https://doi.org/10.30775/KMES.54.3.207
음악교육연구 제54권 제3호 pp. 207-229 (2025년 8월) ISSN 1229-4179 (Print)
Korean Journal of Research in Music Education Vol.54, No.3, (August, 2025) ISSN 2713-3788 (Online)

미국 음악 교사 교육자의 번아웃 측정
- 코펜하겐 번아웃 척도에 대한 타당도 연구 -
Measuring U.S. Music Teacher Educator Burnout: A Validation Study of the Copenhagen Burnout Inventory

차동주* · 오드리 암레인-비어즐리**
Dong-Ju Cha · Audrey Amrein-Beardsley

Abstract The Copenhagen Burnout Inventory (CBI) was designed to assess burnout, with specific emphases on fatigue and exhaustion as key dimensions. Despite its extensive utilization and well-documented psychometric properties, though, there remains a dearth of knowledge regarding the structural validity of the CBI, especially among music educators. The present study represents the first known examination of music teacher educator burnout utilizing the CBI-University Faculty (CBI-UF) version. We performed exploratory factor analytical (EFA) methods with a sample of music teacher educators (N = 253). We extracted three empirical factors, accordingly: work and life related burnout, colleague related burnout, and student related burnout with 21-items proving structurally valid and psychometrically sound (Cronbach's alpha = .94). Results suggest that the interpersonal burnout dimensions had a clear demarcation between colleagues and students, and there was an empirical interconnection between work- and personal- related burnout, reflected in an amalgamated latent factor: work and daily life-related burnout.

Key words: burnout, exploratory factor analysis, music education academics, music teacher educators, validation study, well-being

초록 코펜하겐 번아웃 척도(Copenhagen Burnout Inventory, CBI)는 피로와 탈진을 핵심 차원으로 하여 번아웃을 측정하기 위해 개발된 도구이다. 이 척도는 폭넓게 활용되어 왔으며, 그 심리측정학적 특성이 다수의 선행 연구를 통해 입증되었음에도 불구하고, 특히 음악 교육자를 대상으로 한 구조 타당도에 관한 연구는 여전히 부족한 실정이다. 이에 본 연구는 CBI의 대학 교수용 척도(CBI–University Faculty; CBI-UF)을 활용하여 음악 교사 교육자의 번아웃을 측정한 최초의 시도라는 점에서 의의가 있다. 본 연구에서는 음악 교사 교육자 253명을 대상으로 탐색적 요인 분석(EFA)을 실시하였으며, 그 결과 업무 및 일상생활 관련 번아웃, 동료 관련 번아웃, 학생 관련 번아웃의 3개의 실증적인 요인이 도출되었다. 이 세 요인은 총 21개 문항으로 구성되었으며, 구조적으로 타당하고 심리측정학적으로도 신뢰할 수 있는 것으로 나타났다(Cronbach's alpha = .94). 분석 결과, 대인 관계적 번아웃 차원에서는 '동료'와 '학생'에 대한 번아웃이 명확하게 구분되었으며, 업무와 개인 생활에 관한 번아웃은 서로 밀접하게 연결되어 '업무 및 일상생활 관련 번아웃'이라는 하나의 잠재 요인으로 통합되는 경향을 보였다.

주제어: 번아웃, 음악 교사 교육자, 음악 교육 학계, 웰빙, 타당도 연구, 탐색적 요인 분석

* First author & Corresponding author, E-mail: dcha3@asu.edu
Lecturer, Gongju National University of Education, 27, Ungjin-ro, Gongju-si, Chungcheongnam-do, South Korea
** Co-author, Email: audrey.beardsley@asu.edu
Professor, Arizona State University, Tempe, AZ, 85287-1811, United States

Received: 31 May 2025, Reviewed (Revised): 10 July (21 July) 2025, Accepted: 23 July 2025
© 2025 Korean Music Education Society.

Ⅰ. Introduction

Within the academic sphere, the well-being of higher educators stands as a crucial pillar upholding the higher educational ecosystem (Bernhard, 2016; Cheng & Lam, 2021; Koner et al., 2024). Scholars and practitioners in the field of music education can be equally susceptible to the various pressures and stressors that are inherent across other higher education settings. Therefore, it becomes imperative to thoroughly examine the complexities of burnout within our specific context to safeguard the vitality of the profession and the welfare of our community.

The COVID-19 pandemic had a significant impact on higher education, disrupting the physical and mental well-being of all types of educators, including music educators (Miksza et al., 2021). The transition to online learning, remote work, and limited research opportunities intensified stress and uncertainty experienced by faculty members, as such. While researchers recently revealed via a recent survey research study conducted in the United States (U.S.) that uncertainty about tenure, promotion, excessive workload, and remote teaching modes all contributed to heightened stress levels among music education faculty members during COVID (Cha & Amrein-Beardsley, 2024), everything now seems to be back-to-normal. Although, prolonged exposure to excessive stress may still lead to burnout among music teacher educators and, again, faculty in general (Shen & Slater, 2021; Urbina-Garcia, 2020).

Defined as a state of physical, emotional, and mental exhaustion resulting from prolonged exposure to stressors, burnout casts a shadow over the professional lives of educators (Freudenberger, 1974). Over the past few decades, the Maslach Burnout Inventory-Educators Survey (MBI-ES) has been the most useful tool to measure PreKindergarten-Grade 12 (PreK-12) teachers' burnout (Bernhard, 2016; Figueras, 2014; McLain, 2005). However, the MBI-ES fails to adequately address similar indicators for educators in higher education, such as university faculty. Despite the proliferation of research on burnout in academia (Daniel & Van Bergen, 2023; Duke et al., 2020; Pressley, 2021), a noticeable dearth exists in studies focusing specifically on music education academics, particularly in the U.S. From this perspective, via our study we examined the psychometric properties of the Copenhagen Burnout Inventory-University Faculty (CBI-UF) version for use with U.S. music education academics. Through rigorous analysis and inquiry, we sought to elucidate latent factors contributing to burnout within our context, thereby laying the groundwork for proactive measures aimed at better fostering well-being and resilience among music teacher educators across the U.S., with implications, perhaps, for other music educators across the globe.

II. Literature Review

1. Conceptualizing burnout

The World Health Organization (2019) defined burnout as a syndrome resulting from chronic workplace stress and characterized it by three dimensions: (a) feelings of energy depletion or exhaustion; (b) increased mental distance from one's job or feelings of negativism or cynicism related to one's job; and (c) reduced professional efficacy. This definition closely aligns with Freudenberger's (1974) early conceptualization of burnout as a condition marked by both physical symptoms (e.g., fatigue, headaches) and emotional dysregulation (e.g., irritability, frustration). Furthermore, the WHO's three dimensions parallel those proposed by Maslach and Jackson (1981): energy depletion aligns with emotional exhaustion; mental distance and cynicism correspond to depersonalization; and reduced efficacy mirrors the dimension of diminished personal accomplishment. Taken together, these definitions reinforce a consistent understanding of burnout as a multidimensional construct rooted in prolonged occupational stress.

2. Maslach Burnout Inventory-Educators Survey: Strengths and critiques

The MBI-ES, noted prior, consists of 22 items with three dimensions: (a) nine items for emotional exhaustion (e.g., "*I feel emotionally drained from my work*"); (b) five items for depersonalization (e.g., "*I don't really care what happens to some students*"); and (c) eight items for personal accomplishment (e.g., "*I can easily create a relaxed atmosphere with my students*") (Maslach et al., 1996). The 22 items allow participants to rate the frequency and intensity of feelings and attitudes associated with burnout on a 7-point Likert scale ranging from 0 ("*never*") to 6 ("*every day*"). Ultimately, the personal accomplishment scale and the other subscales have negative correlations (Maslach et al., 1986). Thus, higher scores on the emotional exhaustion and depersonalization subscales indicate higher degrees of burnout, while lower scores on the personal accomplishment subscale correspond to a low degree of burnout. Each subscale has three demarcations—low, moderate, and high—with cut-off points for the MBI-ES (Maslach et al., 1996). Levels of emotional exhaustion are categorized as follows: scores from 0 to 16 indicate low levels, 17 to 26 represent moderate levels, and 27 or above reflect high levels. Depersonalization is considered low with scores ranging from 0 to 8, moderate from 9 to 13, and high at 14 or above. A lack of personal accomplishment is classified as low for scores between 0 and 30,

moderate for scores from 31 to 36, and high for scores of 37 or above. Notably, higher personal accomplishment scores reflect lower levels of burnout.

As noted, though, while the initial concept of teachers' burnout has been assessed by the MBI-ES (Maslach et al., 1996), it has been primarily used to assess PreK-12 teachers. Related, several researchers have criticized the MBI-ES, for instance, noting that the relationship between the MBI-ES and the definition of burnout is unclear or incompatible (Bianchi & Sowden, 2022; Kristensen et al., 2005). In addition, its three dimensions (i.e., emotional exhaustion, depersonalization, and a lack of personal accomplishment) are not independent (Schaufeli & Buunk, 2003; Taris et al., 2005). The interconnected nature of these dimensions, rather, suggests that they should not be examined in isolation. Furthermore, the MBI-ES is inaccessible, as copyrighted by a commercial company (Halbesleben & Demerouti, 2005; Kristensen et al., 2005) which makes the instrument relatively inaccessible. Such lack of access has led to difficulties in performing burnout research, especially with different populations, such as university professors in higher education, as well as music education. Although previous studies have documented the causes and symptoms of burnout in general educators—such as emotional fatigue due to heavy workload and student-related stressors—little is known about whether these same patterns hold for music teacher educators, who face distinct disciplinary and institutional challenges.

3. Copenhagen Burnout Inventory: A viable alternative and its adaptation

Despite the limitations of the MBI-ES, researchers of empirical studies have nevertheless continued to examine burnout among academics in general (Sabagh et al., 2018). Findings from these studies suggest a growing prevalence of faculty burnout, leading to a decreasing interest in pursuing careers in academia. Since 2005, a non-commercial burnout survey, the Copenhagen Burnout Inventory (CBI; Kristensen et al., 2005) has been widely used in different countries across a wide range of settings and samples as an alternative to the MBI-ES (Andrew Chin et al., 2018, Lapa et al., 2018; Mahmoudi et al., 2017). The CBI contains 19 items measuring three subdimensions of burnout: (a) personal burnout, (b) work-related burnout, and (c) client-related burnout (CB). The personal burnout subscale with six items is defined as "the degree of physical and psychological fatigue and exhaustion experienced by the person" (Kristensen et al., 2005, p. 197; e.g., "*How often do you feel tired*?"). The work-related burnout subscale with seven items represents "the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work" (p. 197; e.g., "*Do you feel worn out at the end of*

the working day?"). The CBI subscale with six items refers to "the degree of physical and psychological fatigue and exhaustion that is perceived by the person as related to his/her work with clients" (p. 197; e.g., "*Are you tired of working with clients?*").

In the context of PreK-12 education, akin to the studies conducted on the MBI-ES, a considerable number of researchers have consistently demonstrated that the CBI has good psychometric properties, as evidenced by high levels of internal consistency for the three dimensions of burnout, with personal burnout ranging from .83 to .91, work-related burnout ranging from .78 to .89, and client-related burnout ranging from .79 to .90 (Avanzi et al., 2018; Fiorilli et al., 2015; Johnson & Naidoo, 2017; Milfont et al., 2008; Piperac et al., 2019; Samaraweera et al., 2018). In higher education contexts, though, and also akin to the studies conducted on the MBI-ES, a relatively smaller number of researchers have confirmed similar evidence on the psychometric properties of the CBI (Sestili et al., 2018) with personal burnout at a = .89, work-related burnout at a = .87, and client-related burnout at a = .84. However, Sestili et al. (2018), for example, examined medical professors' burnout in Italy, and Taka et al. (2016) examined university professors' burnout in Japan.

While the MBI-ES has traditionally been utilized to assess burnout, its limitations in clarity, accessibility, and applicability to diverse populations have prompted researchers to explore alternative measures. The CBI has emerged as a promising alternative due to its non-commercial nature, demonstrated psychometric properties, and broader applicability across various contexts. By dividing client-related burnout into two sub scales (i.e., colleague-related and student-related burnout), transitioning from the MBI-ES to the CBI aligns with the evolving landscape of burnout research and may allow for a more comprehensive understanding of burnout dynamics among specific academic populations, such as music education academics. Furthermore, the limited research on faculty burnout in higher education settings (Dinis, 2022; Sestili et al., 2018), coupled with the absence of studies on burnout among music education academics in the U.S., underscored a large gap in knowledge. Hence, conducting a validation study on the CBI with a sample of music education academics is warranted.

In addition, the CBI-UF version proposed in our study may extend beyond the traditional CBI dimensions. While the original version of the CBI consisted of 19 items designed to measure three sub-dimensional aspects of burnout (Kristensen et al., 2005), the CBI-UF encompassed four dimensions: (a) personal burnout, (b) work-related burnout, (c) colleague-related burnout, and (d) student-related burnout. This expansion of dimensions allowed for a more nuanced exploration of burnout experiences among music education academics, capturing the distinct challenges and

stressors they face in their academic roles.

Conducting research to measure and understand burnout among music teacher educators is essential for addressing this set of academics' well-being and job satisfaction, especially as they, too, are often marginalized as faculty of more marginalized, or less core content areas. Engaging in this work, collectively, should ultimately lead to more positive impacts on the educational experiences and achievements of pre-service and in-service music teachers, as well as the students they serve. Besides, addressing faculty burnout can positively impact academic performance and quality, even resulting in retention or attrition of academic experts. Therefore, the primary purpose of this study was to determine whether the CBI-UF can be a valid and reliable tool for measuring burnout in music teacher educators. This present study sought to evaluate the instrument's applicability to the specific context of music teacher educators, particularly by including subdimensions such as colleague-related and student-related burnout. By concentrating on such a specific population, we sought to contribute to novel insights into the complexities of burnout dynamics in higher education, particularly within the unique context of music teacher education programs. As such, we examined three research questions:

Research question 1: How many factors were extracted via the exploratory factor analysis (EFA) we conducted to identify burnout dimensions among U.S. music education academics?

Research question 2: What specific factors emerged from the EFA as contributors to burnout among music teacher educators, and how did these factors differ from traditional conceptualizations of burnout?

Research question 3: Based on the results of the EFA, how valid and reliable was the CBI-UF for measuring personal-related, work-related, colleague-related, and student-related burnout among music teacher educators?

III. Method

We collected data for this study via *Qualtrics*, an online survey platform, as per general practices in survey research analysis (Bryson et al., 2012; Nardi, 2018; Suskie, 1996). Important to note is that we conducted this study in the post-COVID era, specifically in April 2023.

1. Sample

After obtaining Institutional Review Board (IRB) approval, we used the online National Association of Schools of Music (NASM) Institutional Directory to identify all institutions in the US accredited to certify music teachers. We collected the email addresses of affiliated music education faculty members (i.e., those primarily teaching music teacher preparation courses), including adjunct, assistant, associate professors, lecturers, and professors. We sent a personalized invitation email to our target population. Of the 788 we emailed, 253 (32.1%) competed the survey instrument. As per Pett et al. (2003), we determined our sample size as sufficient for the participant-to-variable ratios, 10-to-1.

As illustrated in Table 1, participants consisted of approximately equal representation between female (50%) and males (49.6%). Most participants were White (90.98%) and predominantly affiliated with public institutions (71.94%). The distribution of academic position included adjunct professors (3.56%), assistant professors (31.62%), associate professors (23.72%), lecturers (9.88%), and professors (31.23%) (see Table 1 for details).

<Table 1> Demographics of the sample

Variable	Categories	Frequency	Percent
Gender	Female	125	50
	Male	124	49.6
	Other	1	0.4
	Total	250	100
Ethnicity	African American	5	2.05
	Asian	6	2.46
	Hispanic	9	3.69
	White	222	90.98
	Bi-racial	2	0.82
	Total	244	100
Institution	Private	71	28.06
	Public	182	71.94
	Total	253	100
Academic Position	Adjunct	9	3.56
	Assistant professor	80	31.62
	Associate professor	60	23.72
	Lecturer	25	9.88
	Professor	79	31.23
	Total	253	100

2. Measures

Recall that while the original version of the CBI consisted of 19 items designed to measure three sub-dimensional aspects of burnout (Kristensen et al., 2005), the CBI-UF (i.e., the university faculty version) of interest in this study has four dimensions, three of which were noted prior: (a) personal burnout, (b) work-related burnout, (c) colleague-related, and (d) student-related burnout. Although the original CBI included a single "client-related burnout" subscale, we adapted the instrument for university faculty by generating item variants targeting interpersonal fatigue in relation to students and colleagues, respectively. These items were not pre-assigned to categories but were randomly ordered and subjected to exploratory factor analysis (EFA), from which the student-related and colleague-related dimensions emerged as distinct, empirically supported constructs.

The CBI-UF version contains 25 items, and we deliberately mixed them up to examine the factor structure underlying the CBI-UF version. As recommended by Kristensen et al (2005), we scored responses to each item using a five-point scale: "*Always*"=4, "*Often*"=3, "*Sometimes*"=2, "*Seldom*"=1, and "*Never*"=0, and we coded all responses from 0-to-100 in increments of 25 (see Table 2).

<Table 2> The CBI-UF version

	Always (4)	**Often (3)**	**Sometimes (2)**	**Seldom (1)**	**Never (0)**
Q1. Are you tired of working with students?					
Q2. Are you exhausted in the morning at the thought of another day at work?					
Q3. Do you find it hard to work with your students?					
Q4. Do you find it frustrating to work with your colleagues?					
Q5. How often are you emotionally exhausted?					
Q6. Do you find it hard to work with your colleagues?					
Q7. How often are you physically exhausted?					
Q8. Does your work frustrate you?					
Q9. Do you feel worn out at the end of the working day?					
Q10. How often do you feel weak and susceptible to illness?					
Q11. Do you sometimes wonder how long you will be able to continue working with your colleagues?					
Q12. Do you feel that you give more than you get back when you work with your students?					
Q13. Do you feel that every working hour is tiring for you?					
Q14. How often do you feel tired?					

<Table 2> Continued

	Always (4)	Often (3)	Sometimes (2)	Seldom (1)	Never (0)
Q15. Do you sometimes wonder how long you will be able to continue working with your students?					
Q16. Does it drain your energy to work with your colleagues?					
Q17. Are you tired of working with colleagues?					
Q18. How often do you feel worn out?					
Q19. Do you have enough energy for family and friends during leisure time? (inverse scoring)					
Q20. Do you find it frustrating to work with your students?					
Q21. Is your work emotionally exhausting?					
Q22. Do you feel burnt out because of your work?					
Q23. How often do you think: “I can’t take it anymore”?					
Q24. Does it drain your energy to work with your students?					
Q25. Do you feel that you give more than you get back when you work with your colleagues?					

Note. Participants are asked to respond to the CBI-UF using a 5-point Likert scale which includes response options ranging from 0 ("*never*") to 4 ("*always*"). The responses are converted into percentages of time. These percentages range from 0 (“*never*”) to 100% (“*always*"). To calculate the score for each dimension, the average percentage score is computed for the questions related to that specific dimension.

3. Analytical methods

1) Structural validity

We performed an EFA using the Statistical Package for the Social Sciences (SPSS) to determine the underlying subdimensions of the CBI-UF for the U.S. music teacher educators who participated in this study. Although previous researchers (Milfont et al., 2007; Sestili et al., 2018; Taka et al., 2016; Wood et al., 2020) described one’s burnout as having a three-factor construct (i.e., personal burnout, work-related burnout, and client-related burnout), we opted to use an EFA given the lack of previous exploration of the CBI-UF version, and no clear delineation of subscales on university faculty members’ burnout. Moreover, we modified client-related burnout into two subscales (i.e., colleague-related burnout and student-related burnout) given the nature of interpersonal relationships in academics (Chory & Offstein, 2017; Karpouze & Emvalotis, 2019; Sabagh et al., 2018). More specifically, despite the previous conceptualization of client-related burnout (Sestili et al., 2018; Taka et al., 2016), we found it necessary to modify

this dimension into colleague-related burnout and student-related burnout. Our decision was driven by the unique interpersonal dynamics typically present in academic settings. Faculty members often interact closely with both colleagues and students, and each type of relationship can contribute differently to their experience of burnout. By delineating colleague-related and student-related burnout, we aimed to capture the distinct aspects of interpersonal relationships that influence faculty burnout within the academic context.

Prior to our analysis, we conducted the screening of CBI-UF's 25 items for multicollinearity. We removed items #4 and #17 due to their high correlations with one another ($r \geq .80$; see also Pett et al., 2003), leaving 23 items for further analyses. The Kaiser-Meyer-Olkin adequacy indicator was solid (KMO = .935; see also Kaiser, 1974) and Bartlett's test of sphericity was significant ($x2(253) = 4237.578$, $p = .000$; see also Bartlett, 1954), supporting the suitability of conducting an EFA using the full set of 23 items we retained. Thus, we performed an EFA to determine the underlying subdimensions per construct, again, due to the lack of previous explorations of the measure and no clear delineations of subscales on university faculty members' burnout.

Then, we used a principal axis factoring (PAF) analysis as the factor extraction method to determine the distinctiveness of our burnout constructs. Next, we estimated and selected the number of latent factors via the following two empirical aids: (a) a scree plot (Cattell, 1966), and (b) minimum average partial (MAP) test (Velicer, 1976). Last, once we determined the appropriate number of factors, we evaluated our proposed model with the extracted factors and checked the individual variable loadings using a direct oblimin rotation method to foster interpretability (Jennrich & Sampson, 1966; see also Brown, 2015). We interpreted the latent factors by determining which item(s) to eliminate in terms of statistical guidelines or theoretical backgrounds.

2) Reliability

We also calculated Cronbach's alpha estimates to assess internal consistency of the final factor solution of CBI-UF. We considered each alpha value of .7 or greater acceptable (Tavakol & Dennick, 2011).

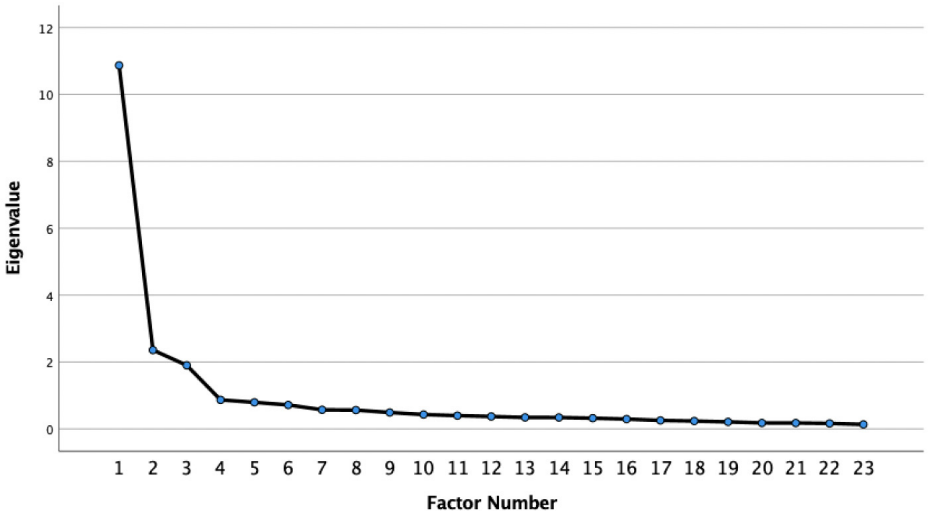
IV. Results

1. Factor extraction

Our PAF analysis yielded the extraction of three factors with eigenvalues exceeding 1.0. The first factor accounted for 45.6% of the variance before rotation, and the second and third factors added 8.7% and 6.6%, respectively. Thus, three factors accounted for 60.9% of the variance of our 23 measured variables.

2. Factor retainment

A series of our factor selection methods all revealed that these three factors should have been retained, as such. The examination of our scree plot (see Figure 1) highlighted the breaking point in the dataset where the curve started to flatten out, suggesting that, indeed, we should have retained the three factors we did (Costello & Osborne, 2005). Further evidence for the MAP test also confirmed a three-factor solution. Thus, we evaluated a model with three factors for interpretability and conceptual meaningfulness.



[Figure 1] Scree plot of the eigenvalues of the factors

3. Factor rotation and interpretation

The factor correlation matrix exceeded .32 (Tabachnick & Fidell, 2019), which confirmed the appropriateness of using an oblique rotation for this study. The results of our oblimin rotation using our PAF produced a final interpretable solution along with statistical criteria for determining whether to include or delete an item, including factor loadings in the pattern matrix and structure matrix. Pedhazur and Schmelki (1991) recommended the interpretation of the pattern matrix when running an oblimin rotation since oblique rotation may have produced different results in factor loadings between pattern and structure matrix. In the final step of our EFA, as such, we interpreted the latent factors using a pattern matrix.

We assessed the degree to which each item represented each underlying factor via examinations of the loading values. A good factor loading, a value of .40 (Hinkin, 1998), we considered as a cutoff point for this study. Furthermore, to address potential concerns with item validity or the accuracy of the predefined factor structure, we deleted items only if cross-loading items demonstrated salient loadings (<.40) on multiple factors (Watkins, 2021).

The results of our oblimin rotation highlighted the range of the rotated factor loadings in the pattern matrix (see Table 3); the salient factor loadings in the first factor ranged from .426 to .940; those in the second factor ranged from .433 to .882; and those in the third factor ranged from -.639 to -.886. We found no cross-loadings among items, but we excluded one item, work-related burnout #2 ("*Does your work frustrate you?*") due to its low factor loadings on respective factor (< .40). In addition, we deleted another item, personal burnout #7 ("*How often do you think: I can't take it anymore?*"). Despite its salient loadings, this item did not conceptually align with the proposed subdimension, colleague-related burnout (see Table 4).

<Table 3> The rotated factor loadings in the pattern matrix

Item description	Factor 1 Work and daily life-related burnout	Factor 2 Colleague-related burnout	Factor 3 Student-related burnout
PB#2. Physical exhaustion frequency	**.940**	-.137	.136
PB#4. Frequency of tiredness	**.886**	-.034	.098
PB#5. Frequency of feeling worn out	**.848**	.010	-.053
WB#3. End-of-day fatigue	**.684**	.017	-.120
PB#3. Susceptibility to illness	**.663**	-.079	.005
PB#1. Emotional exhaustion frequency	**.637**	.214	-.130
WB#1. Morning exhaustion	**.617**	.182	-.124
PB#6. Leisure time energy for family and friends (reverse scoring)	**.518**	.109	-.067
WB#6. Burnout due to work	**.477**	.359	-.219
WB#5. Emotional exhaustion from work	**.451**	.224	-.231
WB#4. Tiring working hours	**.426**	.172	-.328
CB#3. Energy drain from working with colleagues	.019	**.882**	.010
CB#1. Difficulty working with colleagues	-.055	**.852**	.070
CB#4. One-sided effort with colleagues	-.004	**.786**	.090
CB#2. Concerns about future work with colleagues	-.002	**.753**	-.163
PB#7. Frequency of feeling overwhelmed	.262	**.433**	.266
SB#5. Frustration with students	-.054	-.056	**-.886**
SB#2. Difficulty working with students	-.036	-.061	**-.811**
SB#1. Student fatigue	-.037	-.001	**-.743**
SB#6. Energy drain from working with students	.110	-.057	**-.738**
SB#3. One-sided effort with students	.067	.013	**-.684**
SB#4. Concerns about future work with students	.021	.152	**-.639**
WB#2. Work-related frustration	.257	.307	-.310

Note. Bolded values signify the items that load on each factor.

<Table 4> Excluded items and reasons for deletion

Item description	Reasons for Exclusion
WB#2 Does your work frustrate you?	Low factor loading (<.40)
PB#7 How often do you think: “I can’t take it anymore?”	Conceptual misalignment

We ultimately labeled Factor 1 as *work and daily life-related burnout* with 11 items, Factor

2 as *colleague-related burnout* with four items, and Factor 3 *as student-related burnout* with six items. Therefore, the final CBI-UF version scale included a three-factor solution with 21 items (see Table 5 for our final version of the CBI-UF), as opposed to the four-factor solution originally posited.

<Table 5> Final questionnaire of the CBI-UF version

Factor	Item	Always (4)	Often (3)	Sometimes (2)	Seldom (1)	Never (0)
Work and daily life -related burnout	1. Are you exhausted in the morning at the thought of another day at work?					
	2. How often are you emotionally exhausted?					
	3. How often are you physically exhausted?					
	4. Do you feel worn out at the end of the working day?					
	5. How often do you feel weak and susceptible to illness?					
	6. Do you feel that every working hour is tiring for you?					
	7. How often do you feel tired?					
	8. How often do you feel worn out?					
	9. Do you have enough energy for family and friends during leisure time? (inverse scoring)					
	10. Is your work emotionally exhausting?					
	11. Do you feel burnt out because of your work?					
Colleague -related burnout	1. Do you find it hard to work with your colleagues?					
	2. Do you sometimes wonder how long you will be able to continue working with your colleagues?					
	3. Does it drain your energy to work with your colleagues?					
	4. Do you feel that you give more than you get back when you work with your colleagues?					

<Table 5> Continued

Factor	Item	Always (4)	Often (3)	Sometimes (2)	Seldom (1)	Never (0)
Student-related burnout	1. Are you tired of working with students?					
	2. Do you find it hard to work with your students?					
	3. Do you feel that you give more than you get back when you work with your students?					
	4. Do you sometimes wonder how long you will be able to continue working with your students?					
	5. Do you find it frustrating to work with your students?					
	6. Does it drain your energy to work with your students?					

4. Internal consistency

The Cronbach's alpha estimates were .94, .89, and .88 for the work-life related burnout, colleagues related burnout, and student related burnout, respectively. The alpha coefficient for the overall scale of our final version was excellent (a = .94).

Given these results, we concluded that the three-factor solution was the most appropriate structural representation of the CBI-UF with a sample of the U.S. music education academics who participated in this study. Again, our findings here were opposed to the four-factor solution originally posited. Moreover, the three-factor model demonstrated robustness across a series of extraction, rotation methods and as per all reliability indicators calculated, even when we replaced missing data using mean imputation methods. This was true for the music teacher educators who participated in this study. However, it is plausible that the four-factor structure initially posited would possibly or likely hold for other subsamples of the original population for which this instrument was originally developed and validated.

V. Discussion and Implications

This current validation study, to date, is the first major research study situated as potentially foundational for future studies where other researchers in the field of music education, with similar interests in measuring music educator burnout and other working conditions using what we deemed and evidenced as a valid and reliable version of the CBI-UF. Recall that we chose the CBI-UF scale to test it using a sample of U.S. music teacher educators and psychometrically evaluate its factorial structure based on evidence gathered from structural validity (i.e., principal axis factoring, a scree plot, minimum average partial test, direct oblimin rotation method) and reliability (i.e., internal consistency). We administered the CBI-UF scale to an adequate sample (N = 253) to explore its latent structure. The result of our EFA revealed that we obtained a three-factor solution with 21 items.

The emergence of this three-factor solution challenged the originally proposed four-factor structure, suggesting that the experiences of music education academics in the U.S. will likely be better understood through these three distinct dimensions of burnout. In addition, our findings structurally contradicted previous validation studies (Sestili et al., 2018; Taka et al., 2016), given that the results of our present study suggested personal burnout and work-related burnout items were a function of one exclusively amalgamated factor structure: work and life related burnout with 11 items. This suggests that academic burnout and burnout related to daily life are not separate entities, but rather they exist on a continuum, for music educators who participated in this study, and even in a post-COVID context. Notwithstanding, the intertwining of work and daily life-related burnout implies that experiences in the workplace significantly impact one's overall well-being beyond the confines of professional duties. This convergence of personal and professional domains may, in part, be explained by structural demands within American higher education and discipline-specific characteristics of music education. Koner and Gee (2024), for example, reported that music teacher educators encounter significant pressures to publish, often beginning during their doctoral training, and described peer review experiences as emotionally taxing. When coupled with the irregular hours and performance-related responsibilities inherent to music teaching, these demands may further contribute to the erosion of boundaries between work and daily life, resulting in a more unified experience of burnout.

Our findings, as such, strengthened the notion that there exists an intrinsic connection between academic and personal facets, which encapsulates the lives of music teacher educators in terms of their subjective experiences of weariness and exhaustion. By aligning the academic and

personal dimensions of faculty's lives, accordingly, our findings underscore the intertwined nature of these domains, highlighting the profound impact of burnout in both realms on overall well-being. Exploring the CBI-UF version through other research methods, such as mixed-methods approaches, for example, to further explore the variables that music educators believe contribute to burnout as per the factor structure evidenced herein, could further validate the factor structure and help us better understand the nuanced experiences in work and daily life-related burnout of music education academics.

The differentiation of colleague-related burnout and student-related burnout reflects the unique challenges encountered within interpersonal dynamics in academia. Colleague-related burnout encompassed factors specific to interactions with peers, such as workload distribution and interpersonal conflicts, while student-related burnout relates to challenges arising from interactions with students, including academic demands and emotional support. The robustness of these factors was evidenced by their satisfactory internal consistency (Cronbach's alpha = .89 and .88, respectively).

Researchers of previous studies on university faculty members generally paid attention to student-related burnout (Sestili et al., 2018; Taka et al., 2016), overlooking colleague-related burnout. Future researchers could delve deeper into these specific dimensions to gain a more comprehensive understanding of the challenges faced by music teacher educators. Additionally, exploring the interaction between colleague-related and student-related burnout and their impact on overall burnout levels could provide valuable insights for developing more targeted interventions and support systems within academic institutions. Furthermore, conducting a more comprehensive examination of the correlations among burnout experienced by colleagues and burnout experienced by students, and their influence on overall burnout levels, could yield significant findings that can contribute to the formulation of more focused interventions and support structures within educational establishments. This, in turn, could help facilitate the development of more efficient approaches to tackle burnout among music teacher educators.

Moreover, prolonged exhaustion may trigger intention to leave academia (Spoon et al., 2023). Probably, a myriad of stressors during COVID-.19, including excessive workload and remote teaching, pandemic affected attrition rates of U.S music teacher educators (Cha & Amrein-Beardsley, 2024). In the context of the post COVID-19 era, our findings portray that burnout factors, such as work and life related, colleague-related, student-related, significantly affect U.S. music teacher educators' qualities of life, which all can serve as (de)motivational factors in academia. Hence, understanding the implications of these burnout factors on the quality of life of U.S. and other music teacher educators is crucial, especially for institutional leaders

seeking to support their faculty members more effectively. Recognizing the intertwined nature of academic and personal dimensions in educators' lives underscores the need for institutional leaders to prioritize strategies that address both professional responsibilities and personal well-being. By implementing more supportive measures and interventions aimed at mitigating burnout risk factors, institutional leaders can better cultivate healthier and more sustainable environments for music teacher educators, ultimately enhancing the quality of music education for students.

Finally, our study highlights the need for further investigation into these and other factors contributing to burnout among music teacher educators. Future researcher might also explore, as such, the longitudinal trajectories of burnout and the effectiveness of various interventions in mitigating burnout risk factors. Additionally, our study highlights the importance of further research into the resilience and recovery processes following burnout among music teacher educators. Investigating factors that contribute to resilience and exploring interventions aimed at enhancing recovery could provide valuable insights for creating more effective support systems within educational institutions. Understanding how educators bounce back from burnout experiences can also lead to the development of strategies that promote resilience and facilitate the maintenance of healthy work-life balance, ultimately contributing to the well-being of music teacher educators and the quality of music education for students. While this study focused on the US music teacher educators, these research directions are also highly relevant in other cultural contexts, such as Korea, where music teacher educators face similar pressures related to workload, research, and interpersonal dynamics. Applying the CBI-UF in Korean settings could support more accurate assessments of burnout and guide contextually appropriate interventions, contributing to improved educator well-being both locally and globally.

VI. Conclusion

The CBI-UF scale confirmed a three-factor solution with 21 items via an EFA. The final scale proved to be both reliable (internal consistency) and valid (structural validity). Accordingly, the validation of the CBI-UF scale with a U.S. sample of music teacher educators provides a solid foundation for future research endeavors aimed at enhancing the quality of music education and supporting the well-being of music educators, especially in the post-COVID era, and beyond. The importance of developing, implementing, and using a valid and reliable measurement for

assessing burnout among educators, and in this case burnout among music teacher educators, clearly lies in any instrument users' abilities to identify the well-being and job satisfaction of such professionals. Burnout experienced by music education academics, of primary focus in this study, can have detrimental effects on their personal lives, job productivity (e.g., scholarly research), and overall teaching quality. Consequently, this can directly influence the educational experiences and outcomes of music educators, as well as their students in Pre-K-12 settings. By introducing a context-sensitive and empirically grounded measurement tool, this study offers new directions for research, leadership, and policy in music education. The findings underscore the urgent need for institutional accountability and long-term strategies to support the professional sustainability and personal well-being of music teacher educators.

References

Andrew Chin, R. W., Chua, Y. Y., Chu, M. N., Mahadi, N. F., Wong, M. S., Yusoff, M. S. B., & Lee, Y. Y. (2018). Investigating validity evidence of the Malay translation of the Copenhagen Burnout Inventory. *Journal of Taibah University Medical Sciences, 13*, 1–9.

Avanzi, L., Fraccaroli, F., Castelli, L., Marcionetti, J., Crescentini, A., Balducci, C., & van Dick, R. (2018). How to mobilize social support against workload and burnout: The role of organizational identification. *Teaching and Teacher Education, 69*, 154–167.

Bernhard, H. C. (2016). Investigating burnout among elementary and secondary school music educators: A replication. *Contributions to Music Education, 41*, 145–156.

Bianchi, R., & Sowden, J. F. (2022). A paradigm shift from burnout to occupational depression. *Journal of Affective Disorders, 303*, 230-232.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford Publications.

Bryson, G. L., Turgeon, A. F., & Choi, P. T. (2012). The science of opinion: survey methods in research. *Canadian Journal of Anesthesia/Journal Canadien D'anesthésie, 59*(8), 736–742.

Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research, 1*(2), 245–276.

Cha, D., & Amrein-Beardsley, A. (2024). A survey research study of music education

faculty: Demographics as related to indicators of job satisfaction and stress. *International Journal of Music Education, 42*(2), 178–190.

Cheng, L., & Lam, C. Y. (2021). The worst is yet to come: The psychological impact of COVID-19 on Hong Kong music teachers. *Music Education Research, 23*(2), 211–224.

Chory, R. M., & Offstein, E. H. (2016). "Your professor will know you as a person.". *Journal of Management Education, 41*(1), 9–38.

Costello, A., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation*, *10*(1), 1–9.

Daniel, E., & Van Bergen, P. (2023). Teacher burnout during COVID-19: Associations with instructional self-efficacy but not emotion regulation. *Teachers and Teaching, 29*(3), 310–328.

Duke, N. N., Gross, A., Moran, A., Hodsdon, J., Demirel, N., Osterholm, E., Sunni, M., & Pitt, M. B. (2019). Institutional factors associated with burnout among assistant professors. *Teaching and Learning in Medicine, 32*(1), 61–70.

Figueras, E. J. (2014). *Constructing and contextualizing a multi-dimensional burnout profile of high school music teachers.* Doctoral dissertation, Boston University.

Fiorilli, C., Se Stasio, S., Benevene, P., Iezzi, D. F., Pepe, A., & Albanese, O. (2015). Copenhagen burnout inventory: A vali- dation study in an Italian teacher group. *TPM, 22*, 537–551.

Freudenberger, H. J. (1974). Staff burn-out. *Journal of Social Issues, 30*(1), 159–165.

Halbesleben, J. R. B., & Demerouti, E. (2005). The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. *Work & Stress, 19*(3), 208–220.

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1*(1), 104–121.

Jennrich, R. I., & Sampson, P. F. (1966). Rotation for simple loadings. *Psychometrika, 31*(3), 313–323.

Johnson, S., & Naidoo, A. (2017). Can evolutionary insights into the brain's response to threat suggest different group interventions for perceived stress and burnout of teachers in high-risk schools? *South African Journal of Psychology, 47*, 401–415.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*, 31-36.

Koner, K., & Gee, J. (2024). Publishing preparation, experiences, and expectations of music

education faculty in higher education. *Journal of Research in Music Education, 73*(2), 137–158.

Koner, K., Potter-Gee, J., & Borden, B. (2024). Female music educators' stress and well-being in the height of a global pandemic in the United States. *International Journal of Music Education, 42*(2), 217-229.

Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19*(3), 192-207.

Lapa, T., Carvalho, S., Viana, J., Ferreira, P. L., Pinto-Gouveia, J., & Cabete, A. B. (2018). Development and evaluation of global burnout index derived from the use of the Copenhagen Burnout Inventory in Portuguese physicians. *Acta Médica Portuguesa, 31*, 534–541.

Mahmoudi, S., Atashzadeh-Shoorideh, F., Rassouli, M., Moslemi, A., Pishgooie, A. H., & Azimi, H. (2017). Translation and psychometric properties of the Copenhagen Burnout Inventory in Iranian nurses. *Iranian Journal of Nursing and Midwifery Research, 22*, 117–122.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior, 2*(2), 99–113.

Maslach, C., Jackson, S. E., & Schwab, R. L. (1996). *Maslach Burnout Inventory–Educators Survey (MBI-ES)*. In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.), *MBI manual* (3rd ed.). Consulting Psychologists Press.

Maslach, C., Jackson, S. E., Leiter, M. P., Schaufeli, W. B., & Schwab, R. L. (1986). *Maslach burnout inventory* (Vol. 21, pp. 3463-3464). Palo Alto, CA: Consulting psychologists press.

McLain, B. P. (2005). Environmental support and music teacher burnout. *Bulletin of the Council for Research in Music Education, 164*, 71–84.

Miksza, P., Parkes, K., Russell, J. A., & Bauer, W. (2021). The well-being of music educators during the pandemic spring of 2020. *Psychology of Music, 50*(4), 1152–1168.

Milfont, T. L., Denny, S., Ameratunga, S., Robinson, E., & Merry, S. (2008). Burnout and wellbeing: Testing the Copenhagen Burnout Inventory in New Zealand teachers. *Social Indicators Research*, *89*, 169–177.

Nápoles, J. (2021). Burnout: A review of the literature. *Update: Applications of Research in Music Education, 40*(2), 19–26.

Pedhazur, E., & Schmelkin, L. (1991). *Measurement, design and analysis: an integrated*

approach. Holt, Rinehart & Winston.

Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis: The use of factor analysis for instrument development in health care research*. Sage.

Piperac, P., Terzic-Supic, Z., Todorovic, J., Maksimovic, A., Karic, S., & Santric-Milicevic, M. (2019). Copenhagen Burnout Inventory on a national representative sample of pre-school teachers. *European Journal of Public Health, 29*, 67.

Pressley, T. (2021). Factors contributing to teacher burnout during COVID-19. *Educational Researcher, 50*(5), 325–327.

Sabagh, Z., Hall, N. C., & Saroyan, A. (2018). Antecedents, correlates and consequences of faculty burnout. *Educational Research, 60*(2), 131–156.

Samaraweera, D., Hamid, J. A., Khatibi, A. A., Ferdous Azam, S. M., & Dharmaratne, I. (2018). Measuring burnout of human service workers: Testing the Copenhagen Burnout Inventory in Shri Lankan context. *European Journal of Education Studies*, *4*, 153–161.

Schaufeli, W. B., & Buunk, B. P. (2003). Burnout: An overview of 25 years of research and theorizing. In M. J. Schabracq, J. A. M. Winnubst & C. L. Cooper (Eds.), *The handbook of work and health psychology* (2nd ed., pp. 282–424). Wiley.

Sestili, C., Scalingi, S., Cianfanelli, S., Mannocci, A., Del Cimmuto, A., De Sio, S., Chiarini, M., Di Muzio, M., Villari, P., De Giusti, M., & La Torre, G. (2018). Reliability and use of Copenhagen burnout inventory in Italian sample of university professors. *International Journal of Environmental Research and Public Health, 15*, 1708-1718.

Shen, P., & Slater, P. (2021). The effect of occupational stress and coping strategies on mental health and emotional well-being among university academic staff during the COVID-19 outbreak. *International Education Studies, 14*(3), 82-95.

Spoon, K., LaBerge, N., Wapman, K. H., Zhang, S., Morgan, A., Galesic, M., Fosdick, B., Larremore, D., & Clauset, A. (2023). Gender and retention patterns among U.S. faculty. *Science Advances, 9*(42), 1-12.

Suskie, L. A. (1996). *Questionnaire survey research: What works* (2nd ed.). Tallahassee, FL: The Association for Institutional Research.

Tabachnick, B. G., & Fedell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.

Taka, F., Nomura, K., Horie, S., Takemoto, K., Takeuchi, M., Takenoshita, S., Murakami, A., Hirake, H., Okinaga, H., & Smith, D. R. (2016). Organizational climate with gender equity and burnout among university academics in Japan. *Industrial Health, 54*(6), 480–487.

Taris, W. T., Le Blanc, P. M., Schaufeli, W. B. (2005) Are there causal relationships between the dimensions of the Maslach Burnout Inventory? A review and two longitudinal tests. *Work & Stress, 19*(3), 238–255.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*, 53-55.

The World Health Organization. (2019). *Burn-out an "occupational phenomenon": International Classification of Diseases*.

Urbina, A. (2020). What do we know about university academics' mental health? A systematic literature review. *Stress and Health, 36*(5), 563-585.

Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika, 41*(3), 321–327.

Watkins, M. W. (2021). *A step-by-step guide to exploratory factor analysis with SPSS*. Routledge.

Wood, B. A., Guimaraes, A. B., Holm, C. E., Hayes, S. W., & Brooks, K. R. (2020). Academic librarian burnout: A survey using the Copenhagen Burnout Inventory (CBI). *Journal of Library Administration, 60*(5), 512-531.