



### Background

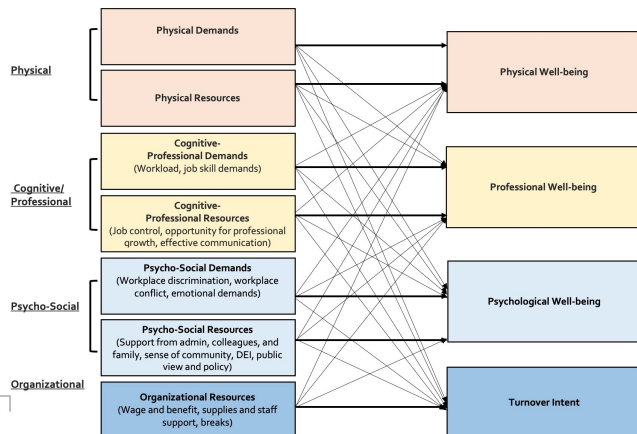
- Recruiting and retaining highly qualified and effective early care and education (ECE) teachers lays a critical foundation for high-quality care of children at their most vulnerable stage in life (Institute of Medicine and National Research Council, 2015; Whitebook et al., 2018).
- However, in recent years, the early childhood workforce has experienced pressing challenges related to poor working conditions, such as high job demands, low pay, and lack of adequate resources and support, which are all likely to contribute to poor teacher well-being, low classroom quality, and high teacher turnover (Grant et al., 2019; Hentschel et al., 2023; Kwon et al., 2020, 2021).
- ECE teacher working conditions, in terms of job demands and resources, are multidimensional and complex. However, few existing measures capture the quality and range of experiences that characterize the totality of working conditions of ECE educators (Curbow et al., 2000; Jorde-Bloom, 1988; Wong, 2015).
- These existing measures are based upon strong theoretical frameworks (e.g., a combination of demand-control model, reward imbalance model, and transactional model in Curbow et al., 2000), pay attention to various aspects of working conditions, and exhibit sound psychometric properties.
- However, they also omit some key features and dimensions of ECE teacher working conditions (e.g., physical job demands, the physical environment, and key organizational resources) critical for ECE workforce well-being and stability.

### Purpose

To develop a holistic and comprehensive measure with clear, specific dimensions relevant to early care and education (ECE) teachers' work (including physical demands and resources, cognitive-professional job demands and resources, psycho-social demands and resources, and organizational resources) and then to engage in a multi-step process to test the validity and reliability of our developed scale with a national sample of ECE teachers.

### Conceptual Framework

#### Matching Hypothesis: Stronger Parallel Associations than Cross-Paths

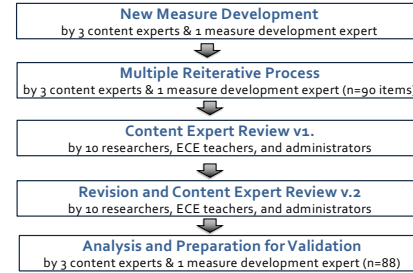


### Method

#### Participants

- 566 teachers were recruited through postings, purchased lists, and contact with professional organizations ( $M = 41.69$ ,  $SD = 12.48$ ).
- Predominantly female (98%) working with children aged from 0-5 in various center-based ECE settings.
- Diverse racial/ethnic and educational backgrounds (15% Hispanic, 10% African American, 4% Indigenous; 50% Bachelor's degree or higher, 22% had an Associate degree, Child Development Associate's or lower).
- The number of years in their current school: less than 0 to 39 years ( $M = 7.87$  years,  $SD = 7.66$ ).
- Household income of less than \$40k per year: 42%

#### Item and Scale Development



#### Validation Analyses

- Item/scale reliabilities analysis** in SPSS 27 to empirically validate the measure
- An Exploratory factor analysis (EFA)** and a **confirmatory factor analysis (CFA)** in Mplus 8 to evaluate overarching dimensions and sub-dimensions of job demands and resources.
- Correlational analyses** in SPSS 27 to evaluate convergent, discriminant, and criterion-related validity.
- Note that we did not include nominal and ratio scale items in the data analyses (e.g., "How many children are served in your classroom?").

### Results and Discussion

#### Domains and Dimensions of Early Childhood Working Conditions Measure

| Domain                 | Resources                                                     | Demands                  |
|------------------------|---------------------------------------------------------------|--------------------------|
| Physical               | Physical Environment                                          | Physical Demands         |
| Cognitive/Professional | Job Control                                                   | Workload                 |
|                        | Opportunity for Professional Growth                           | Job Skill Demands        |
|                        | Effective Communication                                       |                          |
| Social/Psychological   | Social Support from Administrator/Program, Colleagues, Family | Workplace Discrimination |
|                        | Sense of Community                                            | Workplace Conflicts      |
|                        | DEI                                                           | Emotional Demands        |
|                        | Public View and Policy                                        |                          |
| Organizational         | Wage & Benefit                                                |                          |
|                        | Supplies/Staff Support                                        |                          |
|                        | Breaks                                                        |                          |

#### EFA Model For Overall Dimensions

| Dimension              | Optimal Factor Structure | $\chi^2$ | df | RMSEA | CFI   | SRMR  |
|------------------------|--------------------------|----------|----|-------|-------|-------|
| Physical Demands       | One-Factor               | 48.154   | 9  | 0.088 | 0.956 | 0.034 |
| Cognitive Demands      | One-Factor               | 447.572  | 14 | 0.234 | 0.903 | 0.116 |
|                        | Two-Factor               | 23.378   | 8  | 0.058 | 0.982 | 0.023 |
| Social Demands         | One-Factor               | 704.431  | 44 | 0.262 | 0.739 | 0.200 |
|                        | Two-Factor               | 248.855  | 24 | 0.105 | 0.921 | 0.045 |
|                        | Three-Factor             | 76.583   | 25 | 0.060 | 0.981 | 0.020 |
| Physical Resources     | One-Factor               | 39.225   | 9  | 0.077 | 0.959 | 0.035 |
| Cognitive Resources    | One-Factor               | 1393.447 | 65 | 0.390 | 0.690 | 0.135 |
|                        | Two-Factor               | 430.598  | 53 | 0.209 | 0.916 | 0.049 |
|                        | Three-Factor             | 183.246  | 42 | 0.077 | 0.967 | 0.026 |
| Social Resources       | One-Factor               | 1946.427 | 99 | 0.389 | 0.650 | 0.137 |
|                        | Two-Factor               | 717.797  | 76 | 0.122 | 0.883 | 0.061 |
|                        | Three-Factor             | 477.095  | 63 | 0.088 | 0.921 | 0.040 |
|                        | Four-Factor              | 134.371  | 54 | 0.053 | 0.983 | 0.020 |
| Organization Resources | One-Factor               | 816.951  | 51 | 0.158 | 0.819 | 0.087 |
|                        | Two-Factor               | 476.446  | 43 | 0.133 | 0.864 | 0.071 |
|                        | Three-Factor             | 87.989   | 33 | 0.054 | 0.973 | 0.023 |

#### CFA Model Fit Comparisons for Overall Dimensions

| Dimension                 | Model                              | $\chi^2$ | df | RMSEA | CFI   | SRMR  | $\Delta\chi^2$ | $\Delta df$ | $\Delta CFI$ |
|---------------------------|------------------------------------|----------|----|-------|-------|-------|----------------|-------------|--------------|
| Physical Demands          | One-Factor                         | 48.154   | 9  | 0.088 | 0.956 | 0.034 | -              | -           | -            |
| Cognitive Prof. Demands   | Two-Factor                         | 42.370   | 13 | 0.063 | 0.966 | 0.044 | -              | -           | -            |
| Psycho Social Demands     | Three-Factor (Including All Items) | 275.609  | 41 | 0.101 | 0.904 | 0.059 | -              | -           | -            |
|                           | Three-Factor (Excluding Item 8)    | 247.991  | 31 | 0.080 | 0.932 | 0.044 | 198.85         | 10          | 0.017        |
| Physical Resources        | One-Factor                         | 39.225   | 9  | 0.077 | 0.959 | 0.035 | -              | -           | -            |
| Cognitive Prof. Resources | Three-Factor                       | 339.675  | 62 | 0.088 | 0.940 | 0.049 | -              | -           | -            |
| Psycho Social Resources   | Four-Factor (Including All Items)  | 368.739  | 71 | 0.077 | 0.946 | 0.060 | -              | -           | -            |
|                           | Four-Factor (Excluding Item 3)     | 242.265  | 59 | 0.074 | 0.958 | 0.057 | -              | -           | -            |
| Organization Resources    | Three-Factor                       | 153.822  | 51 | 0.060 | 0.949 | 0.047 | -              | -           | -            |

Note:  $\chi^2$  = chi-square statistic; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; CFI = comparative fit index;  $\Delta\chi^2$  = chi-squared difference;  $\Delta CFI$  = CFI difference.

#### Correlations for Convergent Validity

- Organizational climate was positively associated with a variety of individual and organizational outcomes and was negatively associated with job demands and positively associated with job resources.

#### Correlations for Discriminant Validity

- Age was not significantly related to job demand or resource variables.
- Being a female teacher was not significantly associated with job demand or resource variables.
- BMI was not significantly linked to job demand or resource variables with five exceptions, but these were classified as weak.

#### Correlations for Criterion Validity

- All major job demands and resources dimensions were significantly linked to each other and to physical, psychological, and professional well-being and turnover intent with one exception (i.e., no significant correlation between physical demands and job commitment) with varying levels of correlations ( $r = .15$  to  $.49$ ).
- In general, job demand dimensions are negatively correlated with well-being outcomes while job resources are positively correlated with well-being outcomes.

#### Supporting Matching Hypothesis

- Associations between matching dimensions were stronger for physical and psychosocial working conditions and outcomes. We found that psychosocial working conditions are most consistently associated with holistic well-being and turnover intent of early childhood teachers.