levels of turnover than the case management teams in the control group. Second, it was hypothesized that the case management teams that participated in the ARC organizational intervention would develop healthier climates (e.g., lower levels of depersonalization, emotional exhaustion, role conflict, and role overload) than the case management teams in the control group. Finally, it was hypothesized that the case management teams that participated in the ARC organizational intervention would develop more constructive cultures (e.g., more emphasis on support and motivation) and less defensive cultures (e.g., less emphasis on evasion and subservience) than case management teams in the control group.

### Methods

#### Sample

The sample includes 235 caseworkers from 26 case management teams that provide child welfare and juvenile justice services to two urban regions (one county per urban region) and two rural regions (a total of 25 counties) in one southeastern state. The average team size was 9 members each (ranging from 7 to 13 members). Ten case management teams in the sample served the two urban counties and 16 teams served the 23 rural counties. The study was approved by the University of Tennessee Human Subjects IRB and subjects provided informed consent prior to participating.

Table 1  
Descriptive statistics at baseline ( $n = 235$ ) and follow-up ( $n = 210$ )

|                    | Baseline |           |      | Follow-up |           |      |
|--------------------|----------|-----------|------|-----------|-----------|------|
|                    | <i>M</i> | <i>SD</i> | %    | <i>M</i>  | <i>SD</i> | %    |
| Turnover           |          |           | 50.2 |           |           | NA   |
| Female             |          |           | 78.8 |           |           | 78.8 |
| Minority           |          |           | 15.7 |           |           | 18.3 |
| Education          |          |           |      |           |           |      |
| Graduate degree    |          |           | 8.8  |           |           | 10.1 |
| Bachelors degree   |          |           | 79.6 |           |           | 80.6 |
| High school degree |          |           | 11.6 |           |           | 9.3  |
| Age                | 38.46    | 11.06     |      | 38.40     | 11.20     |      |

As shown in Table 1, the caseworkers in the baseline sample were 79% female, 16% minority (almost all minority members were African American), and had an average age of 38 years. Education levels included caseworker aides (no more than one per team) who had high school educations (11%), and caseworkers who had terminal bachelor degrees (80%) and terminal graduate degrees (9%). Reflecting the very high turnover rates that plague child welfare and juvenile justice systems nationwide (Cyphers, 2001), 50% of the 235 caseworkers who began the study at baseline quit their jobs during the 1-year follow-up period.

#### *Outcome measures of turnover, climate, and culture*

Demographic and organizational context data were collected from members of the case management teams at scheduled team meetings at baseline and follow-up. The instruments assessing culture and climate presented Likert scale response categories on questionnaires printed in an optical scan format that required approximately 45 minutes to complete. Baseline measures of culture and climate were collected before the ARC organizational intervention was implemented. Follow-up measures of culture and climate were collected from all team members at the end of the 1-year ARC intervention period. In addition, turnover data were collected from team leaders to identify caseworkers who quit their jobs during the 1-year ARC intervention.

*Culture.* The measures of organizational culture are included in the Organizational Culture Survey (OCU) that was used in a previous study to predict turnover, service quality, and work attitudes in child welfare and juvenile justice case management teams (Glisson & James, 2002). The OCU includes items created specifically for social service and mental health systems and items selected from other scales (e.g., Organizational Culture Inventory) that were reworded to measure cultural norms and expectations of social and mental health service systems using the “referent-shift” consensus model (Chan, 1998; Glisson & James, 2002). The scales were selected from the OCU for the present study on the basis of our preliminary studies of the cultures of these systems as described above.

*Constructive or instrumental cultures* promote positive, proactive behavior and encourage interactions that meet higher satisfaction needs (Cooke & Szumal, 2000). Constructive culture was measured by scales that assess *motivation* norms (e.g., “take on challenging cases”), *individual development* norms

(e.g., “develop full potential”), and *supportive* norms (e.g., “encourage others”). Alpha reliabilities at baseline and follow-up, respectively, were .82 and .86 for motivation, .85 and .86 for individualistic, and .86 and .89 for supportive norms. The reliabilities for the combined constructive culture scales were .93 and .95 at baseline and follow-up, respectively.

*Passive-defensive or resigned cultures* promote protective, reactive behavior and encourage interactions that meet lower security needs (Cooke & Szumal, 2000). Passive-defensive culture was measured by scales that assess *consensus* norms (e.g., “agree with everyone”), *conformity* norms (e.g., “accept the status quo”), and *subservient* norms (e.g., “follow rather than lead”). The alpha reliabilities at baseline and follow-up for these scales were .83 and .86 for consensus, .82 and .80 for conformity, and .78 and .75 for subservience. The reliabilities for the combined scales measuring passive-defensive culture were .92 and .93 at baseline and follow-up.

*Climate.* Climate was measured with scales from the Organizational Climate Survey (OCL) that have been widely used in social and mental health service systems for two decades and linked in earlier research to the quality and outcomes of children’s services (e.g., Glisson, submitted; Glisson & Durick, 1988; Glisson & Hemmelgarn, 1998; Glisson & James, 2002; Glisson & Martin, 1980). Positive climates are low in *depersonalization* (e.g., “I worry that this job is hardening me”), *emotional exhaustion* (e.g., “I feel used up”), *role conflict* (e.g., “I do things that are against my better judgment”), and *role overload* (e.g., “The amount of work I have to do keeps me from doing a good job”). Alpha reliabilities with this sample at baseline and follow-up, respectively, were .59 and .69 for depersonalization, .92 and .92 for emotional exhaustion, .86 and .87 for role conflict, and .85 and .87 for role overload. In addition, reliabilities of the combined scales were .91 and .93 at baseline and follow-up, respectively.

*Turnover.* Turnover was measured over the one year intervention period for the caseworkers who were sampled for the baseline measures at the beginning of the intervention. Regional directors, case management team leaders, and members of the case management teams were asked to identify who among the original baseline sample quit their jobs during the one year period. As shown in Table 1, 50% of the baseline sample quit their jobs during that year. This type of high turnover is endemic to child welfare systems nationwide (Cyphers, 2001; US Government Accountability Office, 2003).

### *Experimental design*

The experimental design randomly assigned case management teams within each location (urban or rural) to either the ARC intervention or control condition. This resulted in a fully crossed,  $2 \times 2$ , randomized blocks, true experimental design. The two urban regions were served by 10 teams and the two rural regions were served by 16 teams. Five urban teams and eight rural teams were assigned to the ARC intervention condition, and five urban teams and eight rural teams were assigned to the control condition.

### *The ARC organizational intervention*

The ARC principles, components, and new assessment and monitoring technology described below were delivered to the teams by the change agents over a 1-year period. Five ARC change agents worked with the 13 teams (5 urban and 8 rural) that were randomly assigned to the ARC intervention condition.

Each ARC change agent worked with two or three teams. The change agents held masters or doctoral degrees in social work, psychology, or a related field, and had an average of 18 years of post-graduate experience, including staff development.

Prior to implementing the ARC intervention, the change agents were trained in the ARC organizational intervention model by the UT Children's Mental Health Services Research Center 20 hours per week for 6 months. Training focused on the theory underlying the ARC model, specific intervention components (e.g., teamwork, continuous quality improvement), the characteristics of the focal organization, maintaining consistency in the delivery of the intervention's content, and the use of manual-based instruction to conduct the intervention. Training also included instruction in the use of the Shortform Assessment for Children (SAC), a standardized scale for assessing and monitoring children that was developed by the UT Children's Mental Health Service Research Center specifically for child welfare and juvenile justice systems (Glisson, Hemmelgarn, & Post, 2002; Hemmelgarn, Glisson, & Sharp, 2003; Tyson & Glisson, 2005).

The ARC organizational intervention was implemented for 1 year by the change agents in 2-hour weekly case management team meetings in 5–6 week blocks. This intervention structure was followed for several reasons. First, it was not practical to train the change agents in the entire 1-year intervention and then expect them to deliver it with fidelity over that length of time. The block format permitted the change agents to be in the field 5 to 6 weeks, and then return to the Research Center for a week to receive additional training in preparation for their implementation of the next block. Second, the structure permitted the change agents to discuss their experiences in delivering their most recently completed block and to learn from the experiences of other change agents who had just completed the same block. Third, the intervention structure provided the Research Center the opportunity, within the ARC framework and intervention work plan, to respond to issues reported back from the field by the change agents. Fourth, this structure maintained consistency in change agent activities following the manual-based intervention, as well as a similar pace in implementing the intervention material through the 1-year period.

In addition, four workshops, each 1 or 2 full days in length, were held during the 1-year intervention with the regional directors and leaders of the teams that participated in the ARC intervention. The purpose of these sessions was to build a sense of shared purpose across these geographically dispersed personnel and to build support for the ARC intervention. Further, quarterly meetings were held with the regional directors to review the progress of the ARC intervention, discuss the recommendations provided by the ARC intervention teams for administrative and policy changes, and to respond to concerns that the regional directors had about the intervention. Finally, meetings were held with key opinion leaders and stakeholders in the community (e.g., juvenile and family court judges and staff, school officials, other service providers) to describe the efforts of the ARC intervention, share information and data about barriers to service, and discuss mental health and other service needs.

The ARC curriculum permitted the change agents to employ a consistent emphasis on the five principles discussed above in facilitating the work of the case management teams, while employing the ARC components as tools to improve the work environment and reduce turnover. Within this framework, the ARC intervention model encourages the introduction of additional content that is individualized to the specific needs of the organization. For example, the caseworkers in this study lacked a consistent, shared conceptual model to guide their assessment and monitoring of the children in their caseloads. Each caseworker used his or her own implicit theories, which contributed to ineffective team discussions and inefficient case management of clients' behavioral and mental health issues. Therefore, the ARC change agents introduced the concepts of internalizing and externalizing behavior to the case management teams

and taught caseworkers to use a standardized instrument (Shortform Assessment for Children, or SAC) that was developed for assessing and monitoring the mental health and well-being of children served by child welfare and juvenile justice systems (Glisson et al., 2002; Hemmelgarn et al., 2003; Tyson & Glisson, 2005).

The content and fundamental structure for the training was guided by the *ARC Training Manual*, which was provided to each caseworker participating in the ARC intervention. Reflecting the training, the manual is divided into blocks to coincide with the structure of the delivery of the material described previously. In addition, the ARC change agents followed the *ARC Facilitator's Guide* which described in detail the content to be addressed each week, the materials needed, how activities were to be accomplished, specific learning points, objectives to be achieved through the activities, and the time required for each activity.

### Data analyses

Hierarchical Linear Models (HLM) analyses using a two-level, random intercepts model were conducted to estimate the cross-level effects of the ARC intervention on turnover, climate, and culture (Hedeker, Gibbons, & Flay, 1994; Raudenbush & Bryk, 2002). Specifically, the HLM analyses examined the differences between turnover, climate, and culture in case management teams that received the ARC organizational intervention and those that did not, while controlling for the random effects associated with team membership and the effects of individual-level covariates (i.e., age, education, gender, minority status).

HLM analyses were conducted using maximum marginal likelihood estimation for mixed effects regression models using *HLM 5.05* software (Raudenbush, Bryk, Cheong, & Congdon, 2000). The analysis of caseworker turnover as a binary outcome (i.e., the caseworker quit or did not quit) used a binomial sampling model with a Bernoulli distribution and logit link (Raudenbush & Bryk, 2002, pp. 294–295). All caseworkers who were members of the case management teams at baseline ( $n = 235$ ) were included in the analysis of turnover.

Two models, an “unconditional” model and a “conditional” model, were examined for each outcome criterion (Hofmann, Griffin, & Gavin, 2000; Raudenbush & Bryk, 2002). Only the team random effects and baseline measure of the outcome criterion were included in the unconditional model (Hedeker et al., 1994; Raudenbush & Bryk, 2002, p. 106). This model estimated the outcome variance attributable to teams without other covariates in the model.

Individual-level covariates (i.e., age, education, gender, and minority status) and the two, team-level factors (ARC intervention and location) were included in the conditional model. The covariates and baseline measures were grand mean centered to control for initial differences between teams in these variables prior to the intervention (Raudenbush & Bryk, 2002, p. 142). Therefore, the intercepts reflected team means of the outcome variables that were adjusted for initial team differences on the covariate and baseline measures included in the model. The HLM analyses then provided estimates of the effects of the ARC intervention and team location (urban vs. rural) after controlling for the covariates in the model, the baseline criterion measures, and team random effects (Hofmann et al., 2000; Raudenbush & Bryk, 2002).

Two sets of HLM analyses of climate and culture were conducted, each with a somewhat different sample. The first set of HLM analyses were conducted with the caseworkers who were members of the case management teams in the intervention and control conditions for the entire one-year intervention period ( $n = 118$ ). The second set of HLM analyses were conducted with all of the caseworkers ( $n = 210$ ).

Table 2  
HLM Analysis of turnover using Bernoulli distribution with logit link function ( $n = 235$ , teams = 26)

| Model                                       | Variable  | <i>b</i> | <i>SE</i> | $\exp b$ | <i>t</i> | <i>p</i> |
|---|-----------|----------|-----------|----------|----------|----------|
| Unconditional                               | Constant  | −.036    | .245      | .920     | −.147    | .884     |
| Team variance = 1.018                       |           |          |           |          |          |          |
| Conditional                                 | Constant  | .889     | .391      | 7.745    | 2.276    | .032     |
| Level two                                   | ARC       | −1.319   | .446      | .048     | −2.955   | .008     |
|   | Urban     | −.450    | .502      | .355     | −.897    | .380     |
| Level one                                   | Age       | −.021    | .014      | .953     | −1.468   | .155     |
|   | Education | .014     | .178      | 1.033    | .078     | .939     |
|   | Female    | .156     | .383      | 1.432    | .407     | .687     |
|   | Minority  | −.122    | .493      | .755     | −.248    | .806     |
| Team variance = .810                        |           |          |           |          |          |          |
| Proportion of team variance explained = .20 |           |          |           |          |          |          |

who were working on the case management teams at follow-up, whether or not they were members of the sampled teams at baseline. This is an important distinction because the first set of analyses includes subjects who were present for the entire study and the second set of analyses includes subjects who were members of the sampled teams at the end of the study, some of whom joined the sampled teams after the intervention began.

## Results

### *HLM analysis of turnover as an outcome*

As mentioned previously, high employee turnover is endemic to child welfare and juvenile justice systems and 50% of the sample of caseworkers in the study quit their jobs within 1 year after the baseline measures were collected. The rates, however, were not equivalent for the intervention and the control teams. As hypothesized, the ARC intervention reduced turnover. Specifically, 65% of the caseworkers in the control condition quit their jobs versus 39% in the intervention condition in the 1-year follow-up period ( $p < .0001$ ). Although this zero-order effect was significant, HLM estimates of the impact of ARC on team turnover rates indicated an even larger main effect of ARC after controlling for team random effects, location, and individual level covariates such as age, education, and gender.

The HLM approach used to estimate turnover had to consider the binary nature of the turnover outcome criterion (each caseworker either did or did not quit). Therefore, the HLM analysis of turnover used a binomial sampling model based on the Bernoulli distribution and a logit link function with the log of the odds of turnover as the outcome variable (Raudenbush & Bryk, 2002, pp. 294–309). The log of the odds of turnover was predicted at the individual level (level one) with the individual's age, gender, minority status, and education. At the team level (level two), the analysis examined the effect of the two, fully crossed, team-level factors. As explained above, the two team-level factors, the ARC intervention (intervention or control), and the location of the team (urban or rural), comprised a  $2 \times 2$  factorial design.

As shown in Table 2, the estimated intercept ( $b_0$ ) in the unconditional HLM analysis of turnover that included only the random effects in the model is  $-.04$ . Because this HLM model includes only random

effects, this is the log of the odds of turnover for a typical or average team in the sample. The exponent of this  $\log(\exp b)$  is also shown in Table 2 and equals .92. This exponent is the odds ratio (i.e., the probability of quitting divided by the probability of not quitting) of turnover in a typical team. The odds ratio translates into an estimated probability ( $\varphi$ ) of turnover of .48 in a typical team, which is slightly lower than the overall proportion of caseworkers in the sample who quit (.50). This is a function of the difference between individual level and team level rates of turnover. It is also a function of the positively skewed probability of turnover with a mean (.50) that is slightly higher than the median team turnover rate (.48). A benefit of estimating the log-odds ratio ( $\eta$ ) instead of the probability ( $\varphi$ ) is that  $\eta$  is normally distributed while  $\varphi$  is positively skewed (Raudenbush & Bryk, 2002, pp. 297–298).

As shown in Table 2, the conditional model explains 20% of the team variance in turnover. The conditional model includes the caseworker's age, education, gender, and minority status as covariates in level one to control for the effects of these variables on turnover at the individual caseworker level. At level two, the model includes team level predictors of the team intercepts: the ARC intervention and team location. The coefficients representing the slopes of the relationships between the level-one predictors and turnover are fixed because the variance in the slope coefficients across teams was not significant. In addition, the level-one slope coefficients were not significant, indicating that the caseworker level covariates were not related significantly to turnover.

At level-two, turnover was significantly lower in the teams that received the ARC intervention than in the control teams. Moreover, the effect of the ARC intervention on turnover after adjusting for covariate and random effect differences across teams was larger than the zero-order effect of the ARC intervention on turnover described above. The exponent of the adjusted log-odds intercept indicates that the adjusted odds of turnover in the teams in the control group were 7.745 [ $\exp(.889) = 7.745$ ]. This represents an 8 to 1 chance that members of a typical team in the control group would quit their jobs, and an adjusted estimated probability of turnover in a typical team in the control group of .89 in a 1-year period.

The relative log-odds ratio coefficient for the ARC intervention dummy variable (coded 0 for control and 1 for intervention) was  $-1.319$ , or a relative odds ratio of .048 [ $\exp(-1.319) = .048$ ]. This indicates that the odds of turnover in the ARC intervention group teams are only 5% of the odds of turnover in the control group teams. The estimated odds of turnover in the ARC teams are .372 [ $\exp(.889 - 1.319) = .372$ ]. Therefore, the estimated probability of turnover in an ARC intervention team is .23 (calculated by converting the odds ratio to a probability), after adjusting for individual level covariates and random effect differences across teams.

#### *HLM analyses of climate for subjects present for the entire study*

The first set of HLM analyses of follow-up climate data include only those subjects who worked in the sampled case management teams for the entire 1-year study period. As shown in Table 3, the Type I intraclass correlations (ICCs) that represent the proportion of criterion variance that can be attributed to teams range from .09 to .16 (Raudenbush & Bryk, 2002, p. 24). For these analyses, the baseline measures of climate are included in the unconditional model. Therefore, the team variances in the follow-up measures associated with the unconditional model have controlled for differences in the baseline measures. As a result, the later assessments of the proportion of team variance explained by the conditional model will describe the proportion of variance in team outcomes explained over and above that associated with differences in the teams' baseline measures.

Table 3  
HLM analyses of climate for case managers who were team members at both baseline and follow-up ( $n = 118$ , teams = 26)

| Model                                    | Variable  | Role conflict |           |          |          | Role overload |           |          |          | Depersonalization |           |          |          | Emotional exhaustion |           |          |          |
|--|-----------|---------------|-----------|----------|----------|---------------|-----------|----------|----------|-------------------|-----------|----------|----------|----------------------|-----------|----------|----------|
|  |           | <i>b</i>      | <i>SE</i> | <i>t</i> | <i>p</i> | <i>b</i>      | <i>SE</i> | <i>t</i> | <i>p</i> | <i>b</i>          | <i>SE</i> | <i>t</i> | <i>p</i> | <i>b</i>             | <i>SE</i> | <i>t</i> | <i>p</i> |
| Unconditional                            | Constant  | 27.81         | .58       | 47.66    | .000     | 30.00         | .60       | 50.21    | .000     | 10.26             | .39       | 26.23    | .000     | 17.98                | .63       | 28.57    | .000     |
|  | Baseline  | .61           | .08       | 7.26     | .000     | .61           | .10       | 6.23     | .000     | .52               | .09       | 5.81     | .000     | .63                  | .09       | 7.12     | .000     |
| Team variance                            |           | 2.52          |           |          |          | 3.78          |           |          |          | 1.75              |           |          |          | 3.46                 |           |          |          |
| ICC                                      |           | .09           |           |          |          | .15           |           |          |          | .16               |           |          |          | .11                  |           |          |          |
| Conditional<br>Level two                 | Constant  | 30.96         | .87       | 35.45    | .000     | 33.78         | .90       | 37.43    | .000     | 11.82             | .45       | 26.15    | .000     | 20.41                | .95       | 21.55    | .000     |
|  | ARC       | -3.27         | .97       | -3.37    | .003     | -3.42         | .90       | -3.82    | .001     | -1.56             | .55       | -2.85    | .010     | -3.20                | 1.11      | -2.87    | .010     |
| Level one                                | Urban     | -2.36         | 1.08      | -2.18    | .041     | -3.43         | .98       | -3.49    | .002     | -1.05             | .47       | -2.23    | .037     | -.70                 | .99       | -.71     | .488     |
|  | Baseline  | .57           | .10       | 5.78     | .000     | .53           | .11       | 4.70     | .000     | .48               | .08       | 6.15     | .000     | .63                  | .08       | 7.72     | .000     |
|  | Age       | -.02          | .04       | -.54     | .593     | -.06          | .05       | -1.20    | .244     | -.06              | .03       | -2.30    | .031     | -.06                 | .04       | -1.46    | .16      |
|  | Education | .67           | .55       | 1.22     | .237     | 2.13          | .54       | 3.94     | .001     | .59               | .21       | 2.79     | .011     | .91                  | .47       | 1.95     | .06      |
|  | Female    | -.81          | 1.15      | -.70     | .489     | -.71          | 1.04      | -.68     | .501     | -.04              | .66       | -.05     | .958     | .15                  | 1.21      | .13      | .90      |
|  | Minority  | -.07          | 1.03      | -.07     | .948     | -1.62         | .97       | -1.66    | .110     | -.13              | .70       | -.19     | .855     | -1.10                | 1.61      | -.69     | .500     |
| Team variance                            |           | .29           |           |          |          | 3.58          |           |          |          | .89               |           |          |          | 2.18                 |           |          |          |
| Proportion of team<br>variance explained |           | .88           |           |          |          | .05           |           |          |          | .49               |           |          |          | .37                  |           |          |          |

The conditional model reported in Table 3 includes the individual-level covariates (e.g., age, education, gender, minority status) and the two team-level factors (i.e., ARC and urban location). The individual level covariates were grand mean centered to adjust the team intercepts for differences in these covariates (Raudenbush & Bryk, 2002, p. 142). Table 3 shows that the conditional model included the baseline measure of climate and the individual-level demographic characteristics (i.e., age, education, gender, and minority status) at level one, and the organizational intervention (ARC = 1 and control = 0) and the location of the team (urban = 1 and rural = 0) at level two. The conditional model explained from 5% (for role overload) to 88% (for role conflict) of the team-based variance in the climate measures identified in the unconditional model. This was calculated by subtracting the team variance in the conditional model from the team variance in the unconditional model and dividing by the team variance in the unconditional model (Raudenbush & Bryk, 2002, p. 106).

Among caseworker level variables, only education was associated with climate at follow-up. Caseworkers with higher levels of education reported higher levels of role overload and depersonalization at follow-up after controlling for other variables in the model. Among the team level factors, the members of case management teams that participated in the ARC intervention for 1 year reported significantly more positive climates than the control teams. At follow-up, caseworkers in the teams that participated in the ARC intervention reported less emotional exhaustion ( $p = .003$ ), depersonalization ( $p = .001$ ), role conflict ( $p = .01$ ), and role overload ( $p = .01$ ) than caseworkers in the control teams, after controlling for baseline measures of climate, the individual level covariates, and team random effects.

The members of teams in the urban areas reported more positive climates than the teams in the rural areas. This finding replicates findings in a previous study and underscores the barriers to services faced by child welfare and juvenile justice case management teams in rural areas. Members of urban teams reported lower levels of role conflict ( $p = .04$ ), role overload ( $p = .002$ ), and depersonalization ( $p = .037$ ). There was no interaction between the ARC intervention and location, suggesting that the positive effects of the ARC organizational development effort were shared by teams in both rural and urban locations.

#### *HLM analyses of climate for all subjects present at follow-up*

The second set of HLM analyses of climate data was conducted with all members of the intervention and control teams who were employed in the child welfare and juvenile justice system at follow-up regardless of when they were hired. These analyses included caseworkers at follow-up who had joined the sampled teams either before or after the ARC intervention was underway. An individual-level covariate, duration, was included to control for the time that each caseworker participated in the study. Among individual-level covariates, education and minority status were significantly related to some measures of climate. Caseworkers with more education reported higher levels of role conflict, role overload, and emotional exhaustion. Minority caseworkers described lower levels of role conflict and depersonalization.

As shown in Table 4, caseworkers on the teams at follow-up that participated in the ARC organizational intervention reported significantly lower levels of role conflict ( $p = .039$ ) and role overload ( $p = .03$ ) than caseworkers on teams in the control group, controlling for individual level covariates, duration, team location, and team random variance. Although the caseworkers on teams that participated in the ARC intervention also reported lower levels of depersonalization and emotional exhaustion at follow-up than the caseworkers on teams in the control group, these differences were not significant.

Table 4  
HLM analyses of climate for all case managers who were team members at follow-up ( $n = 210$ , teams = 26)

| Model                                 | Variable  | Role conflict |           |          |          | Role overload |           |          |          | Depersonalization |           |          |          | Emotional exhaustion |           |          |          |
|---------------------------------------|-----------|---------------|-----------|----------|----------|---------------|-----------|----------|----------|-------------------|-----------|----------|----------|----------------------|-----------|----------|----------|
|                                       |           | <i>b</i>      | <i>SE</i> | <i>t</i> | <i>p</i> | <i>b</i>      | <i>SE</i> | <i>t</i> | <i>p</i> | <i>b</i>          | <i>SE</i> | <i>t</i> | <i>p</i> | <i>b</i>             | <i>SE</i> | <i>t</i> | <i>p</i> |
| Unconditional                         | Constant  | 26.13         | .68       | 38.64    | .000     | 28.59         | .52       | 55.06    | .000     | 9.58              | .34       | 28.36    | .000     | 16.17                | .51       | 31.42    | .000     |
| Team variance                         |           | 5.29          |           |          |          | 1.42          |           |          |          | 1.54              |           |          |          | 1.51                 |           |          |          |
|                                       | ICC       | .10           |           |          |          | .03           |           |          |          | .13               |           |          |          | .03                  |           |          |          |
| Conditional                           | Constant  | 28.64         | .88       | 32.42    | .000     | 31.33         | .69       | 45.53    | .000     | 10.47             | .53       | 19.70    | .000     | 17.23                | .76       | 22.59    | .000     |
| Level two                             | ARC       | -1.96         | .89       | -2.20    | .039     | -2.12         | .91       | -2.32    | .030     | -.60              | .52       | -1.16    | .260     | -.47                 | .97       | -.48     | .637     |
|                                       | Urban     | -3.21         | .81       | -3.96    | .001     | -2.98         | .83       | -3.61    | .002     | -1.26             | .49       | -2.56    | .019     | -1.54                | .97       | -1.58    | .129     |
| Level one                             | Age       | .07           | .04       | 1.83     | .080     | .04           | .04       | 1.06     | .301     | -.02              | .02       | -1.11    | .280     | .04                  | .03       | 1.23     | .231     |
|                                       | Education | 1.65          | .49       | 3.37     | .003     | 1.98          | .48       | 4.14     | .000     | .38               | .23       | 1.67     | .108     | 1.33                 | .44       | 3.06     | .006     |
|                                       | Female    | -.68          | .95       | -.72     | .480     | .11           | .94       | .11      | .911     | -.55              | .58       | -.95     | .354     | .18                  | .82       | .223     | .826     |
|                                       | Minority  | -4.24         | 1.47      | -2.88    | .009     | -2.60         | 1.51      | -1.72    | .098     | -2.06             | .47       | -4.40    | .000     | -2.18                | 1.59      | -1.37    | .183     |
|                                       | Duration  | .02           | .03       | .60      | .551     | .00           | .02       | .22      | .831     | .01               | .02       | .89      | .382     | .02                  | .02       | .71      | .487     |
| Team variance                         |           | .56           |           |          |          | .11           |           |          |          | .56               |           |          |          | 1.15                 |           |          |          |
| Proportion of team variance explained |           | .89           |           |          |          | .92           |           |          |          | .64               |           |          |          | .24                  |           |          |          |

Again, caseworkers in urban teams reported lower levels of role conflict ( $p = .001$ ), role overload ( $p = .002$ ), and depersonalization ( $p = .019$ ). There was no location by intervention interaction, indicating that ARC was equally effective in urban and rural locations.

#### *HLM analyses of culture as an outcome variable*

The HLM analyses of the measures of culture indicated no differences in culture between the ARC intervention and control groups and are not shown here. That is, the caseworkers on the teams that participated in the ARC intervention described behavioral norms and expectations that were similar to those described by caseworkers on teams in the control group. This was true for caseworkers who were employed in the child welfare and juvenile justice system for the entire 1-year study period and also true for all caseworkers at follow-up regardless of whether or not they were members of the sampled teams for the entire study period.

## **Discussion**

The analyses of the effects of the ARC intervention on caseworkers in child welfare and juvenile justice case management teams focused on three overlapping samples. First, analyses of staff turnover conducted with all caseworkers who were employed as members of the case management teams at the beginning (baseline) of the study found that the case management teams that participated in the ARC intervention had much lower turnover rates than the case management teams in the control condition. Second, caseworkers who were present at the beginning of the study and were still members of the sampled case management teams at the end of the study period reported lower levels of depersonalization, emotional exhaustion, role conflict, and role overload in the ARC condition than in the control condition. Finally, caseworkers who were members of the sampled teams at follow-up, regardless of whether they joined the teams before or after the intervention began, reported lower levels of role conflict and role overload in the ARC condition than in the control condition.

The findings of this study are important for several reasons. First, it is one of the very few studies that used a true experimental design to test the effects of an organizational intervention in a human service system. Second, it is the only such study that has been conducted in a child welfare and juvenile justice system. Third, because child welfare and juvenile justice systems experience very high turnover rates nationwide, the finding that the ARC organizational intervention significantly reduced turnover among caseworkers has important implications for addressing turnover problems in these systems. Fourth, the findings show that the ARC organizational intervention also improved the organizational climates of the teams in which the caseworkers functioned. Because organizational climate has been linked to service quality and service outcomes in previous studies of child welfare and juvenile justice systems (Glisson, submitted; Glisson & Hemmelgarn, 1998; Glisson & James, 2002), the finding that the climate of these systems can be improved with an organizational intervention strategy has implications for improving services as well as for reducing caseworker turnover.

The finding that the ARC intervention strategy did not change the organizational culture in which these caseworkers functioned is also important. The cultures of these types of large public bureaucracies are deeply embedded and notoriously difficult to change. The findings indicate that the case managers' perceptions of the behavioral norms and expectations characterizing their teams' cultures did not change

as a result of the organizational intervention, but that the caseworkers' perceptions of the impact of those norms and expectations on their own well being (i.e., climate) did.

These findings support the view of many organizational theorists that organizational culture is more difficult and much slower to change than climate. Few studies have been conducted with measures of both culture and climate, and almost no true experimental designs used to test the impact of an organizational intervention on both culture and climate simultaneously in any type of organization. Therefore, these findings are important because they confirm the notion shared by many writers that efforts to develop new organizational cultures require a longer intervention period than that required to develop more positive climates.

Although the ARC intervention did not change culture, the findings support the model presented in our earlier work that climate mediates the impact of organizational properties on workers' attitudes and behavior (Glisson, 2002). This model argues that organizational properties such as cultural norms and expectations can affect workers in different ways, depending on each worker's perceptions of how those properties impact his or her own well-being. Although the larger service system norms and expectations did not change as the result of the ARC intervention, caseworkers who participated in the ARC intervention had more positive perceptions of the impact of those norms and expectations on their own well-being. As a result, they were much less likely to quit their jobs.

There are at least three limitations to the study. First, given the intensive training required of the ARC change agents (20 hours per week for 6 months) and the amount of time that the change agents then spent with each case management team (2 hours per week for 1 year), there are significant time commitments and costs associated with the ARC intervention. Additional work is needed to assess these costs against the substantial time and costs savings that might accrue to child welfare and juvenile justice systems as the result of reducing high levels of staff turnover. Potential costs of staff turnover include the recruitment and training of new personnel, and the additional long-term service costs (e.g., increased residential care) that could result from less effective case management services. But more information is needed to determine the cost benefit ratio of improved work environments and the value of organizational intervention strategies for improving services.

Second, additional studies are needed in other states to generalize findings to other children's service systems. Replications of this first randomized trial of an organizational intervention in a child welfare and juvenile justice system are needed to address concerns about external validity and the feasibility of implementing such interventions on a broader basis.

Finally, the study does not assess the impact of the ARC intervention on outcomes for children and families. Although it is important that organizational climate is improved and turnover reduced, additional research must be conducted to link the ARC intervention to child and family outcomes.

To summarize, this study provides evidence that organizational intervention strategies can be used to improve the organizational climates of child welfare and juvenile justices systems. The study also provides evidence that these development strategies can be used to reduce the high employee turnover rates in these systems. Given the effects established previously of staff turnover and organizational climate on service quality and outcomes, the findings suggest that organizational development strategies may be effective in improving the services provided by child welfare and juvenile justice systems. The finding that culture was not affected by the organizational intervention is also important. It supports models of organizational context that describe culture as more deeply embedded and difficult to change than climate, and suggests that longer intervention periods are needed to improve organizational cultures.

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## Résumé

**Objectif :** Cette étude examine la mobilité des employés, le climat et la culture organisationnels dans un système de bien-être à l'enfance et de la justice juvénile, ceci suite à l'implantation d'une stratégie d'intervention axée sur la disponibilité, la sensibilité aux besoins et la continuité.

**Méthode :** Au moyen d'un design expérimental comprenant des groupes aléatoires, 10 équipes urbaines et 16 équipes rurales ont été assujetties de façon aléatoire au programme en question ou à un programme contrôle. La culture et le climat de chaque équipe ont été évalués au stage initial et une année après l'implantation de l'intervention. De plus, la mobilité des employés a été évaluée en identifiant tous les travailleurs sociaux qui avaient démissionné durant l'année.

**Résultats :** Une analyse utilisant des modèles hiérarchiques linéaires porte à croire que l'intervention organisationnelle a réduit de plus de deux tiers la mobilité des travailleurs sociaux dans les deux types d'équipes et a amélioré le climat de travail en réduisant les conflits au niveau des rôles, la charge de travail excessive, l'épuisement émotionnel et la dépersonnalisation.

**Conclusions :** Des stratégies qui interviennent au niveau de l'organisation peuvent réduire la mobilité du personnel et améliorer le climat du milieu de travail dans des systèmes urbains et ruraux du bien-être à l'enfance et de la justice juvénile. Ceci est important parce que, aux États Unis, ces systèmes sont envahis de problèmes de mobilité, et qu'en retour, ces problèmes ont des répercussions nocives sur la qualité des services et leurs effets.

## Resumen

**Objetivo:** este estudio examina los efectos de una estrategia de intervención organizacional ARC (Accesibilidad, Respuesta y Continuidad) en el agotamiento de los responsables de caso, el clima y la cultura en un sistema de protección infantil y de justicia juvenil.

**Método:** Utilizando un diseño experimental aleatorio y pre-post, equipos de gestión de casos (10 urbanos y 16 rurales) fueron asignados al azar tanto a la condición de intervención organizacional ARC como a la condición control. La cultura y el clima de cada equipo fueron evaluados en la línea base y nuevamente después de un año de haberse completado la intervención organizacional. Además se evaluó el agotamiento profesional de los responsables de caso identificando los profesionales que abandonan su puesto de trabajo a lo largo del año de intervención.

**Resultados:** Los análisis del Modelo Linear Jerárquico indican que al intervención organizacional ARC redujo el agotamiento profesional en más de dos tercios y mejoró el clima organizacional reduciendo los niveles de conflicto de roles, el solapamiento de roles, el cansancio emocional y la despersonalización tanto en los equipos urbanos como en los rurales.

**Conclusiones:** las estrategias de intervención organizacional pueden ser utilizadas para reducir el agotamiento del equipo profesional y para mejorar el clima organizacional en el sistema de justicia juvenil y de protección infantil urbano y rural. Esto es importante porque los sistemas de justicia juvenil y de protección infantil en U.S.A. están invadidos por altas tasas de agotamiento profesional y porque hay evidencias de que dicho agotamiento profesional y el mal clima organizacional afectan negativamente a la calidad del servicio y a los resultados de dichos sistemas.