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CHAPTER 6

TEACHER STRESS AND CLASSROOM STRUCTURAL CHARACTERISTICS IN PRESCHOOL SETTINGS

Richard G. Lambert, Megan O'Donnell, Jennifer Kusherman, and Christopher J. McCarthy

The Classroom Appraisal of Resources and Demands (CARD) was used to explore stress among preschool teachers (N = 317). The sample yielded reliable difference scores, which measured the gap between a teacher's appraisal of both classroom demands and the resources available to meet those demands. These scores were used to classify teachers according to risk of stress and were examined for associations with classroom structural characteristics. Teacher stress was related to the number of children with problem behaviors in the classroom.

Teaching has been recognized as an emotionally taxing and potentially frustrating occupation for centuries. For several decades, researchers in the social sciences have identified teaching as an occupation with a high risk of stress (Dunham & Varma, 1998; Kyriacou, 2000, 2001; Kyriacou & Sutcliffe, 1977; Travers & Cooper, 1996). The working conditions for

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teachers also present a high risk for burnout. In fact, teachers are the largest homogenous occupational group investigated in burnout research, comprising 22% of all samples (Schaufeli & Enzmann, 1998).

Researchers of stress in general and teacher stress in particular have used a variety of strategies to measure the construct of stress. Self-reports of negative life events (Sarason, Johnson, & Siegel, 1978) have been applied extensively. Another approach has been to ask respondents to identify the stress symptoms they experience (Green, Walkey, McCormick, & Taylor, 1988). The symptoms approach has included measures of physical and mental health; behavioral indicators, such as difficulties in relationships or on the job; and physiological changes during the stress response, such as heart rate and hormonal indicators (Kyriacou, 2001). Measures of coping strategies and resources have also been widely used (Hammer & Marting, 1988).

The most common strategy for measuring teacher stress has been self-report questionnaires that ask respondents to rate how stressful they find various aspects of their working conditions (Kyriacou & Sutcliffe, 1978). Another approach has been to combine perceptions of various sources of stress with the severity of manifestations of the stress response (Fimian, 1984, 1985, 1987, 1988). When multiple constructs have been included in teacher stress measurement tools, they often examine different aspects of the global domain of job demands, such as role strain, job satisfaction; specific sources of stress, such as the lack of parental or administrative support; and finally, the outcomes of excessive job demands, such as the symptoms of burnout and the stress response. Specifically, the measurement of teacher burnout has been a widely employed strategy to identify those teachers who may have experienced high levels of demand for extended periods of time (Maslach & Jackson, 1981; Maslach & Schaufeli, 1993; Maslach, Schaufeli, & Leiter, 2001).

All of these strategies, with the exception of those focused on coping resources, attempt to measure all or part of a single global construct: perceived demands. Stress researchers in general continue to treat stress as a single construct rather than the difference between two distinct constructs: resources and demands (McCarthy, Lambert, Beard, & Dematatis, 2002). Increased occupational demands do often lead to increased occupational stress for many teachers. However, stress theorists view stress as more than an increase in demands. Stress is defined as the result of an interaction, or imbalance, between two distinct constructs involving an internal psychological process of appraising both demands and resources. Furthermore, this appraisal process is regarded as integral to both optimal functioning and the stress response (Lazarus & Folkman, 1984).

Some measures have been generated by a conceptualization of teacher stress as a function of the compatibility of teachers and students, focusing

on the demands of working with specific children with problem behaviors and the teacher's sense of efficacy about handling the demands of interactions with these children (Greene, Abidin, & Kmetz, 1997). Few, if any, instruments have attempted to measure simultaneously both the job demands and coping resources of teachers within the classroom setting, and rely on the relationship between the two as the indicator of risk for the stress response.

Recent theoretical developments suggest that both coping and the subjective experience of stress can be situationally specific (Sapolsky, 1998). Individuals may report perceived control in one situation while making a different appraisal of resources and demands under other circumstances. Such a distinction seems especially important to examine in an educational context, where both resources and demands can vary considerably depending on classroom characteristics, teacher background, and school environment (McCarthy et al., 2002). Furthermore, experts in the field of teacher stress research have called for measures that consider each teacher's unique occupational circumstances, particularly their perceptions of excessive administrative demands, teacher-child interactions, and classroom climate (Kyriacou, 2001).

The Classroom Appraisal of Resources and Demands (CARD, preschool version) (Lambert, Abbott-Shim, & McCarthy, 2001) was therefore developed to assess teacher stress by examining teachers' perceptions of both the demands that are specific to their classrooms and the resources their schools provide to address these demands. This approach is rooted in the transactional models of stress and coping, the most influential of which has been suggested by Lazarus and Folkman (1984). A central construct of this model is cognitive appraisal, which is essentially one's cognitive categorization of an event, its various features, and its significance for one's well-being. Stress theorists define resources broadly as both material resources (money, materials, technical support from others, etc.) and personal resources (coping strategies, interpersonal skills, etc.). The CARD focuses on the material resources available to teachers.

Two types of cognitive appraisals, according to Folkman and Lazarus (1988), are: (1) primary appraisal of whether a specific event represents a threat to the individual and (2) secondary appraisal of one's perceived capacity for handling the potential stressor. Events that are perceived as potentially threatening can result in the stress response, which is a set of physiological and psychological changes that occur reflexively whenever coping resources are seriously challenged. Any event perceived to be aversive triggers this response and while a hyper vigilant nervous system was extremely adaptive to our ancestors, modern stressors are mainly psychosocial (Matheny, Aycock, Pugh, Curlette, & Canella, 1986). As such, they

can persist for extended periods of time and contribute to a large array of psychological and physical disorders.

The dominant models of stress and coping emphasize the importance of subjective evaluations of events in determining whether or not demands will be experienced as stressors (Cox, 1978; Hobfoll, 1988a, 1988b; Matheny et al., 1986). Such transactional models of stress assume that when a potentially threatening event is encountered, a reflexive, cognitive balancing act ensues in which the perceived demands of the event are weighed against one's perceived capabilities for dealing with it. Instances in which the estimated demands exceed one's resources are presumed to result in the stress response.

The few extant investigations of stress in teachers of young children have focused only on the demands side of this equation. Two clusters of occupational demands have been reported: children with problem behaviors in the classroom and external demands from outside the classroom, such as administrative and policy-related issues. Pratt (1978) found that teachers who serve young children view children with behavior problems as the most demanding aspect of their jobs. Subsequent efforts have revealed concerns with excessive paperwork requirements, workload and time constraints, and pressure from administrators, specifically those related to mandated curricula and instructional strategies (Moriarty, Edmonds, Blatchford, & Martin, 2001). This last issue is particularly relevant to Head Start teachers as the federal agency that governs the program has instituted a variety of performance standards that require specific curricular and assessment practices (Zill & Kim, 2005).

The purpose of this study was to examine teacher stress in preschool settings with particular attention to whether any structural features of the classroom were associated with high teacher stress. Structural characteristics are defined for the purpose of this study as the number of children in the classroom, both in total and in specific subgroups, as well as teacher qualifications. The researchers were also interested in comparing various aspects of classroom demands and resources to determine which components of the workplace were perceived by preschool teachers as most demanding and which resources were seen as most helpful in meeting those demands. In addition, this study extended the process of establishing reliability and validity evidence for the CARD.

METHOD

Participants

The participants were a sample of 317 preschool teachers from Alabama, Georgia, North Carolina, and South Carolina (see Table 6.1). The

Table 6.1. Demographic Composition of the Sample (*N* = 317)

Characteristic		*Percent*
Gender	Male	1.8
	Female	98.2
Ethnicity	European American	40.7
	African American	55.6
	Hispanic/Latino(a)	0.0
	Asian/Pacific Islander	1.9
	Other	1.9
Education level	High school	38.6
	Technical school	16.5
	AS	14.2
	BS	26.7
	MS/MEd	4.0
Child development associate credential	Yes	57.9
	No	42.1
Currently working on a degree	Yes	59.5
	No	39.9
Degree in education or related field	Yes	39.7
	No	60.3
Work setting	Head Start	92.5
	Public pre-K	5.0
	Private preschool	2.5

teachers had an average of 7.81 years of teaching experience, including 4.89 years experience at their current place of employment. The teachers reported an average class size of 17.74. The average age of the teachers in the sample was 37.81 and they reported their ethnicity as follows: African-American (55.6%), European-American (40.7%), and other (3.8%). Only 30.7% reported having a bachelor's or master's level college degree, 14.2% an associate's degree, and 59.5% were currently in school working toward a degree. The sample teachers reported their settings as follows: Head Start (92.5%), Public Prekindergarten (5.0%), and private preschool settings (2.5%), and all served low income populations.

Procedure

The CARD, preschool version, was administered to the sample of preschool teachers. Each teacher reported the demographic composition and unique or demanding features of his/her classroom, and whether personal and school-provided resources were sufficient to handle classroom demands. Teachers were contacted through the intraoffice mail system within the Head Start programs. A similar procedure was followed in the

private and public school settings. Teachers returned surveys to an on-site data collection coordinator who worked for the researchers. This method insured anonymity, confidentiality, and separated ratings of the classroom from administrators. Three waves of data collection took place over two academic years. The first two waves were part of a larger study of classroom quality in Head Start programs, while the third wave was part of a larger study that evaluated a particular preschool curriculum model.

Results

The CARD has two scales, Classroom Demands and Classroom Resources. The Demands scale asks teachers to rate the extent to which various features of the classroom context are demanding and yielded a Cronbach's alpha reliability of .941. The Classroom Resources scale asks teachers to rate how helpful the school-provided resources are in assisting with the demands of the classroom and showed a similarly high value, .950. The two scales were not correlated ($r = -.080$). Subtracting standardized versions of the scales scores, Demands minus Resources, created a difference score. Application of the reliability of a difference score formula (Crocker & Algina, 1986) yielded a reliability estimate for this sample of .950. Since the difference score approach, using data from this sample, indicated acceptable reliability, the standard error of measurement for the difference score was calculated using this reliability estimate. A 95% confidence interval was constructed around zero and the upper and lower bounds of this interval were used to establish the cut scores for classifying teachers. Each teacher was classified into one of three groups: Resources greater than Demands (R > D) (34.7%), Resources equal to Demands (R = D) (30.9%), and Demands greater than Resources (D > R) (34.4%). This last group was hypothesized to be at risk for a stressful experience in the classroom. This method allowed the researchers to be 95% confident that the true score for the difference between Resources and Demands was not zero in either of the extreme groups. This three-group distinction would be useful in testing the transactional model of stress and coping.

Factor analysis was used to explore the underlying dimensions of both the resources and demands sections of the CARD. When principal components analysis with varimax rotation was applied to the data from the demands section, a four-factor solution emerged that accounted for 67.31% of the variance. The administrative demands subscale addressed about demands associated with meetings, paperwork, assessments, and various noninstructional duties. The classroom environmental demands subscale described demands associated with the physical classroom space,

Table 6.2. Measurement Properties of the CARD Scales and Subscales

Measure	*Subscale*	*Mean*	*SD*	*Number of Items*	*Reliability*
Demands	Administrative demands	2.769	0.978	10	0.920
	Classroom environmental demands	2.174	1.142	6	0.908
	Children with behavior problems	3.110	1.182	3	0.911
	Children with other special needs	2.522	0.812	7	0.808
	Total score (D)	2.602	0.795	26	0.941
Resources	Speacialized resources	3.728	0.900	11	0.944
	General program resources	4.205	0.684	9	0.891
	Parents	3.418	1.098	2	0.785
	Total score (R)	3.921	0.707	22	0.950
Stress	Difference score (D – R)	0.005	1.470	48	0.950

program facilities, and available materials. The children with problem behaviors subscale addressed the demands associated with behavior management and interactions with children who disrupt the learning environment. The children with other special needs subscale outlined demands involved with children who present other needs to the teacher, such as English language acquisition and physical disabilities.

The means, standard deviations, number of items, and Cronbach's alpha reliability coefficients for each of the subscales are presented in Table 6.2. The total score for Demands and each of its subscales yielded information from this sample with adequate reliability. The items in the Demands scale required teachers to rate the severity of the demands associated with various aspects of the classroom environment using a 5-point Likert scale that ranged from 1 (*not demanding*) to 5 (*extremely demanding*). The means of each of the Demands subscales ranged from 2.17 (*occasionally demanding*) for the classroom environmental demands subscale to 3.11 (*moderately demanding*) for the children with problem behaviors subscale.

When principal components analysis with varimax rotation was used with the Resources section, a three-factor solution emerged that accounted for 73.85% of the variance. The specialized resources subscale referred to resources designed to help teachers with children who have special needs. The general program resources subscale allowed the teachers to rate how helpful they find administrators, other teachers, general instructional materials, and staff development opportunities. The parents subscale referred to the help and support teachers receive from parents.

Two of the subscales and the total score for the Resources section yielded information from this sample with adequate reliability. The parents subscale offered information that approached adequate reliability (.79). The items in the Resources scale asked the teachers to rate the help-

ulness of various resources using a 5-point Likert scale that ranged from *(very unhelpful)* to 5 *(very helpful)*. The means of each of the Resources ubscales ranged from 3.42 *(occasionally helpful)* for the parents subscale to 4.21 (helpful) for the general program resources subscale.

A mixed factorial analysis of variance using the multivariate approach vas used to test whether there were statistically significant differences in nean scores between the subscales and stress groups. Separate analyses vere performed for the demands and resources sections. Subscale was ntered as a within subjects term and stress group was entered in the nodel as a between subjects term. There was a statistically significant nain effect for stress group in each analysis (Demands: $F_{(2, 310)} = 131.68$, $< .001$; Resources: $F_{(2, 311)} = 79.06$, $p < .001$). A statistically significant nain effect for subscale was also found in each analysis (Demands: $_{(3, 308)} = 76.02$, $p < .001$; Resources: $F_{(2, 310)} = 151.26$, $p < .001$), as was statistically significant stress group by subscale interaction (Demands: $_{(6, 616)} = 5.50$, $p < .001$; Resources: $F_{(4, 620)} = 3.62$, $p = .006$).

Graphical displays and Tukey post hoc comparisons were used to nhance interpretation of the interaction effects. The cell means, standard deviations, and post hoc comparison results are reported in Table 6.3. Not surprisingly, the stress groups could be rank ordered in the predictable order given how they were formed. The only finding of note merged from the Parents resources subscale scores where there was not a tatistically significant difference between the D = R and D > R groups. or the entire sample, the subscales concerning Demands could be rank rdered as follows (most demanding to least demanding): children with ehavior problems (B), administrative demands (A), children with other pecial needs (O), and classroom environmental demands (E). The interction appeared to be related to differences between the stress groups ith respect to this pattern. For example, there was no difference between he B, A, and O subscales for the R = D group while B and A subscales ere both rated as more demanding than the O and E subscales for the > R group. For entire sample on the Resources section of the measure, he subscales could be rank ordered as follows (most helpful to least helpl): general program resources (G), specialized resources (S), and parents P). The interaction effect was related to a small difference in this pattern or the D > R group where there was no difference in the perceived helpulness of the S and P subscales.

Only one statistically significant difference was found between teachers ho rated Demands greater than Resources and those who rated esources equal to or exceeding Demands with respect to classroom characteristics (see Table 6.4). Teachers who rated Demands greater than esources had, on average (mean = 3.600, 84.7% with at least one problem behavior child), more children in their classrooms with behavior

Table 6.3. Differences in CARD Scores Between the Stress Level Groups

Measure	*Subscale*		*Group 1 n = 110 R > D*	*Group 2 n = 98 R = D*	*Group 3 n = 109 D > R*	*Total n = 317*	*Post Hoc Comparisons*
Demands	Administrative demands (A)	Mean	1.961	2.959	3.414	2.754	3 > 2 > 1
		SD	0.646	0.806	0.823	0.973	
	Classroom environmental demands (E)	Mean	1.404	2.198	2.928	2.156	3 > 2 > 1
		SD	0.563	1.033	1.165	1.138	
	Children with problem behaviors (B)	Mean	2.568	3.177	3.610	3.110	3 > 2 > 1
		SD	1.091	1.164	1.056	1.182	
	Children with other special needs (O)	Mean	2.003	2.640	2.941	2.508	3 > 2 > 1
		SD	0.590	0.748	0.780	0.801	
	Total score (D)	Mean	1.904	2.717	3.203	2.602	3 > 2 > 1
		SD	0.456	0.576	0.685	0.795	
	Post hoc comparisons		B > A, O > E	B, A, O > E	B, A > O, E	B > A > O > E	
Resources	Specialized resources (S)	Mean	4.294	3.826	3.070	3.735	1 > 2 >3
		SD	0.550	0.679	0.936	0.890	
	General program resources (G)	Mean	4.655	4.316	3.651	4.204	1 > 2 >3
		SD	0.307	0.444	0.756	0.684	
	Parents (P)	Mean	3.800	3.378	3.061	3.417	1 > 2, 3
		SD	0.838	1.156	1.161	1.100	
	Total score (R)	Mean	4.421	4.006	3.340	3.921	1 > 2 >3
		SD	0.349	0.485	0.726	0.707	
	Post hoc comparisons		G > S > P	G > S > P	G > S, P	G > S > P	
Stress	Difference score (D – R)	Mean	-1.580	0.030	1.583	0.005	3 > 2 > 1
		SD	0.672	0.334	0.831	1.470	

		Group 1 n = 110 R > D	Group 2 n = 98 R = D	Group 3 n = 109 D > R	N = 317 Total	F	Post Hoc
Teacher Characteristics							
Years of experience in teaching	Mean	7.154	7.867	8.411	7.809	0.936	
	SD	5.866	6.570	7.733	6.772		
	%[a]	13.9%	11.2%	18.5%	14.83%		
Years of experience at current program	Mean	4.598	5.739	4.410	4.887	2.040	
	SD	4.528	5.760	4.929	5.090		
	%[a]	22.9%	26.5%	26.6%	25.24%		
Age	Mean	37.200	40.810	36.190	37.810	1.063	
	SD	10.401	11.297	9.148	10.094		
Classroom Characteristics							
Class size	Mean	17.509	18.061	17.685	17.741	1.439	
	SD	2.333	2.402	2.406	2.383		
English language learners	Mean	4.673	4.163	3.252	4.032	2.155	
	SD	5.686	5.256	4.229	5.114		
	%[b]	26.2%	22.3%	18.4%	22.3%		
Children who are behind developmentally	Mean	2.229	2.755	2.870	2.613	2.525	
	SD	2.146	2.368	2.192	2.244		
	%[b]	12.5%	15.2%	16.7%	14.8%		
Children with poor attendance	Mean	1.287	1.449	1.713	1.484	2.377	
	SD	1.381	1.458	1.504	1.455		
	%[b]	7.3%	7.9%	9.8%	8.4%		
Children with problem behaviors	Mean	1.755	2.367	3.284	2.470	13.326***	3 > 1, 2
	SD	1.940	2.102	2.524	2.290		
	%[b]	10.2%	13.1%	19.1%	14.2%		

[a]Percentage of teachers with less than 2 years of experience in teaching or program.
[b]Mean percentage of the total class size. ***$p < .001$.

problems than did teachers in the other groups. In the classrooms in which Resources outweighed Demands, 69.0% of the teachers reported at least one problem behavior child (mean = 1.8736), while 71.9% of the teachers from the classrooms with Demands equal to Resources reported having at least one (mean = 2.2584). However, the three groups did not report significant differences in class size, number of non-English speaking children, children who were developmentally behind, special needs children, homeless or transient children, or those with poor attendance.

Mean years of teaching experience, years of experience in their current schools, educational level, and age of teachers were equivalent across the groups. Similarly, there was not a statistically significant difference between the three groups with respect to the percentage of each that is comprised of teachers who are within their first two of teaching: R > D—13.9%, R = D—11.2%, and D > R—18.5%. This same analysis can be reported in terms of the percentage of each experience level grouping who reported demands greater than resources: 43.5% of those within their first two years of teaching as compared to only 32.8% of more experienced teachers. Although not statistically significant ($\chi^2_{(2)} = 2.26$, $p = .32$), these differences are in the expected direction and future research may need to focus on the appraisals of new teachers.

At the end of the instrument, the respondents were asked to rate directly whether the demands of their classroom were greater than they can handle given the resources available from their school or program. This was accomplished through the use of a graphic display of a scale with demands on one side of the scale and resources on the other. They were given three choices (demands greater than resources, demands equal to resources, and resources greater than demands) and asked to circle the picture that most accurately describes their working conditions. The appearance of the scale related to each of three choices by either tipping to one side or the other, or remaining level. A second question followed, using the same graphic display options, which asked them to reevaluate the relationship between resources and demands by considering both the personal resources they bring to the classroom and the resources provided by their school or program. For the first question, 35.5% of teachers selected the demands greater than resources option, while 25.3% indicated demands were greater than resources when asked to include personal resources.

DISCUSSION

The findings from this study suggest that teacher ratings of classroom demands can be identified according to the following themes, presented in order of their perceived severity (high to low): (a) children with prob-

m behaviors, (b) administrative demands, (c) children with other special eds, and (d) classroom environmental demands. Teacher perceptions of sources fell into three themes, presented in order of perceived helpful-ss (high to low): (a) general program resources, (b) specialized program sources, and (c) parents.

The relationship between perceived demands and resources appeared be a viable strategy for classifying teachers. Over 30% of the present mple was identified as having a substantial risk for stress, confirming evious studies that have generally found around one quarter of teachers te their working conditions as very stressful (Kyriacou, 2001). The clas-ication strategy was validated by evidence for an association between ıcher stress and the number of preschool children with problem behav-s in a given classroom. Specifically, the presence of just one or two ore such children in the classroom was associated with a pattern of praisals and perceptions that indicate classroom demands are greater an resources, and thereby place a teacher at for stress. These findings er partial evidence for the applicability of the transactional model of ess and coping to educational settings (Lazarus & Folkman, 1984) and nfirm previous studies that have found behavior management issues to among the most significant stressors for teachers (Kyriacou, 2001; Kyr-ou & Sutcliffe, 1978; Makinen & Kinnunen, 1986; Parkay, Greenwood, enjik, & Proller, 1988; Pratt, 1978; Turk, Meeks, & Turk, 1982). Admin-rative demands were rated as the next most demanding aspect of the eschool teacher's work life, confirming the findings of Moriarty et al.)01).

These findings suggest that preschool administrators consider teacher ess as an important contextual variable when placing children with oblem behaviors into classrooms, particularly as teachers perceive the ssroom environment as more stressful when a critical threshold of dis-otive children has been reached. Teachers may be sensitive to inequali-s between classrooms with respect to the number of children with oblem behaviors. Administrators may need to assess the classroom ial environment early in the academic year and consider transferring ne children with problem behaviors to different classrooms to establish nore positive balance between classrooms. In addition, teachers who perience stress themselves may be less able to enhance the social devel-ment of children, making their classrooms potentially inappropriate icements for the children who have the most to gain from a positive vironment for social development. Administrators may also need to nsider novel strategies for nurturing preschool teachers in the areas of navior management and coping with the stresses associated with inter-ions with children with problem behaviors.

The results from the single item appraisals of the balance between resources and demands at the end of the measure must be taken with caution given the possibility for measurement error inherent in using single item indicators. However, it is interesting to note that number of respondents who selected demands greater than resources declined 10.2 percentage points when the respondents added their personal resources to the equation. This finding suggests that at least some of the teachers spend their own resources on classroom materials and find this a useful coping strategy for handling classroom demands. This figure represents 28.7% of those who indicated that demands exceeded resources when considering only program resources.

Limitations

This study had several limitations. The overwhelming majority (92.5%) of the teachers in the study worked in Head Start settings. Therefore, the findings may have limited generalizability outside the Head Start environment. The Head Start environment presents an interesting combination of contextual characteristics. Given the level of federal funding available to Head Start programs, and the opportunities for supplementing that funding with state and local sources, these classrooms were likely to be reasonably well equipped with materials. However, teacher salaries are likely to be well below, in many cases half, those available in public school settings in the same communities. In addition, all of the teachers in the sample served children from low income families.

All of the data for this study were collected using one self-report instrument. The findings are descriptive and correlational, and caution should be exercised in making any causal inferences based on the findings of this work. However, the transactional model of stress upon which this work is based emphasizes the role of the cognitive process by which *perceived* demands are weighed against *perceived* resources. Cognitive appraisals, categorizations of demands and resources rooted in one's idiosyncratic *perceptions* of events and circumstances, are presumed to be central to this process and ultimately related to one's risk of the stress response (Lazarus & Folkman, 1984). Therefore, self-report data is critical to an understanding of teacher stress and an appropriate data collection strategy given the nature of the research questions.

Future Research

Future research that makes use of mixed methods by adding some observational data to the self-report information from standard measures of teacher stress may help advance our understanding of the differences

lassroom processes and interactions that are characteristic of teachers
experience stress and those who do not. Future research using the
RD will be most useful if it can extend the reliability and validity evi-
ce for the use of the measure in various educational contexts. Specifi-
, the factor analysis results suggest the possibility of adding additional
is to several of the subscales with relatively few items. It may be useful
est additional items for the general program resources subscale, pay-
particular attention to whether it can be separated into two subscales:
sical materials and human resources (assistance and support from col-
ues and administrators). Additional studies are needed to extend the
ence for the construct validity of the measure, particularly by using it
g with existing measures of coping, burnout, and stress.

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his study began the process of establishing reliability and validity evi-
ce for the use of the CARD in preschool settings. The method of mea-
ig teacher stress in a context-specific way by directly assessing and
paring teacher perceptions of classroom resources and demands
's promise as a strategy to further investigate and test the application
e transactional model of stress and coping in educational settings.

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