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Validating the Job Satisfaction Survey in voluntary child welfare

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ABSTRACT

Job satisfaction has been linked to workforce retention in child welfare agencies. One of the most widely used measures on job satisfaction is the Job Satisfaction Survey (JSS). Although it was validated among workers of public social service agencies, its psychometric properties remain untested in workers of voluntary (private, nonprofit) child welfare agencies. Using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), this study aims to examine the reliability and validity of the JSS in frontline child welfare workers in voluntary agencies. The sample was randomly split into two subsamples for factor analyses. Based on Sample 1 (N = 343), the EFA yields a six-factor structure with 23 items: 1) pay, 2) supervision, 3) promotion, 4) benefits, 5) communication, and 6) nature of work. Using Sample 2 (N = 358), the CFA confirms that the six-factor model fits the data well. Except for the communication subscale, the other five subscales have good internal consistency reliability, convergent validity, and discriminant validity. The five subscales also have good criterion validity in that they are strongly correlated with both intent to stay in child welfare and intent to leave the current agency. These findings suggest a short-form version of the JSS (JSS-SF) with 19 items loading on five subscales, which can be used to measure job satisfaction among voluntary child welfare workers. Directions for future research and implications for voluntary child welfare agencies are discussed.

1. Introduction

Many child welfare agencies face high turnover rates. The national turnover rate was estimated to be 30% to 40% each year, and the average tenure for child welfare workers was less than two years (GAO, 2003). The turnover rate of private agencies was higher than public agencies: 40% and 20% respectively (Annie E. Casey Foundation, 2004). Moreover, it takes a long time to fill vacant positions. According to a national survey (American Public Human Services Association [APHSA], 2005), in 2003, it took 7 weeks to fill a vacancy for in-home protective services; 10 weeks for child protective services; 13 weeks for foster care and adoption.

High turnover can have negative impacts on both clients and the agency. Frequent staff turnover can expose clients to inexperienced workers, and compromise their permanency and well-being outcomes. In a review of turnover in private child welfare agencies in Milwaukee County, the authors (Flower, McDonald, & Sumski, 2005) reported that the turnover among case management staff was associated with lower permanency rates. Specifically, the permanency rate was 74.5% for cases with one case manager, 17.5% for the ones with two case managers, and even lower for the ones with more than two case managers. Many clients in the child welfare system experience trauma from as a result of child abuse and/or neglect. Consequently, they may be psychologically sensitive to disruptions to newly formed relationships, including their relationship with case managers. When they experience staff turnover, they may grow mistrust with the system. Regarding the agency, staff turnover is costly in terms of financial and human resources. For example, the Texas Department of Family and Protective Services estimated that each caseworker turnover cost the agency $54,000, partly due to recruiting and training new workers (Sunset Advisory Commission, 2014). Regarding the personnel aspect, high turnover could prevent agencies from fostering experienced workers, which eventually could reduce organizational effectiveness and employee productivity (Pryce, Shackelford, & Pryce, 2007).

A number of factors have been found to contribute to high turnover among child welfare agencies. These include individual factors, agency factors, policy, and other environmental factors. Some examples of the environmental factors are increasing paperwork, high caseloads, and challenging clients. Many children in the child welfare system have mental and behavioral problems (Horwitz et al., 2012) and can be challenging to work with. Although these factors are often beyond the agency's control, factors at agency and individual levels are generally manageable, and can help to reduce turnover. As estimated in a national study (Alliance for Children and Families, APHSA, & Child

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Welfare League of America, 2001), about 60% of turnover in child welfare is preventable.

Job satisfaction is one of the agency factors that may be manageable (Auerbach, McGowan, Ausberger, Strolin-Goltzman, & Schudrich, 2010; McGowan, Auerbach, Conroy, Augsberger, & Schudrich, 2010; Schudrich et al., 2012; Mor Barak, Nissly, & Levin, 2001). Most instruments of job satisfaction were developed using heterogeneous samples or the samples from health care professionals (Saane, Sluiter, Verbeek, & Frings-Dresen, 2003). To date, the Job Satisfaction Survey (JSS; Spector, 1985) remains the only instrument developed for the human services sector. This study aimed to examine the reliability and validity of the JSS in voluntary child welfare workers.

1.1. Measures of job satisfaction

A variety of job satisfaction instruments have emerged in the past few decades. The instruments vary in their number of items and target populations. Most instruments contain multiple items in multiple domains, while some contain only one item in each domain. To compare single-item and multiple-item measures, Wanous, Reichers, and Hudy (1997) conducted a meta-analysis of 17 studies including 7682 participants, and reported that respondents' overall score on the single-item measure was highly correlated with their score on the multiple-item measure. Building on Wanous et al. (1997), Nagy (2002) recruited 207 respondents from a variety of organizations to compare the five domains of the Job Descriptive Index (JDI) with their corresponding single-item measures. The author reported that respondents' score on each single-item measure was significantly correlated with their score on the corresponding domain of the JDI (correlation coefficients ranged from 0.60 to 0.72).

Saane et al. (2003) conducted a systematic review of all psychometric studies on job satisfaction published in English or Dutch between 1988 and 2001. Among 29 instruments, eight were for heterogeneous professionals, while the rest targeted one specific profession, such as nurses, social services professionals, teachers, and physicians. The authors reported that only seven of the 29 instruments met their defined criteria for reliability and validity. The JSS, the focus of the current study, was one of them. In their review, the authors identified 11 important domains of job satisfaction: work content, autonomy, growth/development, financial rewards, promotion, supervision, communication, co-workers, meaningfulness, workload, and work demands. Of all instruments studied, only one instrument covered all 11 domains. It was the Measure of Job Satisfaction (Traynor & Wade, 1993), which was developed among community nurses in the United Kingdom.

1.2. The Job Satisfaction Survey

Developed for the human services sector, the JSS (Spector, 1985) contains 36 items in nine subscales: salary, promotion, supervision, benefits, contingent rewards (performance-based rewards), operating procedures (required rules and procedures), co-workers, communication, and nature of work (meaningfulness of work). The original study on its psychometric properties (Spector, 1985) collected data of 3149 respondents from various human service agencies, both public and nonprofit. His study indicated that the JSS had satisfactory reliability, with a reliability score of 0.91 for the whole scale, reliability scores over 0.70 for all but two subscales, and a test-retest (after 18 months) correlation co-efficient of 0.71. As for validity, he concluded that the JSS subscales had good convergent validity and discriminant validity based on the strong correlations between the common subscales of the JSS and the JDI. Using four different criterion variables (actual turnover, organizational commitment, perceived job characteristics, and absenteeism), he demonstrated that the criterion validity of the JSS was adequate.

Although developed for the human services sector, the JSS has been used in studies among industrial workers (Bruck, Allen, & Spector, 2002; Hwang & Der-Jang, 2005) and workers in general office settings (Dravigne, Waliczek, Lineberger, & Zajicek, 2008). Nevertheless, it has been mainly used to study job satisfaction among human service workforce such as college librarians (Sierpe, 1999), hospitality employees (Silva, 2006), nurses (Khamisa, Oldenburg, Peltzer, & Ilic, 2015), and workers of residential facilities for adults with intellectual disabilities (Chou, Kröger, & Lee, 2010). Child welfare researchers have used the JSS among both public and private child welfare workers (e.g., Auerbach et al., 2010; Claiborne, Auerbach, Lawrence, & Schudrich, 2013; McGowan et al., 2010; Schudrich et al., 2012; Strand & Dore, 2009). In these studies, the authors often used the composite scores of the whole JSS and its subscales to study job satisfaction and its correlates. However, they have not used factor analyses to examine the reliability and validity of the JSS.

In fact, few empirical studies have examined the psychometric properties of the JSS despite its wide use in job satisfaction research. Other than the original validation study (Spector, 1985), we did not find any U.S.-based studies that aimed to validate the JSS. However, psychometric studies on the scale are available using non-U.S. samples. These studies were conducted among secondary school teachers in Lithuania (Astrauskaite, Vaitkevicius, & Perminas, 2011), health workers in public facilities in Nepal (Batura, Skordis-Worrall, Thapa, Basnyat, & Morrison, 2016), corporation workers in India (Takalkar & Coovert, 1994), and primary school teachers in Uganda (Ibrahim Abaasi, 2016).

Two studies in the non-U.S. countries did not find the original JSS applicable to their samples (Astrauskaite et al., 2011; Ibrahim Abaasi, 2016). Using a sample of 346 teachers in Kaunas, Lithuania, Astrauskaite et al. (2011) reported that the Bollen-Stine bootstrap p value of the original nine-factor model was 0.001 ($p = 0.05$ or greater indicates good fit). Their final model which had good fit included 12 items loading on three factors: promotion, supervision, and nature of work. Similarly, studying a sample of 247 primary school teachers, Ibrahim Abaasi (2016) found poor fit for the nine-factor model ($p > 0.05$; GFI = 0.66; TLI = 0.70; CFI = 0.76). Their analyses yielded a good fitting model with nine items loading on four factors: promotion, supervision, benefits, and nature of work.

1.3. The current study

To fill the gaps in the literature, the current study aimed to validate the JSS in the voluntary child welfare workforce in the United States. Specifically, we examined the internal consistency reliability, convergent validity, discriminant validity, and criterion validity of the JSS in a sample of child welfare workers in voluntary (i.e. private nonprofit) agencies.

2. Methods

2.1. Sample and data collection

A total of 701 child welfare workers employed in 13 voluntary agencies in a large northeastern state were included in the present study. Voluntary agencies are defined as private agencies that contract with the public child welfare system to provide services such as foster care. Agencies were selected from rural, suburban, and urban locales of the state to account for the diversity that these workers had. Although administrators, administrative support staff, and other workers participated in the original study, we included only direct care and clinical workers in this study because they tended to have the highest turnover rate. The largest ethnic/racial group was White (67.47%), followed by African-American (19.06%), Hispanic (4.99%), and other (8.48%). The majority of the respondents were female (64.23%), had a college degree or higher (60.16%), and held a child welfare job for the first time (61.16%). The respondents reported an average age of 34.79 (SD = 12.04).

Table 1
Items and subscales of the job satisfaction survey.

#	Subscale	Item
1	Pay	*I feel I am being paid a fair amount for the work I do.
2	Promotion	*There is really too little chance for promotion on my job.
3	Supervision	*My supervisor is quite competent in doing his/her job.
4	Benefits	*I am not satisfied with the benefits I receive.
5	Contingent awards	When I do a good job, I receive the recognition I should receive.
6	Operating procedures	Many of our rules and procedures make doing a good job difficult.
7	Co-workers	I like the people with whom I work.
8	Nature of Work	I sometimes feel my job is meaningless.
9	Communication	Communications seem good within this organization.
10	Pay	*Raises are too few and far between.
11	Promotion	*Those who do well on the job stand a fair chance of being promoted.
12	Supervision	*My supervisor is unfair to me.
13	Benefits	*The we receive are as good as most other organizations offer.
14	Contingent awards	I do not feel that the work I do is appreciated.
15	Operating procedures	My efforts to do a good job are seldom blocked by red tape.
16	Co-workers	I find I have to work harder at my job than I should because of the incompetence of people I work with.
17	Nature of work	*I like doing the things I do at work.
18	Communication	The goals of the organization are not clear to me.
19	Pay	*I feel unappreciated by the organization when I think about what they pay me.
20	Promotion	*People get ahead as fast here as they do in other places.
21	Supervision	*My supervisor shows too little interest in the feelings of subordinates.
22	Benefits	*The benefit package we have is equitable.
23	Contingent awards	There are few rewards for those who work here.
24	Operating procedures	I have too much to do at work.
25	Co-workers	I enjoy my co-workers.
26	Communication	I often feel that I do not know what is going on in the organization.
27	Nature of work	*I feel a sense of pride in doing my job.
28	Pay	*I feel satisfied with my chances for salary increases.
29	Benefits	*There are benefits we do not have which we should have.
30	Supervision	*I like my supervisor.
31	Operating procedures	I have too much paperwork.
32	Contingent awards	I don't feel my efforts are rewarded the way they should be.
33	Promotion	*I am satisfied with my chances for promotion.
34	Co-workers	There is too much bickering and fighting at work.
35	Nature of work	*My job is enjoyable.
36	Communication	Work assignments are often not fully explained.

Note. *Items validated in this study.

Paper-and-pencil survey data were collected at different sites throughout the state from 2009 to 2011. To boost the response rate, a research team member visited these sites to collect the questionnaires upon their completion. This resulted in a relatively high response rate (70%). This study was approved by the Institutional Review Boards of the first author's doctoral institution and another collaborating university.

2.2. Measure

Originally developed to measure job satisfaction among human service workers (Spector, 1985), the JSS contains 36 Likert-type scale items. One exemplary item is that "I feel I am being paid a fair amount for the work I do." Spector (1985) validated nine JSS subscales: pay, promotion, supervision, benefits, contingent rewards, operating procedures, co-workers, nature of work, and communication (see Table 1 for all the items and subscales of the survey). The answers to the original JSS items ranged from 1 (disagree very much) to 6 (agree very much); however, we used a four-point scale ranging from 1 (strongly disagree) to 4 (strongly agree).

To test the criterion validity of the JSS, we included two criterion measures that are associated with job satisfaction in our analysis: intent to stay in child welfare and intent to leave the current agency. Referring to the individual's likelihood of remaining in child welfare practice, the first measure consisted of three items derived from Landsman's (2001) study. These items were: (1) "I plan to stay in child welfare practice as long as possible;" (2) "Under no circumstance will I voluntarily leave child welfare;" and (3) "I plan to leave child welfare as soon as possible." The answers ranged from 1 = strongly disagree to 5 = strongly agree. Item 3 was reverse coded and a composite mean score of all items was calculated so that a higher score indicates higher intent to stay in child welfare. The Cronbach's α reliability score of this index was 0.76 in our aggregate sample of 701 voluntary child welfare workers.

The second measure which assessed intent to leave the current agency was adapted from the Intent to Leave Child Welfare Scale (Auerbach, Schudrich, Lawrence, Claiborne, & McGowan, 2014). The scale begins by asking the respondents whether they considered looking for a new job within the past year. If the answer was yes, respondents were asked to answer eight additional questions related to job-seeking behavior. In Auerbach et al.'s (2014) study, these questions constituted three subscales: looking, acting, and thinking. We included two subscales in our study: looking and acting (Thinking was not included because it had two items). Looking included three items (e.g., "How often have you looked in the paper for a new job?"), all of which were answered on a five-point Likert scale ranging from 1 = almost never to 5 = almost everyday. Acting was also composed of three items (e.g., "How many phone inquiries have you made about other jobs?"). Possible responses were none, 1–2, 3–4, 5–6, and > 6. For each subscale, a composite mean score was computed to indicate the level of intent to leave the current agency. In our aggregate sample (N = 701), the Cronbach's α reliability score was 0.86 and 0.89 for the looking subscale and the acting subscale, respectively.

2.3. Analysis strategy

The sample was randomly split into two subsamples for the exploratory factor analysis (EFA) and the confirmatory factor analysis (CFA), respectively. The two samples were equivalent in terms of all the main study variables. Sample 1 (N = 343) was used for the EFA, which was necessary primarily because our sample included child welfare workers in voluntary agencies. Previous researchers have rarely examined the psychometric properties of the JSS among child welfare workers, let alone private child welfare workers. The original JSS was validated in a broader context (i.e., the human service sector) and most of the participants were public employees (Spector, 1985).

We used robust maximum likelihood (MLR) as the factor extraction method and geomin (i.e., a type of oblique rotation) as the rotation method. Goemin was used to allow factor correlations. The number of factors was predetermined as nine, which was consistent with the original factor structure identified by Spector (1985). Only items with a factor loading of 0.40 or greater were deemed to load on a factor (Ferguson & Cox, 1993). To deal with cross loadings, we followed the recommendations by Ferguson and Cox (1993): If an item loaded on two or more factors with a loading difference ≤ 0.20, then we removed it and re-ran the processes of extraction with it removed; if the difference was > 0.20, then we allowed the item to load on the factor for which it had the highest loading.

Sample 2 (N = 358) was used to conduct the CFA. MLR was used as the estimation method in consistency with the EFA. The chi-squared value for the overall model fit was considered but other fit indices were assessed given the sensitivity of χ^2 in large samples (Kline, 2010). These indices included the comparative fit index (CFI), the Tucker–Lewis

index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). As suggested by Hu and Bentler (1999), a cutoff value of 0.90 and 0.95 indicates reasonable and close fit for the CFI and the TLI, respectively. They also recommended a cutoff value of 0.08 for SRMR for reasonable fit. RMSEA values of 0.05 and 0.08 represent good and moderate fit, respectively (Browne & Cudeck, 1992).

We also used Sample 2 for the reliability and validity tests. To examine the internal consistency reliability of the JSS, we reported Cronbach's α of the total scale and each subscale. Using procedures recommended by Fornell and Larcker (1981), we calculated average variance extracted (AVE) and composite reliability (CR) to test the convergent and discriminant validity. It has been suggested that the use of AVE and CR is advantageous comparing to the correlation method because measurement errors are adjusted for in the former approach (Brown, 2006). As for criterion validity, we computed the correlations between each JSS subscale and intent to stay in child welfare and intent to leave the current agency. Data were analyzed in Stata version 13.0 and Mplus version 7.4. Specifically, Stata was used for descriptive analysis and Mplus was used for factor analyses.

2.4. Missing data

Using Stata, we tested the pattern of missing data by examining whether the missingness of the 36 JSS variables was correlated with a set of demographic variables. These variables included sex, age, race/ethnicity, child care responsibility, elder care responsibility, educational attainment, years of child welfare experience, and salary. Chi-squared tests and *t*-tests did not reveal any significant differences. Therefore, we concluded the pattern of missing data was missing completely at random. However, using the same method, we found that the pattern for missing data of the two criterion measures (intent to stay in child welfare and intent to leave the current agency) was missing at random.

The number of missing observations ranged from 1 to 22 for all job satisfaction items. For the two criterion measures, the number of missing observations ranged from 32 to 37. Researchers have suggested that missingness < 5% on a single variable may be of little concern (Graham, 2009; Kline, 2010). Although some of our variables had > 5% missing data, for simplicity and consistency, we used the pairwise deletion method when calculating correlations between the job satisfaction subscales and between job satisfaction and the two criterion measures.

In the EFA/CFA analyses, missing data were handled by the MLR method. This method involves using a special form of maximum likelihood estimation for incomplete data, which allows all cases to be retained and analyzed in factor analyses. It is incorporated in Mplus as a standard method to handle missing data and has been reported to be more reliable than single imputation or available case methods (Kline, 2010).

3. Results

3.1. EFA

We first examined the factorability of the 36 JSS items using two well-recognized criteria. The mean of the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.86, well above the recommended value of 0.60 (Cerny & Kaiser, 1977). Bartlett's test of sphericity was significant (χ^2 (630) = 3494.32, $p < 0.001$), suggesting that these items were intercorrelated and suitable for factor analysis.

Model 1 of the EFA included all 36 items of the original JSS. According to our factor loading criteria, we respecified the original EFA model when an item (1) had loadings < 0.40 on all factors; or (2) cross loaded on two or more factors and the loading difference was ≤ 0.20. We eliminated these items and re-ran the analysis in Model 2 (removed item 5, 15, 23, 34, and 36 from Model 1) and Model 3 (removed item 6, 8, 16, and 32 from Model 2). Model 3 resulted in an eight-factor solution because we eliminated one factor (contingent rewards) on which no item loaded (i.e., all loadings < 0.40). In the final model (Model 4), we further eliminated two factors on which only two items loaded based on the notion that factors with fewer than three indicators are often poorly measured and unstable (Costello & Osborne, 2005). The two factors were co-workers (item 7 and 25) and operating procedures (item 24 and 31). Thus, in Model 4, a total of 23 items and six factors were retained.

Table 2
Factor loadings, communality, and eigenvalues based on the robust maximum likelihood estimation with geomin rotation for 23 items from the Job Satisfaction Survey (N = 343).

Item no.	Factor	Unstandardized loading	Communality	Eigenvalue
1	Pay	− 0.62	0.93	6.06
10	Pay	0.56	0.93	
19	Pay	0.68	0.94	
28	Pay	0.54	0.93	
3	Supervision	0.78	0.93	2.48
12	Supervision	0.72	0.93	
21	Supervision	0.69	0.95	
30	Supervision	0.66	0.92	
2	Promotion	− 0.62	0.92	1.72
11	Promotion	0.65	0.93	
20	Promotion	0.56	0.93	
33	Promotion	0.67	0.92	
4	Benefits	0.47	0.93	1.41
13	Benefits	0.65	0.93	
22	Benefits	0.73	0.92	
29	Benefits	0.48	0.94	
9	Communication	0.40	0.93	1.21
14	Communication	0.41	0.94	
18	Communication	0.59	0.91	
26	Communication	0.59	0.91	
17	Nature of work	0.48	0.88	1.13
27	Nature of work	0.44	0.91	
35	Nature of work	0.85	0.69	

Note. Loadings with an absolute value < 0.40 were suppressed.

Table 2 presented the factor structure, primary factor loadings, factor eigenvalues, and the communality of each item. The original factor labels created by Spector (1985) suited the extracted factors and were retained. Specifically, these factors were pay, supervision, promotion, benefits, communication, and nature of work. The absolute value of each item's primary loading was over 0.40, ranging from 0.40 to 0.85. The eigenvalues were all above 1, ranging from 1.13 to 6.06. The communality was above 0.90 for all items except item 35 (communality = 0.69).

Except for item 14 (“I do not feel that the work I do is appreciated”) that loaded on communication rather than contingent rewards, all other items loaded on the same factor as in Spector's (1985) original psychometric study. Item 36 (“Work assignments are often not fully explained”), which loaded on communication in the original study, failed to load on communication or any other factor. Items loading on pay, supervision, promotion, and benefits were the same as in the original study. But nature of work had three instead of four items, with item 8 “I sometimes feel my job is meaningless” failing to load.

The model fit the data well: χ^2 (130) = 147.95, p = 0.13; CFI = 0.99; TLI = 0.98; RMSEA = 0.02 (90% CI [0.00, 0.03]); SRMR = 0.02. In addition, most bivariate factor correlations were significant at the 0.05 level, providing support for the use of oblique rotation. The following bivariate correlations were not significant: the correlation between pay and supervision, between pay and nature of work, between supervision and promotion, between supervision and benefits, and between benefits and nature of work.

3.2. CFA

Using Sample 2, we conducted the CFA to test the factor structure identified in the final EFA model. Before conducting the CFA, we examined the multivariate normality of the indicators using Mardia's skewness and kurtosis tests (Mardia, 1980) and the Henze-Zirkler test (Henze & Zirkler, 1990). The multivariate skewness and kurtosis score based on Mardia's tests was 2696.60 ($p < 0.001$) and 3627.20 ($p < 0.001$), respectively; the Henze-Zirkler test in terms of skewness and kurtosis was also significant: Henze-Zirkler = 129.28, $p \leq 0.001$. Therefore, we used MLR as the estimation method to deal with non-normality. The original CFA model that contained the 23 items and six factors identified in the final EFA model yielded moderate fit: χ^2 (215) = 399.48, $p < 0.001$; CFI = 0.91; TLI = 0.89; RMSEA = 0.05 (90% CI [0.04, 0.06]); SRMR = 0.06. To improve model fit, we followed Brown's (2006) suggestion and freely estimated the error covariance between all the negatively worded items. As a result, the revised model fit the data slightly better: χ^2 (170) = 301.72, $p < 0.001$; CFI = 0.94; TLI = 0.90; RMSEA = 0.05 (90% CI [0.04, 0.06]); SRMR = 0.05. All 23 items loaded on their respective factors significantly.

3.3. Reliability and validity

Table 3 presents the descriptive statistics and reliability scores of the six JSS subscales identified in the EFA. The respondents were most satisfied with the nature of the work (M = 3.11), followed by communication (M = 2.62), benefits (M = 2.51), promotion (M = 2.38), supervision (M = 2.30), and pay (M = 2.25). Cronbach's α = 0.70 has been recommended as the cutoff for acceptable reliability (Nunnally & Bernstein, 1994). Except that the communication subscale had marginally acceptable reliability (α = 0.69), all other subscales yielded acceptable reliability, with α ranging from 0.70 to 0.84 (see Table 3). Also, the reliability for the whole scale was excellent (α = 0.90).

Based on the results of the revised CFA model, Table 4 presents the unstandardized loading, the standard error, the significance level, and the standardized loading of each item. All unstandardized factor loadings were statistically significant ($p < 0.001$). Calculated from the standardized loading of each item, the AVE and CR have been used to assess the convergent validity of a construct (Fornell & Larcker, 1981). The recommended cutoff value is > 0.50 for the AVE and > 0.70 for the CR (Fornell & Larcker, 1981; Hair, Black, Babin, & Anderson, 2009).

CR > 0.70 alone has been suggested as a good indicator for adequate validity even when the AVE < 0.50 (Malhotra & Dash, 2011). As shown in Table 4, the AVE values ranged from 0.33 to 0.56, indicating that convergent validity was adequate only for the supervision subscale. However, the CR value met the recommended cutoff for all subscales but communication (CR = 0.69). Thus, it seemed that five JSS subscales (including pay, supervision, promotion, benefits, and nature of work) had acceptable convergent validity, while the communication subscale did not.

According to Fornell and Larcker (1981), if the AVE value of a subscale is larger than the correlations between that subscale and other subscales, then the discriminant validity of the subscale can be established. As shown in Table 5, the coefficients of the bivariate correlations between the six JSS subscales identified in the EFA ranged from 0.07 to 0.47. Comparing these to the AVE value of each JSS subscale, only the discriminant validity of the communication subscale appeared problematic because its AVE value (0.33) was smaller than its correlations with four other subscales: pay (r = 0.37), supervision (r = 0.47), promotion (r = 0.40), and nature of work (r = 0.36). These results indicated that five JSS subscales (i.e., pay, supervision, promotion, benefits, and nature of work) had good discriminant validity in voluntary child welfare workers.

To test criterion validity, we computed the correlations between each JSS subscale and intent to stay in child welfare measure and two subscales of the Intent to Leave the Agency Scale (see Table 5). All six subscales were statistically significantly correlated with both intent to stay in child welfare (r ranging from 0.12 to 0.41) and intent to leave the current agency (r ranging from −0.19 to −30) in the expected directions. These findings suggested that the criterion validity of the six JSS subscales was adequate in our sample.

Table 3
Descriptive statistics for the eight Job Satisfaction Survey factors (N = 358).

	No. of items	M (SD)	Range	Alpha
Pay	4	2.24 (0.44)	1–4	0.77
Supervision	4	3.31 (0.60)	1–4	0.84
Promotion	4	2.39 (0.43)	1–3.5	0.76
Benefits	4	2.51 (0.63)	1–4	0.75
Communication	4	2.62 (0.62)	1–4	0.69
Nature of work	3	3.11 (0.53)	1–4	0.70

Table 4
Factor loadings based on confirmatory factor analysis for 23 items from the Job Satisfaction Survey (N = 358).

Item No.	Factor	Unstandardized loading (SE)	Standardized loading	AVE	CR
1	Pay	−0.59 (0.05)	−0.66	0.46	0.77
10	Pay	0.50 (0.05)	0.61		
19	Pay	0.66 (0.05)	0.71		
28	Pay	0.64 (0.04)	0.73		
3	Supervision	0.62 (0.05)	0.79	0.56	0.84
12	Supervision	0.47 (0.05)	0.68		
21	Supervision	0.55 (0.05)	0.71		
30	Supervision	0.56 (0.05)	0.81		
2	Promotion	−0.47 (0.06)	−0.53	0.46	0.77
11	Promotion	0.66 (0.04)	0.78		
20	Promotion	0.51 (0.05)	0.67		
33	Promotion	0.57 (0.05)	0.69		
4	Benefits	0.61 (0.05)	0.70	0.46	0.77
13	Benefits	0.55 (0.06)	0.65		
22	Benefits	0.57 (0.04)	0.79		
29	Benefits	0.47 (0.06)	0.55		
9	Communication	0.54 (0.06)	0.60	0.33	0.67
14	Communication	0.56 (0.06)	0.63		
18	Communication	0.35 (0.05)	0.48		
26	Communication	0.50 (0.06)	0.60		
17	Nature of Work	0.36 (0.05)	0.59	0.45	0.71
27	Nature of Work	0.39 (0.05)	0.56		
35	Nature of Work	0.57 (0.05)	0.83		

4. Discussion

Our study aimed to examine the psychometric properties of the JSS in voluntary child welfare workers. Using randomly split samples, we conducted the EFA and CFA separately. Our EFA yielded a six-factor structure: pay, supervision, promotion, benefits, communication, and nature of work. We compared our results with Spector's (1985) original psychometric study. At the factor level, four out of the six subscales, including pay, supervision, promotion, and benefits, contained the same items as in Spector's study. However, our EFA did not identify contingent rewards, operating procedures, or co-workers as a subscale. Interestingly, in his original EFA, Spector (1985) reported that the four items intended to measure contingent rewards were split evenly between supervision and pay. He suggested that respondents might perceive appreciation and recognition as aspects of supervision and general contingent rewards as monetary.

The reason why our EFA did not identify operating procedures or co-workers might be related to our sample characteristics and the vague wording of some items. In Spector's study (1985), the majority of the sample was selected from public human service agencies such as community mental health centers, state psychiatric hospitals, and state

Table 5
Correlations between the Subscales of the Job Satisfaction Survey among voluntary child welfare workers.

	1	2	3	4	5	Stay	Looking	Acting
1. Pay	1.00	0.11*	0.34***	0.30***	0.37***	0.31***	− 0.26***	− 0.30***
2. Supervision	0.11*	1.00	0.30***	0.09	0.48***	0.12*	− 0.24***	− 0.19***
3. Promotion	0.34***	0.30***	1.00	0.33***	0.41***	0.13*	− 0.20***	− 0.22***
4. Benefits	0.30***	0.09	0.33***	1.00	0.25***	0.17**	− 0.23***	− 0.25***
5. Communication	0.37***	0.48***	0.41***	0.25***	1.00	0.26***	− 0.30***	− 0.30***
6. Nature of work	0.07	0.27***	0.19***	0.14**	0.38***	0.41***	− 0.30***	− 0.24***

Note. *p ≤ 0.05; **$p \leq 0.01$; ***p ≤ 0.001; Stay = Intent to stay in child welfare; Looking = The looking subscale on the Intent to Leave the Agency Scale; Acting = The acting subscale on the Intent to Leave the Agency Scale.

social service departments. On the other hand, our sample included child welfare workers in voluntary agencies. Regarding the subscale on co-workers, for example, child welfare workers often work independently on their cases, and thus may not perceive the role of co-workers as important. In fact, since child welfare workers often go out for meetings and visits, they may have little time to interact with co-workers to discuss their cases. Meanwhile, the subscale of operating procedures in the original study (Spector, 1985) did not appear to be unidimensional: while some items measured operating procedures, item 24 ("I have too much to do at work") tapped workload issues.

At the item level, 22 out of the 23 items loaded on the same factors as in Spector's (1985) study. However, item 14 ("I do not feel that the work I do is appreciated") loaded on communication rather than contingent rewards. In addition, two items from the six subscales were not retained in our EFA: item 36 ("Work assignments are often not fully explained") which loaded on communication in Spector's (1985) study and item 8 ("I sometimes feel my job is meaningless") which loaded on nature of work in Spector's (1985) study. These discrepancies might also have to do with the characteristics of our sample. For example, child welfare workers typically understand the impacts of their work on children's lives and find their work rewarding, which is one of the reasons why they choose to stay in child welfare (Pösö & Forsman, 2013). This unique characteristic in our sample, in turn, may contribute to item 8 not loading on the nature of work subscale.

The subsequent CFA confirmed the final model identified in the EFA (23 items loading on 6 subscales) with adequate model fit. However, only five out of the six subscales had good or acceptable reliability scores. These subscales, with a total of 19 items, included pay, supervision, promotion, benefits, and nature of work. CFA results also suggested that the five subscales had acceptable convergent validity and discriminant validity, while the communication subscale did not. Finally, each of the five subscales was significantly correlated with intent to stay in child welfare and intent to leave the agency, suggesting that they had good criterion validity. To differentiate between the original JSS and the validated JSS scale, we refer to the five validated subscales as the short-form version of the original JSS (JSS-SF).

These findings are consistent with existing research that suggests that there is a positive relationship between job satisfaction and retention in child welfare workers (e.g., Auerbach et al., 2010; McGowan et al., 2010). At least three factors (pay, benefits, and supervision) have been studied extensively. For example, Auerbach et al. (2010) highlighted the important role of salaries in shaping retention outcomes for voluntary agencies. Similarly, researchers have reported that pay and benefits were two determinant factors to keep child welfare staff who preferred to leave their agencies from actual leaving (Strand, Spath, & Bosco-Ruggiero, 2010). Also, in a systematic review, Dravigne et al. (2008) found agency factors, including pay, benefits, and supervision, to be important for the retention of front-line staff in child welfare agencies.

4.1. Limitations and directions for future research

Our study has some limitations. First, the data were collected at the same time and we used one sample for our analysis. Nevertheless, the sample analyzed in the study was large enough for us to split it into two random halves and conduct factor analyses in the two separate subsamples. Ideally, the sampling process should be separate so that two independent samples may be collected for the EFA and the CFA.

Second, our CFA results leave much to be desired, especially in terms of the reliability, convergent validity, and discriminant validity of the communication subscale. The AVE scores for pay, promotion, benefits, and nature of work did not meet the standard for adequate convergent validity. We suspect that this indicates that the factor structure identified in the EFA is not stable. Therefore, a replication EFA is recommended for future researchers. It has been suggested that, when replicating the EFA, researchers need to not only examine whether the items load on the same factor but also detect whether the loadings are similar by comparing the values (Osborne & Fitzpatrick, 2012). Alternatively, future research may need to revise the wording of some items to make it specific and relevant enough to reflect the work environment of the workers in voluntary child welfare agencies.

Finally, we did not include public child welfare workers in the analysis. Given the lack of validation studies on the JSS in public child welfare, future research should consider surveying public child welfare workers. In Spector's (1985) study, the original JSS was primarily validated in the public sector including state social services employees, therefore, researchers may attempt to validate the original nine-factor structure in public child welfare workers by only conducting a CFA. However, we recommend conducting an EFA first because of the potential differences between public child welfare and other professions in the public social service sector.

4.2. Practice implications

All the five subscales validated in this study were correlated with the two criterion measures: intent to stay in child welfare and intent to leave the current agency. Therefore, executives of voluntary child welfare agencies may want to target the five subscales (including pay, supervision, promotion, benefits, and nature of work) to enhance their workers' job satisfaction and retention outcomes. Flower et al. (2005) have pointed out the issue of the unequal pay and benefits between public and private child welfare agencies and recommended closing the gap for private child welfare workers. Nevertheless, the situation will not be changed overnight in light of funding constraints. This is why researchers have called for systematic changes that involve the collaboration between government agencies and private agencies (Auerbach et al., 2010; Flower et al., 2005).

Within the agency, supervisors must be supported to ensure effective supervision. Like public agencies, private agencies may need to consider making a strategic plan to concentrate on supervisory training and effectiveness (Renner, Porter, & Preister, 2009). Developing specific promotion criteria could also enhance job satisfaction and retention among voluntary child welfare workers. Lastly, to further improve job satisfaction, private agency executives can provide more job tasks and opportunities that are conducive to the workers feeling a sense a pride and using and developing their skills.

5. Conclusion

Given the wide use of the JSS in child welfare retention research, it is urgent to examine its psychometric properties in child welfare workers. The current study bridged the gap by validating the scale in a sample of voluntary child welfare workers. The validated JSS-SF includes five subscales and 19 items: pay (4 items), promotion (4 items), supervision (4 items), benefits (4 items), and nature of work (3 items). Comparing to the original JSS (nine subscales with 4 items each), the JSS-SF is more practical to use for administrative purposes. We caution against using the original JSS in child welfare research without thoroughly examining its psychometric properties. Instead, child welfare administrators and researchers wishing to assess job satisfaction in voluntary child welfare workforce should consider using the JSS-SF.

Conflicts of interest

None.

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