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Research Article

Psychological Stress in Adult Learners with Low Literacy

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Abstract

Stress in adult learners is a neglected topic, despite practitioners observing that their adult learners often display psychological discomfort. We address the effects psychological stress has on learning, then define the constructs of stress, trauma, resilience, and psychological distress. Twenty-three adult learners reading at elementary levels completed measures of stress, trauma, resilience, and psychological distress. Procedural details for how we administered the measures to promote feasibility and acceptability in this population are provided. Results indicated that the sample's levels of stress, trauma, and psychological distress were disproportionately high, and levels of resilience were relatively low, compared with the general adult population. Limitations, lessons learned, and practical implications for instructors and administrators are provided.

Keywords: psychological stress; adult learners; literacy; trauma; resilience

Psychological Stress in Adult Learners with Low Literacy

As an adult, the path to improving one's literacy can include a variety of potentially stressful personal and interpersonal challenges. Persistently perceived stress can adversely affect academic learning and performance. Learning-related tasks require adequate working memory, which seems especially imperiled as a function of stress (Beilock, 2008). Strong performance and learning are predicated on effectively managing stress. All learners have the potential to perceive academic challenges as stressful, although some subgroups may encounter additional risk for stress and adverse outcomes. There is considerable evidence confirming the detrimental effects of psychological stress on learning for children, adolescents, and college students (Lantz et al., 2005). When instructors ignore stress, emotions, and mental health of their learners, it can be difficult for learners to benefit from instruction (Eccleston, 2023; Smith, 2010). Although anecdotally adult literacy practitioners share that many of their learners experience stress, anxiety, and depression due to past or current chaos, trauma, or violence in their lives (e.g., Chapman & McHardy, 2019; Horsman, 2000; Johnson, 2018), this group of learners has not been extensively studied in stress research. This article provides initial evidence to help address this gap.

One plausible reason for the dearth of stress research on adults with low literacy is the absence of information about how best to measure psychological stress and related factors with this population. Basic measurement

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information is needed prior to (a) assessing whether adults with low literacy are more psychologically stressed than adults with proficient literacy; and (b) implementing interventions aimed at stress management for adults who have low literacy skills. Without confidence in measuring key targets of interventions to reduce stress, it is impossible to draw inferences regarding their effectiveness.

Our review of the literature indicates that stress measures have been developed and validated with primarily proficient adult reader samples. Therefore, the current study is designed to provide some preliminary information based on popular stress measures when used with adult learners who have low literacy levels. We are particularly interested in the extent of stress, traumatic experiences, resilience and psychological distress that this population experiences. We provide practical information for administering stress-related questionnaires with adult literacy learners, attitudes and pitfalls to avoid, and preliminary analyses on the use of stress measures with this group. Thus, the present study serves to highlight challenges in assessing psychological stress in adult learners, as well as presenting preliminary findings on the degree of psychological stress found with adult learners to help inform interventions most appropriate for this population. In this study, several stress-related assessments were administered to adults who read at elementary levels. The article begins with a brief overview of the aspects of psychological stress of interest for this study, measures to assess each, with a special focus on literature on use of those measures with adults with low literacy, when possible.

Aspects of Stress and Stress Measurement

Perceived Stress

Perceived or psychological stress refers to the appraisal of events or experiences as threatening or challenging given the availability of one's resources to cope with the challenge (Lazarus & Folkman, 1984). For example, psychological stress could be present for an adult learner who has to complete an academic assignment but feels inadequately prepared to perform well on the task. One popular 10-item measure of perceived stress is the Perceived Stress Scale (PSS; Cohen et al., 1983; Cohen & Williamson, 1988). Sharp et al. (2007) examined the PSS with their sample of adults who read at diverse reading levels. Only four of the 10 PSS items could be identified that had at least a minimal association with a stress factor for adults reading at below the 9th grade reading levels, with internal consistency estimates in the marginally acceptable range for the four items. However, two of these four PSS items required 8-10th grade reading levels, meaning that those items might not be accessible to adults reading at lower levels.

Further limiting our understanding of stress measurement for those with low literacy is that a low literacy level has often been used as an exclusion criterion. For example, Shallcross et al. (2015) evaluated the original four-item version of the PSS (PSS-4; Cohen et al., 1983) after excluding adults reading below the 7-8th grade level. Similarly, Bottonari et al. (2010) evaluated the original four-item version of the PSS (PSS-4; Cohen et al., 1983) after excluding participants with less than 6th grade reading levels. Ignoring exclusion criteria and limited item adequacy, average stress scores tend to be one-fourth to one-half of a standard deviation (*SD*) higher for those with lower education levels compared with high school graduates (Bottonari et al., 2010; Cohen & Williamson, 1988).

Trauma

Trauma is an extreme stress-related construct. "Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual's functioning and physical, social, emotional, or spiritual well-being" (Substance Abuse and Mental Health Services Administration, 2014, p. 7). Physical, sexual, or psychological abuse could be considered examples of traumatic experiences. Having some experience with trauma is unfortunately relatively common for all adults (Kilpatrik et al., 2013), although it is important to note that trauma exposure is not equivalent to a diagnosis of post-traumatic stress disorder. Miller-Roenigk and colleagues (2023) sampled 286 adult literacy/adult English language learners (no reading levels provided, average highest report level of education was 11th grade) and found that 56% had some exposure to a traumatic event.

The Post Traumatic Stress Disorder (PTSD) Checklist (PCL-5; Blevins et al., 2015) is a popular measure of psychological

issues associated with trauma. However, some reviewers have raised concerns that the reading level required for the PCL-5 may be above the ability of many adults, possibly requiring 10-13 years of education to comprehend (Wilkins et al., 2011); the Flesch-Kincaid Grade Level is 11.3 for the PCL-5. As best we could determine, the question of suitability of the PCL-5 for adults with low reading levels has not been empirically addressed.

Resilience

The perception and effects of stress can be buffered by overall tendencies to be resilient in response to stress. Resilience refers to personal characteristics and typical coping strategies that help individuals manage difficulties and adversity. Resilience might be evident for a student who, after receiving a disappointing grade on an assignment, considers the situation a learning opportunity and responds by asking the teacher for assistance and additional guidance for improvement on the next assignment. The Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003) is perhaps the most popular resilience measure. The CD-RISC manual indicates that items are at the 5th-grade reading level; the Flesch-Kincaid Grade Level is 5.1 (Davidson & Connor, 2018). There do not appear to have been published studies using the CD-RISC with adult learners with low literacy.

Psychological Distress

According to the APA Dictionary of Psychology (n.d.), psychological distress refers to "a set of painful mental and physical symptoms that are associated with normal fluctuations of mood in most people...It is thought to be what is assessed by many putative self-report measures of depression and anxiety" (n.p.). Examples of depression include distressing and persistent sadness or loss of interest in usually pleasurable activities. Examples of anxiety could include distressed apprehension or worry as well as avoidance of potential anxiety "triggers." Sentell and Ratcliff-Baird (2003) supported the importance of the relationship between reading skill and accurately assessing psychological distress but acknowledged measurement challenges in doing so. They evaluated item content and comprehension of the Beck Depression Inventory (BDI; Beck et al., 1961) in a sample of adults who had reading difficulties; the BDI has items written at the 5th-6th grade level. They found that adults reading below the 6th grade level struggled understanding most BDI items. They noted that some of the same issues detected in item phrasing and content for the BDI also were evident in the more recent version, the BDI-II (Beck et al., 1996). The BDI scales are also relatively long measures of multiple factors, with each of the 21 items consisting of a brief term (e.g., Sadness) or phrase (e.g., Loss of pleasure) followed by four or more sentences to select to represent how one has been feeling over the past 2 weeks. Thus, in the present study, we used the much simpler Kessler Psychological Distress Scale (K6; Kessler et al., 2003), a brief scale tapping a single factor of psychological distress that uses the same response scale for each of its six items. Items also are written at the 4th grade reading level, a reading level suited for adults with low literacy skills.

Purpose of the Study

This exploratory study used slightly revised approaches for measuring stress to determine the suitability of measures and procedures used with adults with low literacy skills. We initially explored the acceptability of completing such measures with adult learners, and the feasibility of administering them in small group settings. Next, we assessed the levels of stress, trauma, resilience, and psychological distress in the adult learners. As already described, previous researchers have referenced low literacy in their samples (e.g., Wisnivesky et al., 2010) or more directly assessed literacy levels (e.g., Sharp et al., 2007). However, prior research has presented very limited descriptions on the average levels of stress, trauma, resilience, and psychological distress in those samples. Therefore, the current study's results are compared to other studies of adults in the general population to determine whether adults with low literacy are more or less stressed compared to other adults described in studies of the general adult population.

Thus, the specific exploratory research questions are:

1. Is it feasible to administer stress-related scales to adult literacy learners?
2. What do the measures tell us about the levels of stress, trauma, resilience, and psychological distress in a sample of adult literacy learners?
3. How do the levels of the adult literacy learners' stress, trauma, resilience, and psychological distress compare to the levels reported in the literature?

Method

Participants

Twenty-three learners attending an adult literacy program in a large Southeastern city participated. Based on the literacy program's administration of the Test of Adult Basic Education (TABE 9/10; see https://www.kansasregents.org/resources/PDF/3088-TABECASASCrosswalk.pdf), they had 5th grade or lower reading levels (M = 419.14, SD = 64.07). Although modest, a sample size of 23 would be adequate to detect statistically significant correlations that were large in magnitude (Cohen, 1992). The learners were primarily female (N = 16, 69.6%) and ranged in age from 27 to 74 (M = 49.30, SD = 12.97). Ninety-six percent identified as Black or African American. Eight participants (34.8%) had graduated from high school and three of the participants (13.0%) reported having a full- or part-time job.

Measures

We adapted instructions and included sample items (unrelated to study constructs) intended to help participants understand the scales, and in addition to providing written format, all items were read verbally (see Procedures).

Perceived Stress Scale

There are different versions and scoring of the PSS that we considered before settling on the subset of items Taylor (2015) identified to measure Perceived Helplessness. Those items are all worded in the same "negative" direction that seem (a) closely aligned with our primary interest in measuring perceived psychological stress, and (b) less likely to be confusing for adult learners than the mixture of positive and negatively worded items comprising the full PSS. Items assess the degree to which respondents perceive stress over the past month (e.g., "How often have you felt nervous and 'stressed'?"). Several other items from the Perceived Helplessness subscale refer to feeling unable to control important things in one's life, difficulty coping with life's demands, and feeling overwhelmed by difficulties as they piled up. Participants respond to items using a five-point rating scale of 0 (Never), 1 (Almost never), 2 (Sometimes), 3 (Fairly often), and 4 (Very Often). Reliability and validity of the Perceived Helplessness scores have been supported in several studies with diverse samples. For example, Soria-Reyes et al. (2023) reported McDonald's Omega [ω] = 0.87 and Tay (2021) reported Cronbach's coefficient alpha = 0.87 as reliability estimates for the Perceived Helplessness subscale. However, some research also has raised questions about most of the PSS items when used with adults with low reading abilities (Sharp et al., 2007).

Post-Traumatic Stress Disorder Checklist- Civilian Version, Abbreviated

The abbreviated PCL-C consists of two items that correspond to the dominant symptoms of PTSD: (1) "In the past month, how much have you been bothered by repeated disturbing memories, thoughts, or images of a stressful experience from the past?" and (2) "In the past month, how much have you been bothered by feeling very upset when something reminded you of a stressful experience from the past?" Items are rated from 1 (Not at all) to 5 (Extremely). Evidence supports high reliability and validity of PCL-C scores (Lang & Stein, 2005). As noted earlier, exposure to trauma and self-reported symptoms associated with PTSD are not equivalent to a PTSD diagnosis. Such information is useful in screening for further evaluation. Importantly, studies directly evaluating the PCL-C for adults with significant reading challenges have, to our knowledge, not been reported.

Connor-Davidson Resilience Scale

The 10-item version of the CD-RISC contains items aimed at measuring "bounce-back" and adaptability over the past month (e.g., being "able to adapt to change"). Possible responses to items range from 0 (Not True at All) to 4 (True Nearly All of the Time). In general adult samples, scores have shown strong reliability and validity (e.g., Campbell-Sills & Stein, 2007). To date, studies using the CD-RISC with adults who have very low levels of literacy do not appear to have been published.

K6 Psychological Distress Scale

The K6 is a 6-item inventory that measures global psychological distress, gauged by asking questions related to depressive and anxiety-related symptoms over the past 4 weeks (e.g., "During the past month, about how often did you feel nervous?"). The K6 can be used as a screening scale for "mental illness in health risk appraisal surveys and primary care screening batteries" (Kessler et al., 2002,

p. 974). Responses range from 1 ("None of the Time") to 5 ("All of the Time"). Research supports the reliability and validity of K6 scores across a variety of contexts and populations (Kessler et al., 2003). That said, we were unable to locate research in which the K6 was evaluated for use with adults who have significant reading difficulties.

Procedure

After the study was approved by the university's institutional review board, learners were recruited from an adult literacy center in a large Southeastern city. Participants provided permission for investigators to access their TABE scores from the adult literacy program. Prior to the start of data collection, all research assistants received training in test administration, adult literacy sensitivity, how to monitor learners, and how to respond in a consistent fashion to participants' comments or questions. Forty-five-minute sessions were conducted with separate small groups of students (6-10 in a group) in classrooms within the center. Classrooms consisted of chairs and tables, and learners were seated in every other chair during the sessions to help protect privacy (i.e., there was one empty chair between each pair of learners). Each of the sessions involved oral administration of self-report questionnaires in one of three different sequences to control for order effects. Learners completed the questionnaires by circling their response ratings on hard copy versions of the questionnaires as they followed along with the oral administration. Depending on the session, there were 3-5 additional research assistants who monitored learners to ensure they were adequately following along and answering the right items. At the conclusion of a data collection session, each learner received $10 compensation for participation.

Data Analysis

To explore the acceptability and feasibility of the measures, we critically considered the measures, administration adaptations, and participant responses (e.g., questions and related dialogue) and responsiveness (e.g., attentiveness, survey completion) to the procedures. To gauge acceptability in a more quantitative manner, we followed recommendations to evaluate the quality of the data (e.g., Curran, 2016). For example, we conducted long-string analysis on the 10-item CD-RISC to help locate possible identical response sequences for items (i.e., despite different item content, six or more of the responses to the 10 items were the same). To detect outliers, we followed Iglewicz and Hoaglin's (1993) recommendations and used a modified Z-score approach based on the median absolute deviation of scores for each of the scales or subscales. This approach is particularly useful with small sample data. Finally, descriptive analyses were conducted to describe participants' responses and sample descriptive statistics were compared with other larger scale studies of adults to determine the comparative levels of stress, trauma, resilience, and psychological distress with this sample.

Results

Research Question 1: Is it feasible and acceptable to administer stress-related assessments to adult literacy learners?

Feasibility and Acceptability

There were several considerations regarding feasibility to administer these assessments to adult literacy learners. All the scales used in the current study were adaptable for this population in part because they relied on minimal procedures typically used for self-report questionnaires (i.e., no strict standardization for administration). They also measured content familiar to the participants, such as stress and resilience, although the content of some measures posed challenges with the administration (e.g., difficulty understanding words). In short, feasibility was supported but required additional structures and supports for the learners.

Administering the questionnaires in small group settings required one researcher to lead each session and a small group of research assistants to respond to participants' questions. Adult learners seemed to respond well to our administration. Reading was not an issue for our participants because the session leader verbally explained all directions and read out loud each item and response option. Based on their attentiveness, task involvement, and questions, they seemed to benefit from the session leader reading the directions and items. They also seemed to benefit from having other research assistants in the room because they frequently raised their hands when they needed individual assistance with any questions or issues. They also acknowledged clearer understanding

when the research assistants provided assistance. All participants remained for the duration of their scheduled session, and none submitted an incomplete survey. These qualitative impressions suggested reasonable acceptability of the procedures. Due to a concern that some of our participants may not understand the different scales used on each measure before each assessment, we included example items that had been designed by the researchers to teach participants how to use the rating scales. An example item instructed participants to report how often they brushed their teeth, with item responses of "I never do this," "I do this a little," "I do this a medium amount," and "I do this a lot." To our surprise, instead of providing clarification, this seemed to confuse them with participants reporting misunderstanding why they were being asked these types of questions.

Quantitatively, our long-string analysis on the 10-item CD-RISC indicated that responses from only two participants revealed problematic response patterns. Because their responses were varied on the other questionnaires, their item responses for those measures were retained but responses on the CD-RISC were set to missing values. Based on Iglewicz and Hoaglin's (1993) criteria, none of the participants had additional outlier values for any of the questionnaires. In sum, based on behavioral observations and data quality, feasibility and acceptability were supported with most participants responding appropriately to the procedures and measures.

Research Question 2: What do the assessments tell us about the levels of stress, trauma, resilience, and psychological distress in a sample of adult literacy learners?

Table 1 reports the sample means (*M*s), standard deviations (*SD*s), and correlations between the scores.

PSS Perceived Helplessness

The possible range of scores was 0 to 24 and scores in this sample ranged from 3 to 22. The average score was 12.82 (*SD* = 5.60) and the median was 15.00. The scores tended to reflect moderate levels of perceived stress. The variability with scores (*SD*) was only slightly higher than reported in other studies (e.g., Taylor, 2015).

PCL-C Trauma

The possible and actual range of scores were the same (2 to 10). The average was 6.18 (*SD* = 2.44) and the median was 6.50. Thus, there was a tendency in this group to report being bothered by memories and reminders of past stressful experiences.

CD-RISC Resilience

The average score was 20.44 (*SD* = 8.80), with a median of 20. The sample range of scores was 1 to 36, generally consistent with the possible range of 0 to 40. Overall, there was a tendency for participants to report relatively low levels of coping resources and resilience to stress. Furthermore, there was more variation in scores compared to *SD*s reported in several other community samples (see Davidson & Connor, 2018).

K6 Psychological Distress

The average score was 10.33 (*SD* = 6.58), with a median of 9.00. In this sample, scores ranged from 0 to 21, consistent with the possible range of 0 to 24. Overall sample results were consistent with acknowledging some modest extent of psychological distress. In general, the descriptive statistics indicated that, although the sample was relatively small, scores tended to represent nearly the full range of possible scores. Stress and resilience were relatively high whereas psychological distress was more modest,

TABLE 1: Scale and Subscale Means, Standard Deviations, and Correlations

Scale/Subscale	M (SD)	1	2	3	4
1. PSS Perceived Helplessness	12.82 (5.60)	1.0			
2. PCL-C Trauma	6.18 (2.44)	.56*	1.0		
3. CD-RISC Resilience	20.44 (8.80)	.35	.16	1.0	
4. K6 Psychological Distress	10.33 (6.58)	.61*	.65**	-.04	1.0

Note. *N* = 23, pairwise *N* ranged from 19 to 22.
* p < .01; ** p < .001; one-tailed test.

possibly due to the mix of different psychological distress indicators on the K6.

Correlations

Correlations between the scores also are displayed in Table 1. Several results were consistent with what would be expected. For example, relatively large correlations indicated that people who reported high levels of perceived stress (helplessness) also tended to report being troubled by past traumatic experiences ($p = .004$) and were likely to report higher levels of psychological distress ($p = .002$). Alternatively, those reporting low levels of stress were also likely to report low likelihood of past trauma and less psychological distress. Another strong and positive correlation indicated that those who reported a high likelihood of past trauma also reported relatively high levels of current psychological distress ($p < .001$). One curious correlation was the moderate but positive association between CD-RISC resilience and stress. Although that correlation was not statistically significant ($p = .082$), this trend effect could suggest that some participants who were reporting stress might also report having some degree of resilience to difficulties. A scatterplot confirmed that general trend. It is possible that participants in this sample could feel stressed, possibly from current life challenges as well as prior difficulties, and having reached the point of being in an adult education program, they also can attest to their coping and resilience resources. Again, however, the level of those resources was not high, and the correlation was medium in effect size but not statistically significant; the association simply suggests a possibility that people with high stress were also those in this sample who had relatively higher levels of resilience compared with others.

The correlation between CD-RISC (resilience) and K6 (psychological distress) was also curious. The scatterplot of scores suggested no clear pattern between resilience and psychological distress. Some of the participants reported relatively low resilience (e.g., *M* minus 1*SD*) and high psychological distress (e.g., *M* plus 1*SD*), but some others reported relatively high resilience (e.g., *M* plus 1*SD*) and high psychological distress. Among those who reported moderate (near average) resilience, some had high psychological distress but others in this sample had low psychological distress (e.g., *M* minus 1*SD*). There was simply no clear pattern in the association between the two scores.

Research Question 3: How do the levels of the adult literacy learners' stress, trauma, resilience, and psychological distress compare to the levels reported in the literature?

Participants' average scores were compared with several other studies that had information about stress, trauma, resilience, and psychological distress.

Perceived Stress

The current sample's average stress level as measured by the Perceived Helplessness items, and adjusted for item length for comparisons, was approximately 1*SD* higher than the average obtained from a large survey of adults (Cohen & Williamson, 1988). In that survey, results based on subsample analyses of participants with low income, education level, race, and gender were also reported. When converted to be on the same scale based on the number of items, the current sample's average Perceived Helplessness score was higher by about one-half *SD* compared to the highest average level of stress reported in those subsamples. In sum, the current sample was considerably more stressed than the other samples measured by Cohen and Williamson. Of course, it is possible that had Cohen and Williamson conducted their study today, they would also find higher average levels of stress in their samples. Further research is warranted.

Trauma

Based on scoring recommendations (Lang et al., 2012), approximately 77% of the current study screened positive for potential PTSD. This is a high rate of possible trauma in a sample. More careful evaluation would be required to determine if those who screened positive in this sample met criteria for a diagnosis of PTSD. Although Lang et al. (2012) reported extremely high rates of sensitivity based on the cutoff score used with the PCL-C, those results were based on an already diagnosed sample of patients with PTSD. If other future research supports the rate observed in this sample, based on the National Comorbidity Study (Harvard Medical School, 2007), results suggest over a 10x greater risk for PTSD in this sample compared with lifetime prevalence in the general population (7%).

Resilience

Nugent et al. (2012) studied African American adults who had reported exposure to trauma consistent with

diagnostic criteria for PTSD. Specific literacy levels were not reported. However, Nugent et al. acknowledged that, "Due to variable participant literacy, all self-report measures were administered through verbal interview" (p. 1577), similar to procedures used in the current study. Furthermore, their sample was gathered in the same metropolitan area as the current sample, through clinics affiliated with a local public hospital that serves a large number of African American and low-income patients (40% of patients are unable to pay or are uninsured). Their sample average for the CD-RISC was 80.84, which would convert to 32.34 for the 10-item version of the CD-RISC completed by our sample. In the current study, the sample average was 21.86 or more than a full *SD lower* than the sample results for Nugent et al. According to the test manual, scores below 26 on the 10-item scale are below the cutoff for the 25th percentile of scores (Connor & Davidson, 2003); the current sample's average was about one-half *SD* lower than that cutoff. This means that the current sample had a very low level of self-reported resilience when dealing with difficult situations or stressors.

Psychological Distress

Using K6 cutoff criteria (13 or greater; Kessler et al., 2010), about 31% of the current sample would be at-risk for serious mental illness. The sample rate in this study is about four times the national prevalence rate for adults (Brody et al., 2018). Similar to PTSD, however, diagnosis of depression or other mental illnesses would require more careful evaluation than can be accomplished with a screening instrument. Nevertheless, these possible rates for psychological difficulties should be a cause for concern, especially regarding how psychological distress can interfere with learning.

Discussion

The current study represents an in-depth, critical evaluation of common scales used to measure stress, trauma, resilience, and psychological distress and extends prior work with an intentional focus on adult learners with low levels of literacy. Our initial qualitative review of scale directions, response options, item content, and participant behavior during data collection leads us to conclude that it would have been ill-advised to simply ask this sample to read the questionnaires and respond to the items. Although in some cases, the measures used in the present study required a higher reading level than was suggested by the participants' TABE scores (e.g., PCL-5 = 11.3 grade level), we found that oral presentation of most of the measures worked reasonably well with the study sample. We did learn one surprising lesson. To enhance acceptability, instructions for each scale were modified to include sample items. While we had believed the example questions would be helpful, participants appeared to be confused about the context or relevance of the examples (e.g., how much do you like cookies). As a result, future studies might eliminate example items when administering these scales, or perhaps consider other options for orienting participants to questionnaire administration.

Although we did not test empirically conditions that may have improved comprehension of the questionnaires, we employed various techniques to facilitate valid questionnaire responses that we recommend to other researchers who want to replicate our work. Each scale's instructions, examples, items, and response options were read aloud to the participants. Between two and four research assistants were available during survey administration to answer individual questions. Participants raised their hands and quietly asked their questions, which promoted discretion, confidentiality, and safety in vulnerably asking questions. Although this approach increased researcher burden, the modifications likely enhanced acceptability of the adult learners and facilitated data collection from a larger group of participants. Further, before data collection, research assistants completed training that emphasized the importance of promoting autonomy and dignity of all study participants. Due to the nature of the scale items, we understood that participants may feel vulnerable or uncomfortable participating in this study, and therefore consistent with ethical principles in conducting research, we stressed their autonomy in making decisions, and ensured that they understood the study sufficiently to give informed consent. Through additional training of researchers prior to study implementation, we also encouraged our research team members to (a) consider potential personal biases and assumptions about adult literacy learners of color, (b) self-reflect, and (c) embrace an attitude of respect and gratitude for research participants.

Despite adjustments to test administration, at times, participants had apparent difficulties with item comprehension or more fundamentally, how to appropriately rate their response to an item. Indeed, one consideration for future studies would be to include a follow-up session in which participants could be queried regarding their understanding of the items.

Practical Implications

Results provide preliminary empirical evidence that supports adult literacy practitioner reports that many of their learners appear to experience high levels of stress, anxiety, and depression (e.g., Horsman, 2000; Johnson, 2018). As policy makers and researchers attempt to create and implement curricular modifications to facilitate an increase in adult foundational academic skills, more attention is warranted on the psychosocial needs of the adult literacy learner population. There is considerable evidence confirming the detrimental effects of psychological stress on learning for children, adolescents, college students, and people with low socioeconomic status (Lantz et al., 2005). It is possible that high psychological stress for some adult literacy learners is resulting in detrimental effects on their ability to learn from instruction (Chapman & McHardy, 2019). More research is necessary to confirm this impact.

Just over three-fourths of the sample had scores on the PCL-C in the range for possible PTSD. The elevations for this sample could be alarming given that Lang et al. (2012) reported extremely high rates of sensitivity based on the PCL-C cutoff. However, several cautionary notes should be considered. Lang and Murray (2005) found a relatively high rate of false positive PTSD diagnoses resulting from cutoff scores on the 2-item PCL-C. Moreover, Lange et al. (2012) were unable to evaluate specificity rates based on PCL-C cutoffs because their sample only contained patients diagnosed with PTSD. Thus, replication of this finding is warranted, and more careful evaluation would be required to determine if adult learners who screen positive would meet diagnostic criteria for PTSD (Blake et al., 1990).

Individuals who have experienced trauma need support (Grad et al., 2022). Miller-Roenigk and colleagues (2023) recommend that adult education programs should learn from the increasing "trauma-informed" program movement outside the adult education field, such as in K-12 educational contexts and clinical care settings (Cafaro et al., 2023; Fernández et al., 2023). Wartenweiler (2017) discusses the importance of creating "safe learning spaces" for adults who experience/d trauma, and Johnston (2018) specifies different classroom activities that can help those adults who because of trauma have difficulty learning. Grad and colleagues (2022) suggest that all learners would benefit from screening for trauma and referrals for trauma support. The brevity of the PCL-C scale combined with the potential for PTSD in this sample suggest it would seem reasonable to incorporate a brief screening and then referral process for adult learners who screen positive based on the PCL-C. Grad and colleagues (2022) also emphasize the need for teachers to be taught about trauma's impact on learning. We would like to add that adult literacy programs would benefit from a strong connection with clinicians who are willing to work pro bono or see clients on a sliding scale.

The need for, and potential value of, particular stress management interventions can be derived from our results involving the perceived helplessness aspect of psychological stress combined with comparatively low levels of resilience and high levels of psychological distress. Indeed, several items from the Perceived Helplessness subscale refer to feeling unable to control important things in one's life, difficulty coping with life's demands, and feeling overwhelmed by difficulties as they seem to pile up. Future research is needed to explore whether training in life skills, time management, and problem- as well as emotion-focused coping strategies would seem likely to strengthen resilience and counteract helplessness-related psychological stress. Such training will need to be tailored to the life situation of many adult learners and likely should include concrete, realistic applications for practicing new skills.

Limitations

Although power analyses indicated that our sample was sufficient for analyses, the sample was small in number and therefore results can only be considered preliminary; we encourage others to collect further data with adult literacy learners. In addition, learners were recruited from a single adult literacy program in a particular geographic area, and both of those issues raise concerns about generalizability. A similar generalizability limitation involved

the sample of mostly Black/African American women; future research should expand recruitment and settings to include broader racial/ethnic participation. Of course, participation in research is based on those who volunteer, and such individuals might be different from those who choose not to volunteer.

We also made substantial changes to measures that ordinarily are administered as self-report questionnaires with items that participants read and rate. Although data were evaluated for quality of item responses (Curran, 2016), the changes in scale administration could raise concerns regarding the validity of the obtained scores. However, we reasoned that score validity concerns would be substantially exacerbated if respondents with low levels of reading skills were left on their own to read and rate the items without verbal instructions and additional supports.

General Conclusions

Overall, results indicate that with proper instruction and adaptation, adult literacy learners can be orally administered the types of tests described in this article. Such results provide an initial picture of the stress levels of a population of learners who typically are left out of this type of research. Compared with other adult samples in the literature (e.g., Cohen & Williamson, 1988), the tested sample in general showed higher levels of stress, trauma, and psychological distress, as well as lower levels of resilience. However, more research is needed with larger samples in order to assess the validity and reliability of these tests for this particular population. Future research is warranted to isolate appropriate measures for this group so that a deeper understanding of the adult literacy learners' psychosocial well-being is apparent. Results from those studies can influence measure creation, intervention adoption, and specific adult educator strategies in the literacy classroom.

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