Use of the Copenhagen Burnout Inventory with social workers: A confirmatory factor analysis

Abstract

Burnout among social workers continues to be a relevant issue as it can lead to major problems: personal health issues; service deterioration; and turnover. This study examined the use of the Copenhagen Burnout Inventory with U.S. social workers ($N = 1774$) in direct-service and non-direct-service roles. The CBI is a no-cost alternative to the commonly employed Maslach Burnout Inventory. Results revealed that the CBI is a suitable tool to measure burnout among social workers regardless of position. Screening, identifying sources, and action planning to reduce burnout are critical steps for organizations to ensure a quality atmosphere for employees and clients.

Practice Highlights

- Our findings suggest that the Copenhagen Burnout Inventory (CBI), a freely available, online tool, is an effective instrument for measuring burnout among U.S. social workers in direct-service and non-direct-service roles.

- In practice settings, organizations and their administrators have ethical and legal responsibilities to their workers and clients served to provide a healthy, safe environment. Regular assessment of burnout is necessary to understand to what degree it impacts workers. Screening can also generate a productive dialogue between administrators and employees about stressful conditions, which allows workers contribute to positive change through policy modification and solution implementation.

Recent articles in Human Service Organizations relevant to this topic:

Leake, R., Rienks, S., & Obermann, A. (2017). A deeper look at burnout in the child welfare workforce. *Human Service Organizations: Management, Leadership & Governance, 41*(5), 492-502.

This article is referenced in the paper and provides conceptual framework for analysis.

Keywords: Confirmatory Factor Analysis; Social Work; Burnout; Copenhagen Burnout

Inventory

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Introduction

Burnout among social workers has the potential to lead to serious consequences for clients, social workers, and agencies. Burnout is associated with mental and physical health problems among social workers, a deterioration in services provided to clients, and increased staff turnover for agencies (Kim, Ji, & Kao, 2011; Maslach & Jackson, 1981; Toppinen-Tanner, Kalimo, & Mutanen, 2002). High turnover can result in cases being passed from one social worker to another, making it difficult for clients to form a therapeutic alliance, problematic for agencies to retain clients, and hard for clients to access the services they need (Flower, McDonald, & Sumski, 2005; Government Accountability Office, 2003). High turnover rates negatively impact clients and their families. Studies have found that children who experience interruptions in services due to worker turnover spend more time in foster care and are less likely to achieve permanency (Goerge, 1994; Ryan, Garnier, Zyphur, & Zhai, 2006). Therefore, human service organizations and other employers of social workers must take a proactive stance by frequently screening, considering contributing sources, and making necessary changes to avoid and reduce burnout. To assist agencies in their pursuits to help social workers and create healthier workplaces, the purpose of the current study is to examine the use of the Copenhagen Burnout Inventory – a free, online instrument – with social workers in various organizational roles who are practicing in the United States. Confirmatory factor analyses, cross validation, and post-hoc analyses were utilized to accomplish the research objectives. To our knowledge, this is the first study to validate this instrument in a large sample of exclusively social workers serving in direct-service, supervisory, and other positions.

Background

Social work is commonly regarded as a stressful occupation, and burnout has been a popular topic among researchers (Schwartz, Tiamiyu, & Dwyer, 2007; Söderfeldt, Söderfeldt, & Warg, 1995; Wagaman, Geiger, Shockley, & Segal, 2015; Wilson, 2016). Burnout can be defined as a state of emotional and physical exhaustion resulting from an ongoing imbalance of stress and coping resources, especially when related to work (Freudenberger, 1974; Leiter & Maslach, 1988). Social workers are thought to be particularly vulnerable to burnout due to working conditions that are often arduous, emotionally draining, and require excessive multi-tasking – all with limited resources and relatively low pay considering their educational attainment (Dekel & Peled, 2000; Lloyd, King, & Chenoweth, 2002; Tartakovsky & Walsh, 2016).

Existing burnout literature related to social work primarily focuses on frontline practitioners. Social workers who perform administrative roles are discussed in the context of the quality and quantity of leadership, support, and supervision offered to direct service staff and how these issues affect burnout (i.e. Hamama, 2012; Smith, 2005; Westbrook, Ellis, & Ellet, 2006; Yürür & Sarikaya, 2012). When studies have included social workers in supervisory roles in their samples, they are often folded in with direct practitioners; thus, comparisons among supervisors and direct-service providers are limited (Kim, Ji, & Kao, 2011; Rohland, 2000). While studies have shown that increased supervisory support is protective against burnout among direct service staff, little is known about factors that lead to burnout among social workers whose primary function is supervising (Lloyd, King, & Chenoweth, 2002). Further, present literature about burnout among social workers in other organizational roles (i.e. administrative but not a supervisor) is scant.

Measuring Burnout in Social Workers

The Maslach Burnout Inventory (MBI) has been the most frequently used instrument for measuring burnout in empirical studies (Maslach & Jackson, 1981; Schaufeli & Enzmann, 1998). Kristensen, Borritz, Villadsen, and Christensen (2005) argue that the MBI has been so dominant in the field of burnout research that it has become tantamount with the definition of burnout itself, one affecting the other and vice versa. The MBI has been popular in studies of social workers (e.g., Cocker & Joss, 2016; Hombrados-Mendieta & Cosano-Rivas, 2013; Sanchez-Moreno, de La Fuente Roldan, Gallardo-Peralta, & Lopez de Roda, 2015; Tartakovsky, 2016; Tartakovsky & Walsh, 2016; Travis, Lizano, & Barak, 2016). The MBI, which measures depersonalization, emotional exhaustion, and personal accomplishment, was originally designed for use in human services fields and has been found to obtain reliable scores to measure burnout (Maslach & Jackson, 1996). Another tool frequently employed in social work burnout studies (e.g., Bride, Radey, & Figley, 2007; Cocker & Joss, 2016; Sprang, Clark, & Whitt-Woosley, 2007; Thomas, 2013; Van Hook & Rothenberg, 2009; Wagaman et al., 2015) is the Professional Quality of Life Scale (ProQoL; Stamm, 2005). This is a no-cost instrument that addresses two main constructs, compassion satisfaction and compassion fatigue. The latter construct is measured by two subscales, burnout and secondary trauma stress (Stamm, 2005).

While the MBI and ProQoL measures have been commonly used to study burnout in social workers, there are limitations of these instruments. The ProQoL measures burnout as a component of professional quality of life and does not allow researchers to probe underlying aspects of burnout or sources of burnout. The MBI does include subscales which allow researchers to study underlying aspects of burnout, but it does not probe perceived sources of burnout. A limitation specific to the MBI is that its three components are theoretically distinct,

and its authors have cautioned against combining components to form a single measure of general burnout (Maslach, Jackson, & Leiter, 1996). Furthermore, one of its components, personal accomplishment, has been shown to work differently than the other two components (Kristensen et al., 2005; Schutte, Toppinen, Kalimo, & Schaufeli, 2000). Inherent in each of these measures of burnout is the assumption that burnout is a construct exclusively related to work. This assumption ignores the stresses of one's personal life which contribute to burnout and how interactions with clients, especially among social workers, are a unique source of stress which should be differentiated from other work-related stressors (Lloyd, King, & Chenoweth, 2002). Measures of burnout that do not make this assumption are needed to probe the specific domains of a worker's life to which experiences of burnout may be attributed.

The Copenhagen Burnout Inventory

The Copenhagen Burnout Inventory (CBI) was developed in connection with the Project on Burnout, Motivation and Job Satisfaction (PUMA), a longitudinal study which investigated the prevalence and distribution of burnout among Danish human service workers (Borritz et al., 2006; Kristensen et al., 2005). Kristensen et al. (2005) developed the CBI after examining the burnout literature and finding that the MBI would not be suitable for the purposes of the PUMA study due to several criticisms. Their criticisms of the MBI mirror some of the limitations mentioned above and include the independent nature of its subscales which makes combining them to form a single total score inappropriate, the suggestion that reduced "personal accomplishment" may be a consequent of burnout rather than an underlying component, and the lack of a public domain version of the questionnaire (Kristensen et al., 2005, p. 194).

The CBI is a 19-item questionnaire that measures burnout with three subscales which probe burnout from sources with different levels of specificity (Kristensen et al., 2005). The six-

item Personal Burnout subscale is the least specific and most generic as it probes general fatigue and exhaustion without attribution of source ($\alpha = 0.87$; Kristensen et al., 2005; e.g. "How often do you feel weak and susceptible to illness?"; "How often are you emotionally exhausted?"). The seven-item Work-related Burnout subscale probes physical and psychological fatigue and exhaustion which the respondent perceives as attributable to work ($\alpha = 0.87$; Kristensen et al., 2005; e.g. "Are you exhausted in the morning at the thought of another day at work?"; "Does your work frustrate you?"). The most specific subscale is for Client-related Burnout which has six items and is intended to measure burnout as perceived to be attributable to work with clients ($\alpha = 0.85$; Kristensen et al., 2005; e.g. "Do you find it hard to work with clients?"; "Does it drain your energy to work with clients?"). A majority (12 of 19) of the items included on the CBI use the same response set, including all items for the Personal Burnout subscale, three items for the Work-related burnout subscale, and two items for the Client-related burnout subscale: *always* (100), *often* (75), *sometimes* (50), *seldom* (25), and *never* (0). A single item ("Do you have enough energy for family and friends during leisure time?) on the Work-related Burnout subscale uses the same response set but reverse-scored. Remaining items on the Work-related Burnout and Client-related Burnout subscales use a different response set: *to a very high degree* (100), *to a high degree* (75), *somewhat* (50), *to a low degree* (25), and *to a very low degree* (0).

    While the Personal Burnout and Work-related Burnout subscales are intended to be generic in the sense that intended respondents are anyone who participates in paid work of some kind, the Client-related Burnout subscale is more specific to human service professionals (Kristensen et al., 2005). The term "client" here is meant to refer to individuals who are the recipients of human services such as patients, students, or inmates and should not be construed to refer to customers or colleagues (Kristensen et al., 2005). It is important to note that each of

these subscales – attributions of burnout to work in general or work specifically with clients – is based solely on the self-report and perception of the respondent, and as such, the CBI is best understood as a scale for measuring burnout and its perceived connections to work and client interactions.

The CBI showed good internal consistency and evidence for divergent validity between subscales when it was used for the PUMA study (Borritz et al., 2005; Borritz et al., 2010; Borritz et al., 2006; Borritz, Rugulies, Christensen, Villadsen, & Kristensen, 2006). The CBI has been translated into at least eight different languages (Kristensen et al., 2005) and used in different countries such as Japan, Australia, Italy, and New Zealand with various types of professionals including nurses, teachers, dentists, and prison personnel (Biggs & Brough, 2006; Fiorilli et al., 2015; Milfont, Denny, Ameratunga, Robinson, & Merry, 2008; Odagiri, Shimomitsu, Ohya, & Kristensen, 2004; Winwood & Winefield, 2004).

Milfont et al. (2008) conducted confirmatory factor analyses of the CBI with secondary school teachers in New Zealand and found evidence of good construct validity. In their study, measurement weights for all items were significant, and the three-factor model of the CBI was confirmed to have good fit (Milfont et al., 2008). Milfont et al. (2008) found that a higher-order factor model had good fit, indicating evidence for a general burnout factor for the CBI. Fiorilli et al. (2015) also found evidence to support the three-factor model of the Italian version of the CBI with kindergarten to high school teachers. However, unlike previous validations of the CBI, Fiorilli et al. (2015) only achieved excellent fit after excluding Item 1 ("Do you feel worn out at the end of the working day?") and Item 6 ("Does your work frustrate you?") from the Work-related Burnout subscale. Fiorilli et al. (2015) excluded these items based on their large standardized residuals, signifying problems with model fit specific to those items. The

unreliability of these items in their study could be related to issues caused by translation to Italian, sampling error, or other factors in Fiorilli et al.'s (2015) study that would have affected measurement.

The most recent and relevant use of the CBI for social workers was by Leake, Rienks, and Obermann (2017) in their study of child welfare workers (13.4% BSW; 8.8% MSW). Leake et al. (2017) conducted an exploratory factor analysis (EFA) on the items from the Work-related Burnout and Client-related Burnout subscales and confirmed the two separate factors with all items loading significantly on their hypothesized domains. The results were equivalent when conducted separately for caseworkers and supervisors (Leake et al., 2017).

Purpose of This Study

Given the importance of assessing and managing burnout among social workers, the CBI may be a valuable measure for social work scholars and human service administrators to employ in research and practice. While the CBI has been validated with various types of professionals internationally, only one study (Leake et al., 2017) has validated the instrument with social workers in the United States. However, the study is limited by the mixed sample of social workers with other professionals and use of an exploratory validation method. Thus, the first objective of the current study was to validate the CBI with a multi-state sample of degreed social workers in the United States. The second objective of this study was to examine the discriminant validity between scores on the Personal Burnout and Work-related Burnout subscales. The rationale for this inquiry is that one of the assumptions of the CBI is that burnout is not entirely attributable to work, and as such, the Personal Burnout subscale is designed to probe burnout that is attributable to general life context (Kristensen et al., 2005). Previous studies have found sufficient discriminant validity between scores from the Personal Burnout and Work-related

Burnout subscales of the CBI (Fiorili et al, 2015; Milfont et al., 2008). However, given the strong conceptual attribution of burnout to work, further testing of discriminant validity of these two subscales using scores obtained from other populations was warranted to test Kristensen et al.'s assumption. The third objective of this study was to probe the use of the CBI with social workers in varying organizational roles. This inquiry addresses a gap in the literature related to the lack of evidence regarding burnout and its measurement with social workers who are supervisors or serve in other non-direct-service roles. The current study was one investigation of a comprehensive research effort to examine differences among rural, suburban, and urban social workers related to job satisfaction, burnout, and intention to leave (Authors, 2018).

Methods

The study was submitted to the Institutional Review Board of a large university in the Southeastern region of the United States in June 2017 and received exemption status as responses were anonymous.

Sampling Procedures

Social workers are often sampled for survey research using sampling frames based on professional organization membership (e.g. National Association of Social Workers [NASW]; Adams, Boscarino, & Figley, 2006; Adams, Matto, & Harrington, 2001) or social work licensure (Cole, Panchanadeswaran, & Daining, 2004; Ritter, 2008). However, there were concerns about the cost of obtaining access to such a sampling frame, low response rates, and generalizability of the sample obtained. Social media recruitment was utilized to obtain a national sample of social workers and to avoid excluding social workers who are not licensed and/or not members of NASW. An anonymous, online survey link was distributed on four different social media platforms — Facebook, LinkedIn, Reddit, and Twitter —over three weeks in July 2017. Specific

recruiting procedures were aligned with the functionality and policies of each platform. With Facebook and LinkedIn, authors posted the link with IRB-approved recruitment verbiage to social work-oriented groups. Additionally, authors contacted the administrators of pages that are focused on social work topics and cordially requested that the link be shared on their page (e.g. The New Social Worker Magazine). On Reddit and Twitter, new accounts were created for the purposes of the study, and the link and recruitment information were posted multiple times throughout the three-week period. Each platform had an individualized link to determine the source of respondents. The online survey was designed to be anonymous by not collecting identifying information or metadata to protect the privacy of respondents and increase the reliability of the responses obtained.

The survey link led participants to Qualtrics, an online survey platform hosted by the authors' institution, where they were presented with a page informing them of the purpose and voluntary nature of the study with no compensation awarded. If individuals consented, they proceeded to the survey, which took ten minutes to complete on average. While maintaining anonymity, settings in Qualtrics were utilized to prevent multiple responses from the same social worker.

Sample

Qualified participants obtained a bachelor of social work (BSW), a master of social work degree (MSW), or both; were at least 18 years old; and were practicing social work in the United States at the time of the survey. Individuals who did not meet these criteria were excluded as well as those who were not fluent in English as the survey was presented solely in English.

Measures

Demographics. Information about participants were collected in a demographic section with items probing education, years in practice, salary, gender, racial identity, zip code, years in current job, state of practice, geographic designation, full-time or part-time status, agency classification, target population, age group served, direct-service role, supervisor status, marital status, caregiver status, involvement in religion or spirituality, and religious affiliation. For the current study, descriptive statistics were shared on selected demographics (see *Results*), and direct-service role and supervisor status were utilized in the confirmatory factor analyses.

Direct-Service Role. In the demographic section, the survey inquired about the participant's role as a direct-service practitioner: *Does the majority of your work involve direct-service to clients?* The item was dichotomous – yes or no.

Supervisor Status. To probe further about chief work responsibilities, a dichotomous (yes/no) item regarding supervisor status was also included in the demographic section: *In your agency, are you considered a supervisor, manager, administrator, or director (e.g. this is your primary responsibility/role)?*

Worker Type. Descriptive statistics revealed that there were participants who were only direct-service practitioners or supervisors as well as individuals who provided direct-service and supervision. Additionally, it was found that a small portion of respondents were not direct-practitioners or supervisors, creating an "other" category. Thus, a new variable was created by combining and recoding the direct-service variable and supervisor status variable into a new variable, w*orker type*, to better characterize the professional roles of social workers in the sample. Worker type was coded into four categories: other social workers (0); direct-service practitioners (1); direct-service practitioners who are also supervisors (2); and supervisors (3).

Burnout. The Copenhagen Burnout Inventory (CBI) was used to measure three types of burnout: Work-related Burnout, Client-related Burnout, and Personal Burnout (Kristensen et al., 2005). All three subscales of the CBI have previously shown good internal reliability and construct validity with samples of health and human service professionals (Creedy, Sidebotham, Gamble, Pallant, & Fenwick, 2017; Milfont et al., 2008; Winwood & Winefield, 2004). All items on the CBI are multiple choice with five possible responses indicating either frequency (*always*, *often*, *sometimes*, *seldom*, and *never/almost never*) or level of agreement (*to a very high degree*, *to a high degree*, *somewhat*, *to a low degree*, and *to a very low degree*). Items are coded from 0 to 100 in increments of 25, with lower scores demonstrating low burnout. The Personal Burnout subscale consists of six items probing general physical and psychological exhaustion. The Work-related Burnout subscale consists of seven items assessing a respondent's psychological and physical exhaustion directly related to work. The Client-related Burnout scale consists of six items inquiring about a respondent's exhaustion related to client interactions.

Data Analysis

IBM SPSS (25.0) was used to generate descriptive statistics of the respondents and CBI items; compute inter-item correlations and Cronbach's alpha to assess reliability of the factors; and conduct a missing data analysis. Univariate and multivariate outliers were identified using a method described by Bowen and Guo (2012) to obtain standardized residuals, Cook's Distance, and Mahalanobis Distance within SPSS.

Confirmatory factor analyses (CFAs) were conducted using AMOS (25.0; Arbuckle, 2017). CFA was chosen for this study because it "uses latent variables to reproduce and test previously defined relationships between indicator variables" (Welch, 2010, para. 2). Further, CFA is effective in determining the reliability of an instrument with a particular sample – in our

case, social workers in the United States. This method is also helpful in evaluating measurement invariance across groups, and we were particularly interested in the use of the CBI with social workers who identify themselves as non-direct-service practitioners – like supervisors – in their respective agencies (Welch, 2010).

　　　To address the first objective, the hypothesized three-factor model of the CBI was tested (Model 1). The second objective of the study was to test discriminant validity of Work-related Burnout and Personal Burnout. This was accomplished by constructing a two-factor model that equated the covariances of Work-related Burnout and Personal Burnout (combining them into one factor essentially) while Client-related Burnout remained a separate factor (Model 2). Then, the hypothesized three-factor model was used to create a higher-order factor model which loaded the three factors onto one burnout factor, which tested if all of the variance and covariance flowed through the higher-order factor (Model 3; Byrne, 2016). The third study objective was addressed by conducting three assessments of measurement invariance using the multi-group analysis feature in AMOS: 1) supervisors and non-supervisors; 2) direct-service practitioners and non-direct-service practitioners; and 3) direct-service practitioners, supervisors, direct-service practitioners who are also supervisors, and other social workers who are not supervisors or direct-service practitioners. Finally, in an exploratory post-hoc analysis, the best-fitting model was re-specified by reviewing conceptual considerations of the CBI development as presented by Kristensen et al. (2005), and then standard regression weights and modification indices were inspected to underpin the theoretical adjustments (Brown & Moore, 2012). Because of the presence of multivariate nonnormality (discussed in *Results*) and the large sample, bootstrap maximum likelihood estimation was used to estimate all models (Byrne, 2016; Chuo & Bentler, 1995; Enders, 2001).

Given that large sample sizes may lead to excess power for confirmatory factor analyses, cross validation was applied (Bollen, 1989; Byrne, 1993; Raykov, 1998). Byrne (2016) notes that cross validation is also useful for "addressing problems associated with post hoc model fitting" (p. 294) that may be the result of numerous model specifications which could lead to Type I or Type II errors. Thus, the original sample ($N = 1720$) was randomly split into two equal halves, Sample A ($n = 860$) and Sample B ($n = 860$) using SPSS. Sample A served as the "calibration sample" – or the data used to test hypothesized and post hoc models – and Sample B was the "validation sample" (Byrne, 2016, p. 295).

To evaluate the models, the goodness-of-fit statistics utilized were the comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). The cut-offs for the CFI and RMSEA, among other fit indices, have been a source of debate in structural equation modeling research. As suggested by Perry, Nicholls, Clough, and Crust (2015), a CFI and TLI of at least .95 and RMSEA of less than .06 – the "golden rule" – may be too rigid when examining the use of a multifaceted instrument in a different sample. Thus, for this study, a CFI and TLI greater than .90, and RMSEA less than .08 were deemed satisfactory and indicated acceptable model fit with the sample. For measurement invariance, change in CFI and chi-square difference tests were used to assess the relative fit of measurement weights models and the default model. Unless a model allowing for measurement variance led to a significant chi-square difference test for model comparison and an increase in CFI of at least .001, measurement invariance was supported (i.e. CBI is useful for all groups).

Results

The total sample of respondents who completed any part of the CBI was 1,774, representing all 50 states and the District of Columbia. The majority of respondents were

recruited from Facebook (66.1%) followed by LinkedIn (29.3%), Reddit (3.7%), and Twitter (0.9%). Social workers practicing in New York (8.1%), California (8.0%), Tennessee (7.0%), and Texas (5.4%) were the most represented in the sample.

Missing Data & Outliers

A missing data analysis was conducted on the measures of interest – the CBI subscales, direct-service role, and supervisor status. The latter two variables had no missing data with minimal missing data in the CBI subscales: Work-related Burnout (.51%); Personal Burnout (.28%); and Client-Related Burnout (.96%). The data was found to have a monotone pattern of missingness, such that a case missing item X is also missing every item greater than X. This is due to a flaw in the survey design which required respondents to answer all items on a given page before proceeding to the next; therefore, those who completed the survey have no missing data. There were 1,774 respondents who completed any part of the CBI. For this study, cases in which at least half of each subscale of CBI was completed were included; thus, 17 cases were excluded ($N = 1757$). Examination of standardized residual, Cook's Distance, and Mahalanobis Distance values generated for all cases identified a single univariate outlier and 36 multivariate outliers, which were removed prior to conducting CFAs ($N = 1720$).

Participant Characteristics

Participant characteristics for the final sample ($N = 1720$) can be found in Table 1. The mean age for the sample was 38 years old ($SD = 10.90$) and ranged from 20 to 80 years old. Among the total sample, 90.2 percent of respondents were female and 79.7 percent were white. The majority of respondents were married or partnered (62.7%). In terms of educational attainment, most respondents held graduate degrees (MSW or PhD/DSW: 86.6%; BSW: 13.4%). Participants reported an average of 10 years of practice experience ($SD = 9.89$). Approximately

79 percent reported that the majority of their work was direct service, and slightly more than 28 percent of participants were supervisors in their agencies. Further analysis of the worker roles indicated that 15 percent were direct-service practitioners who were also supervisors and 7.4 percent of participants were neither direct-service practitioners nor supervisors, filling some other role in their agency.

<Insert Table 1 here>

Item & Scale Analysis

Table 2 provides descriptive statistics for each item on the CBI ($N = 1720$). Within the Personal Burnout (PB) subscale, mean item scores ranged from 41.16 ($SD = 25.72$) to 75.53 ($SD = 20.19$) with distribution that were negatively skewed and platykurtic. Within the Work-related Burnout (WRB) subscale, mean item scores ranged from 38.46 ($SD = 27.73$) to 65.38 ($SD = 25.56$) with distributions that were platykurtic and mixed in terms of skewness. Within the Client-related Burnout (CRB) subscale, mean item scores ranged from 25.77 ($SD = 22.46$) to 42.51 ($SD = 30.01$) with most distributions being platykurtic and positively skewed. There were no individual items that indicated problematic amounts of univariate skewness or kurtosis, using the criterion of |1| (Bowen & Guo, 2012). While a significant amount of multivariate kurtosis ($p < .001$) indicated the presence of multivariate non-normality even after removing outliers, this could be related to the large sample size and excess power, and bootstrap maximum likelihood estimation has been found to be robust to the presence of non-normality for CFAs (Byrne, 2016; Chuo & Bentler, 1995; Enders, 2001). All three subscales showed excellent internal reliability (see Table 3; PB, $\alpha = .902$; WRB, $\alpha = .906$; CRB, $\alpha = .897$).

<Insert Table 2 here>

<Insert Table 3 here>

CFA Models

      Model 1: Hypothesized three-factor model of the CBI.

      Utilizing Sample A, a CFA (see Figure 1) was performed on the hypothesized three-factor model of the CBI which included the three subscales and all manifest variables (Kristensen et al., 2005). Variances on the latent constructs were fixed to 1. Model 1 (χ^2 [149] = 1248.04, $p < .001$) was found to have adequate fit (CFI = .908, RMSEA = .093, RMSEA CI [.088, .097], and TLI = .894). All regression weights were significant, and the standardized regression weights were above .40 (.601 to .853); the lowest path, WRB7, was also the only reverse-scored item (see Table 4).

<center><Insert Figure 1 here></center>

<center><Insert Table 4 here></center>

      Model 2: Two-factor model of the CBI.

      In evaluating correlations between the latent constructs for discriminant validity in Sample A, one relationship of concern was PB and WRB ($r = .943$), based on Byrne (2016). Therefore, Model 2 was constructed by equating the covariance associated PB and WRB, allowing them to be a single latent construct, and CRB to be a separate latent construct (see Figure 2). A chi-square difference test revealed that Model 2 did not fit as well as Model 1 (χ^2 [2] = 158.108, $p < .001$; CFI = .895). This result indicated WRB and PB were not measuring the same construct. As in Model 1, all regression weights were practically and statistically significant.

      Model 3: Higher-order factor model of the CBI.

      A high-order factor, *burnout*, was added to the hypothesized three-factor model because a higher order factor may help explain the high inter-factor correlations in lower-level factors (see,

Figure 4, Byrne, 2016). Additionally, Model 3 was also constructed to determine if all of the variance can be accounted for by the overall construct of burnout. While the model fit was adequate, Model 3 did not differ from Model 1 in terms of fit (CFI = .908, RMSEA = .093, RMSEA CI [.088, .097], and TLI = .894). However, one discrepancy was noted in the standardized path weights from the higher-order factor to the subscales: The CRB path (.61) was much lower than WRB (1.09) and PB (.86). Because of distinctions between supervisors' and direct-care practitioners' roles, the lower-performing path weight was probed. Multi-group analyses were used to test differences between 1) direct-service practitioners and non-direct-service practitioners and 2) supervisors and non-supervisors for the path between CRB and the higher-order burnout factor. In the direct-service analysis, when we allowed the path between CRB and the general Burnout factor to vary, the path weight increased. However, in the second analysis (supervisors and non-supervisors), the path weight decreased. While there is no support for using a higher-order factor model, this analysis illustrates that the CRB subscale functions differently for direct-service practitioners and non-direct-service practitioners. Additionally, this result provides evidence that calculating a mean score from the combined subscales should be avoided, and mean scores for each subscale should be interpreted instead, as was the original intent of Kristensen et al. (2005).

<center><Insert Figure 2 here></center>

Measurement Invariance

Due to the gap in literature regarding burnout in social workers who are supervisors or serve in other organizational roles, there was concern about the use of the CBI with individuals who were not direct-service practitioners. Using Sample A with Model 1 – the best-fitting model, this research question was tested in three ways because descriptive statistics revealed that there

were individuals who were both direct-service practitioners and supervisors as well as social

workers who did not identify with either category (i.e. a person who is not a direct-service

practitioner or supervisor). First, a multi-group analysis was conducted between supervisors and

non-supervisors. A chi-square difference test revealed no differences between the two groups (χ^2

[19]: 20.084, p = .390). The same procedure was performed with direct-service practitioners and

non-direct service practitioners. Results indicated there were no differences (χ^2 [19]: 21.186, p

= .327). Finally, using the new worker type variable, a multi-group analysis was conducted

between the four categories – direct-service practitioners, direct-service practitioners who are

also supervisors, supervisors, and other social workers. As in the other two tests, no differences

were found (χ^2 [57]: 61.389, p = .322).

Post-Hoc Analysis

While the hypothesized model (Model 1) achieved adequate fit with Sample A, a post-

hoc analysis was performed in an exploratory effort to improve the model. All factor loadings in

Model 1 were statistically significant; additionally, the standardized regression weights were

above the minimum standard of .4 (Bowen & Guo, 2012). Therefore, no manifest variables were

removed. Correlations between error terms were then considered by first reviewing the

conceptual and theoretical development of the CBI (Kristensen et al., 2005) and then, the

modification indices to re-specify the model (Brown & Moore, 2012). The specification of

correlated error is justified when method effects are suspected, such as when items are similarly

worded or share a particular response set (Brown & Moore, 2012). Therefore, a correlation

between error terms within a subscale was considered if response categories were the same; item

content made them logical to pair; and modification indices were large in comparison to other

pairs. Demonstrated in Figure 4, this resulted in adding four error correlations which improved the model fit significantly: CFI = .956, RMSEA = .065, RMSEA CI [.060, .070], and TLI = .948.

<Insert Figure 3>

Cross Validation

Using Sample B, a CFA was conducted on the hypothesized, three-factor model (Model 1), achieving adequate fit: CFI = .905 CFI, RMESA = .095, RMSEA CI [.090, .099], and TLI = .894. All regression weights were statistically and practically significant. Then, invariance testing between Samples A and B was employed to assess model replication; results indicated that there were no differences in model fit between the samples (χ^2 [60] = 77.46, p = .064). Additionally, the post-hoc model was tested with Sample B: CFI = .952, RMSEA = .068, RMSEA CI [.063, .073], and TLI = .943. To cross-validate the post-hoc model, invariance testing was again utilized, revealing the model was constant between Sample A and Sample B (χ^2 [64] = 74.80, p = .168).

<Insert Table 5 here>

Discussion

Use of the CBI in Research & Practice

The first objective that this study sought to address was the appropriateness of the Copenhagen Burnout Inventory instrument to measure burnout in social workers who practice in the United States. The results indicated that the hypothesized three-factor model as presented by the CBI developers functioned adequately for the 1,720 social workers in our sample with high internal reliability and adequate fit, and with added error-term correlations in post-hoc testing, the fit was excellent. These results were further supported by cross-validation. Our findings were consistent with Leake et al.'s (2017) EFA which examined the validity and reliability of the CBI

for use in child welfare workers, including, but not limited to, social workers. As the Leake et al.

study investigated only the WRB and CRB subscales, our findings provide evidence for the use

of the CBI in its entirety (including the PB subscale) as a credible instrument for use with social

workers practicing in the United States.

These findings are important as burnout continues to be a relevant topic because of its

prevalence among social workers, causing detriment to clients, organizations, and employees

who experience it (Kim, Ji, & Kao, 2011; Maslach & Jackson, 1981; Toppinen-Tanner, et al.,

2002). Past studies have indicated that social workers who have higher levels of job-related

stress and burnout are also more likely to exhibit signs of clincially-diagnosable mental and

physical health issues (e.g. Bradley & Sutherland, 1995; Caughey, 1996; Thompson, Stradling,

Murphy, & O'Neill, 1996; Kim et al., 2011). In practice settings, organizations and their

administrators have ethical and legal responsibilities to their workers and clients served to

provide a healthy, safe environment, and when disregarded, financial and reputational

ramifications are probable (Reilly, Sirgy, & Gorman, 2012). The NASW Code of Ethics is clear

about impairment of social workers. Standard 4.05 states,

> Social workers should not allow their own personal problems, psychosocial distress, legal
>
> problems, substance abuse, or mental health difficulties to interfere with their
>
> professional judgment and performance or to jeopardize the best interests of people for
>
> whom they have a professional responsibility. (2017, Social Workers' Ethical
>
> Responsibilities as Professionals section, para. 7)

Thus, if their emotional or physical distress from burnout is causing them to perform their job

ineffectively, social workers must act by "seeking professional help, making adjustments in

workload, terminating practice, or taking any other steps necessary to protect clients and others"

(NASW, 2017, Social Workers' Ethical Responsibilities as Professionals section, para. 8). Fellow social workers are also bound to help their colleagues find assistance to deal with impairments, and if help is declined or ignored, they are required to report to proper authorities (NASW, 2017). Nonetheless, many social workers and other mission-driven professions suffer from martyr syndrome: for the sake of clients and the mission, employees put their own mental and physical needs last and give up caring from themselves, leading to burnout and other problems (Antoniou & Cooper, 2017; Gorski, 2015; Koeske & Koeske, 1989). Even faced with an ethical dilemma, individuals fraught with stress and burnout may not be forthcoming about their struggles for fears of not meeting clients' or organization's needs or disappointing supervisors and other people around them.

To manage burnout, administrators must know if and to what degree their employees are experiencing it. Leaders should assess for burnout in social workers on a regular basis to ensure their wellbeing and avoid adverse effects (Robb, 2004). Assessing burnout with a freely available, reliable, and valid instrument, as demonstrated in our study, can help organizations to gauge the level of burnout and understand the factors associated with burnout in order to effectively manage challenges and provide resolutions. Screening for burnout can also generate a productive dialogue between administrators and employees about stressful conditions and provide an opportunity for all employees – especially those on the frontline – to feel like they are being heard and contribute to positive change in organizational climate through policy modification and solution implementation.

Assessing Burnout in Various Organizational Roles

Another purpose of the present study was to determine if the Copenhagen Burnout Inventory is a suitable measure for social workers in various organizational positions, including

supervisory roles. This study extends prior research that only addressed burnout of social workers providing direct practice by encompassing in the analysis those individuals in supervisor roles, combined supervisor and direct-service roles, and other organizational roles. Through measurement invariance testing, we concluded that the CBI is an effective instrument for measuring burnout among social workers in a variety of administrative and direct-service positions. This finding was also consistent with Leake et al. (2017) who found no differences among supervisors and frontline practitioners. However, in testing a higher-order factor model, we identified that the CRB subscale was performing less optimally than WRB and PB. Ultimately, we found that the CRB subscale may be less effective for supervisors, particularly those whose work with clients does not make up most of their responsibilities. While this finding did not change the overall model fit, it supports Kristensen et al.'s (2005) notion that utilizing a total score of the subscales is biased. Because all subscales had excellent internal reliability with each of the four social worker roles (.89 or above), all standard regression weights in each subscale were adequate (.60 or above), and each subscale was found to be measuring different constructs, any of the subscales could be used individually. Thus, with social workers whose responsibilities are not client-based, the focus for assessing burnout may be on personal burnout and work-related burnout rather than client-related burnout. Social work researchers should take note that, to our knowledge, there have been few if any large-scale, empirical investigations conducted on burnout among social workers in non-direct-service positions. In relation to macro social work, this is a major gap in the literature. Our findings provide an instrument worthy of use in future research to study burnout in social workers who have a macro focus.

Limitations

This study should be considered within the context of its limitations. The study poses limitations due to its cross-sectional design. As such, no conclusions were drawn about measurement invariance of the CBI over time, though it would be important to examine the longitudinal invariance of the CBI if used in any longitudinal studies. Additionally, since data were collected via an online survey and our sample was recruited via social media, this potentially limited those who were able to participate in the study. Thus, our sample should not be considered representative of all practicing social workers in the United States. For instance, it is notable that graduate-level social workers represented 86.6 percent of the sample. Participants were also required to complete all aspects of the survey which included more than the CBI. This led to a monotonic pattern of missing data which was handled through listwise deletion and potentially biased our results.

Conclusion

This study extends current literature regarding the use of the CBI with social workers. Results indicate that the CBI is an effective tool to measure burnout among social workers in the United States who serve in various roles. While the MBI is an adequate instrument for measuring burnout in social workers, the availability of multiple tools to measure the same phenomenon is necessary. When the language we use to describe phenomenon and the instruments we use to measure phenomenon become too enmeshed, we risk engaging the feedback loop of self-fulfilling prophecy (Ferraro, Pfeffer, & Sutton, 2005). As Kristensen et al. (2005) have argued, the measurement of burnout with the MBI has been so common practice that it is nearly synonymous with the phenomenon of burnout itself, affecting theories and conception of burnout within research and practice. There is clearly room and need for other instruments to measure burnout in helping professions, and our results indicate that the CBI is a worthy alternative

among social workers. Further, the CBI can be accessed online at no cost – a major consideration for social service agencies and nonprofits who struggle financially but still want to address burnout among their workers. Future research should examine the use of the CBI among a racially diverse sample of social workers as well as within specific agency types. The longitudinal invariance of the CBI should also be assessed so that the CBI could considered for longitudinal study designs.

Burnout remains a critical issue in the social work profession (Caringi et al., 2017). Neglecting to help social workers who are suffering from burnout can result in adverse consequences to workers whose mental and physical health may be affected, to clients who may not receive adequate assistance, and to agencies which may face ethical dilemmas, legal troubles, and financial ramifications. Considering the recent and ongoing expansion of social workers' roles and responsibilities in integrated health settings, businesses, and nonprofits, assessing and managing stress levels and burnout among employees can improve outcomes for all stakeholders (Wilson, 2016).

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Table 1
Characteristics of Sample (N = 1720)

Characteristic	*n*	*%*
Gender*		
Male	153	8.9
Female	1552	90.2
Transgender/Genderqueer	12	.7
Age		
20-29	425	24.7
30-39	646	37.6
40-49	348	20.2
50-59	206	12.0
60+	95	5.5
Marital Status		
Single	506	29.4
Married/partnered	1078	62.7
Divorced	125	7.3
Widowed	11	.6
Ethnicity		
White	1370	79.7
Black	197	11.5
Asian/Pacific Islander	31	1.8
Native American	19	1.1
Other	103	6.0
Educational Attainment		
BSW/BSSW	230	13.4
MSW/MSSW	1459	84.8
PhD/DSW	31	1.8
Years in Practice		
0-2	336	19.6
3-5	381	22.2
6-9	290	16.9
10-14	263	15.3
15-19	178	10.3
20+	267	15.5
Direct-service practice	1365	79.4
Supervisors	485	28.2
Worker Type		
Direct-service practitioner only	1107	64.4
Supervisor only	227	13.2
Direct-service practitioner and supervisor	258	15.0
Other (no direct-service or supervision)	128	7.4

*Excluding those who preferred not to answer (*n* = 3).

Table 2

Descriptive Statistics of Individual Items for the CBI (N = 1720)

Item	M	SD	Skewness	Kurtosis
PB1	73.53	20.19	-.437	-.036
PB2	61.47	23.58	-.283	-.264
PB3	65.77	22.76	-.326	-.165
PB4	43.72	28.15	.106	-.809
PB5	61.72	24.33	-.385	-.087
PB6	41.16	25.72	.234	-.496
WRB1	65.00	26.33	-.431	-.389
WRB2	48.40	30.17	.091	-.831
WRB3	53.40	26.79	.017	-.513
WRB4	65.38	23.56	-.393	-.114
WRB5	49.00	28.73	.048	-.707
WRB6	38.46	27.16	.382	-.460
WRB7	44.46	22.49	.152	-.260
CRB1	25.77	22.46	.677	.172
CRB2	28.56	23.43	.605	.052
CRB3	34.11	25.10	.393	-.317
CRB4	42.51	30.01	.246	-.829
CRB5	27.62	25.35	.604	-.325
CRB6	33.23	28.84	.480	-.644

Note. PB = personal burnout; WRB = work-related burnout; CRB = client-related burnout.

Table 3
Descriptive Statistics and Correlations of Factors for the CBI (N = 1720)

Item	*M* Score	*SD*	α	*Mr*	PB	WRB	CRB
PB	57.89	19.86	.902	.615	1		
WRB	52.01	21.27	.906	.579	.87*	1	
CRB	31.97	21.11	.897	.604	.50*	.61*	1

$* p < .001$
Note. PB = personal burnout; WRB = work-related burnout; CRB = client-related burnout;
α= Cronbach's alpha; *Mr* = mean inter-item correlation

Table 4

Standardized Measurement Weights for Hypothesized Three-Factor Model of CBI (N = 860)*

Item	λ	95% CI
PB1	.758	.721, .789
PB2	.798	.764, .828
PB3	.814	.788, .840
PB4	.824	.796, .849
PB5	.853	.828, .875
PB6	.644	.603, .684
WRB1	.724	.685, .755
WRB2	.848	.826, .869
WRB3	.726	.686, .761
WRB4	.787	.758, .813
WRB5	.804	.777, .832
WRB6	.824	.797, .845
WRB7	.601	.544, .649
CRB1	.816	.775, .849
CRB2	.820	.781, .851
CRB3	.836	.808, .860
CRB4	.674	.625, .716
CRB5	.795	.758, .829
CRB6	.760	.717, .798

* Using Sample A

Note. PB = personal burnout; WRB = work-related burnout; CRB = client-related burnout.
Bias-corrected 95% CI estimated with bootstrap ML.

Table 5

Fit Indices for the Copenhagen Burnout Inventory (N = 860)*

Model	χ^2	df	p	CFI	TLI	RMSEA	RMSEA CI
Model 1	1248.04	149	<.001	.908	.894	.093	.088, .097
Model 2	1406.15	151	<.001	.895	.881	.098	.094, .103
Model 3	1248.04	149	<.001	.908	.894	.093	.088, .097
Post-hoc Model	674.015	145	<.001	.956	.948	.065	.060, .070

* Using Sample A.

Note. CFI = comparative fit index; RMSEA = root mean; square error of approximation
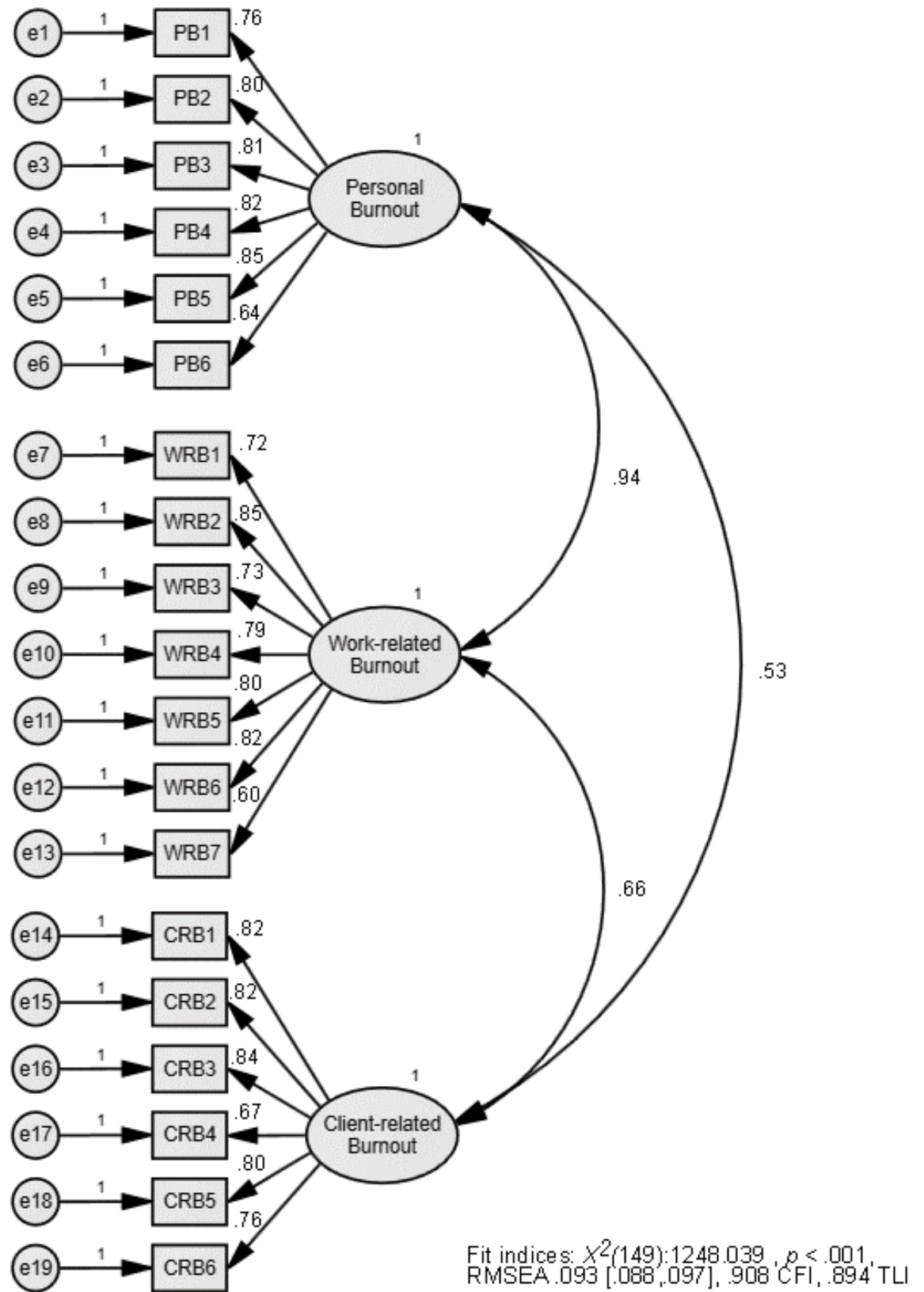
Figure 1: Model 1 - Hypothesized three-factor model of the CBI (standardized estimates)
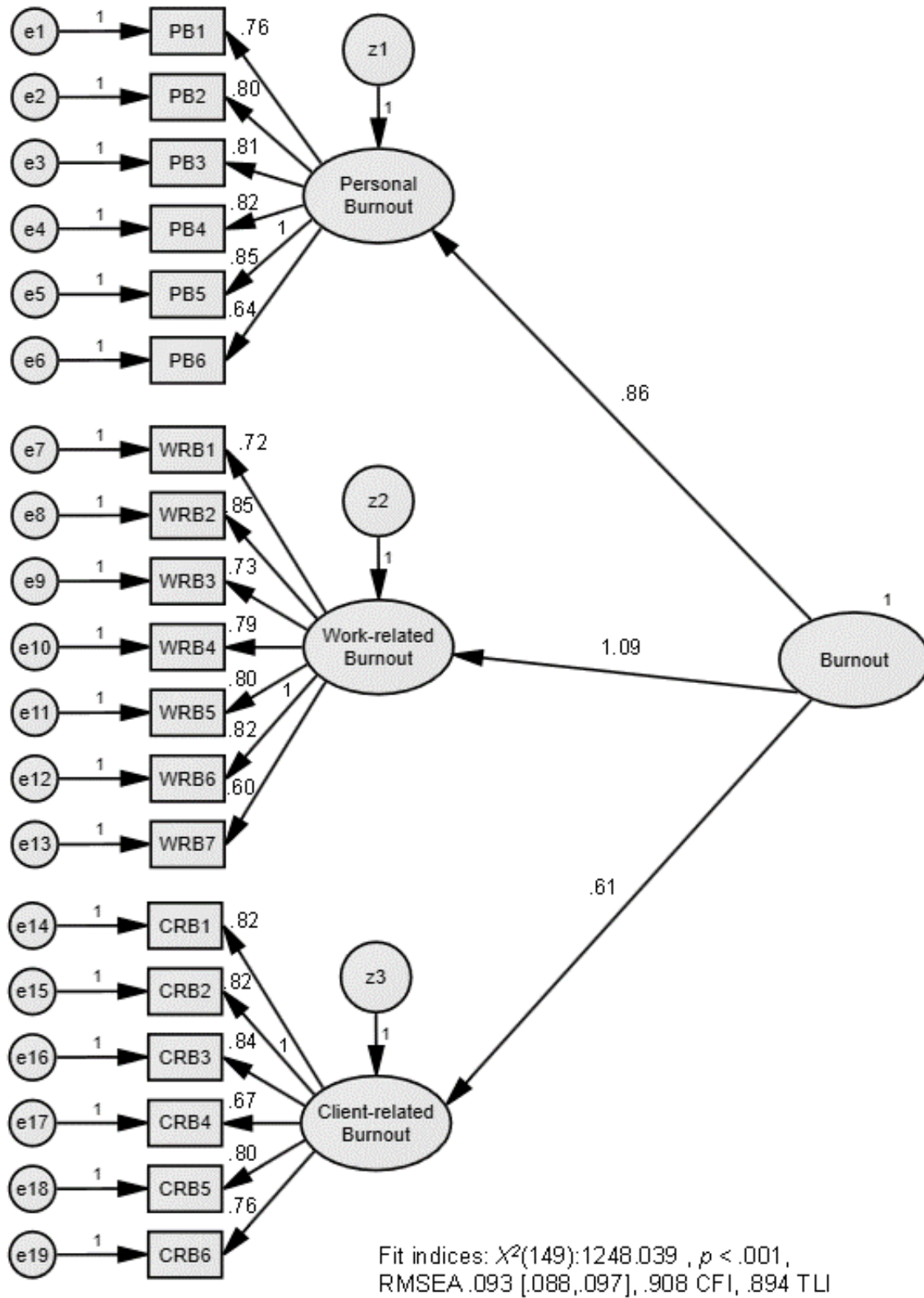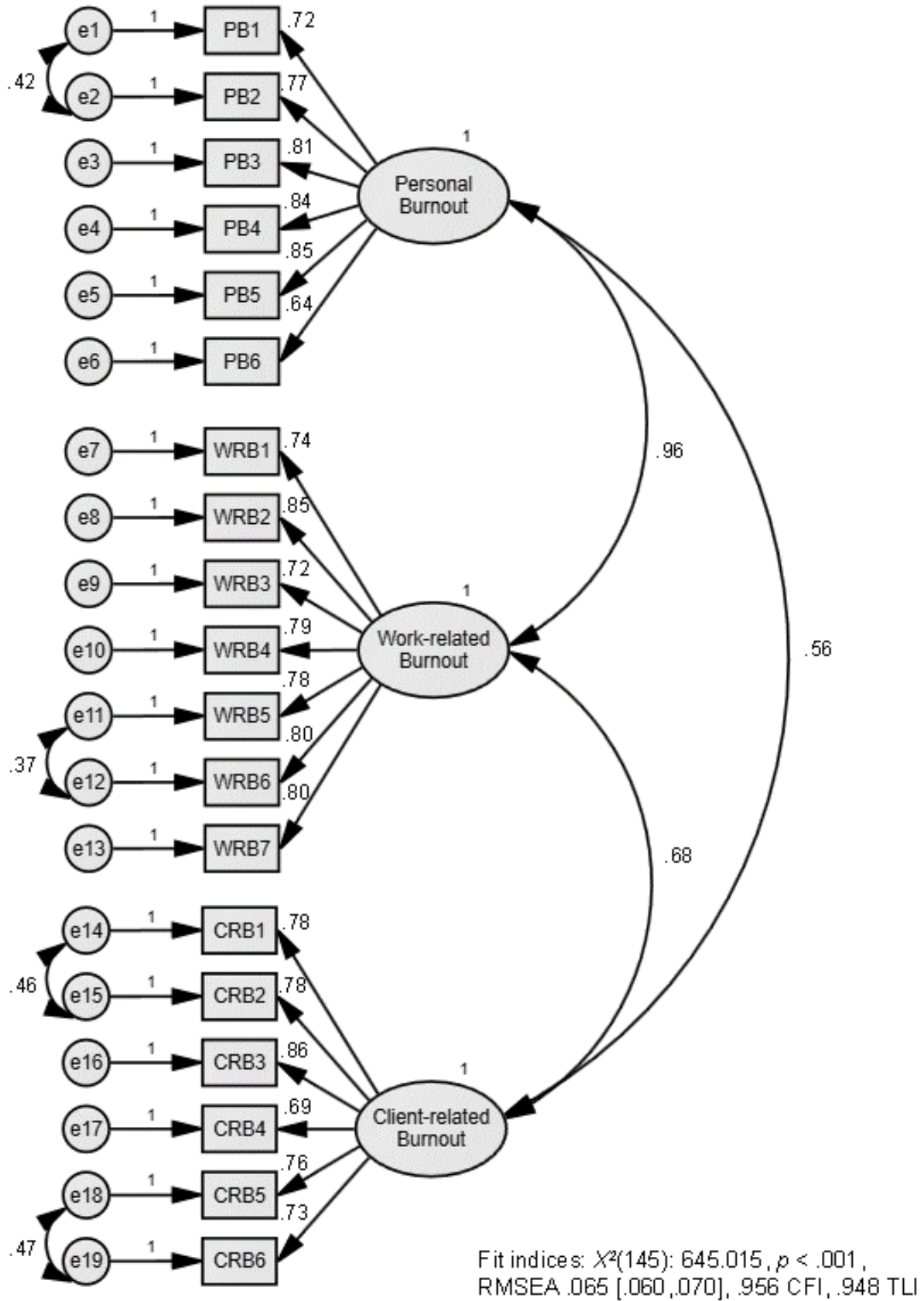
Figure 2: Model 3 - Higher-order factor model of the CBI (standardized estimates)

Figure 3: Post-hoc analysis with correlated error terms