

**Effects of ethnic discrimination on psychological well-being and engagement among teachers of refugee background: Self-efficacy and autonomy as mediation pathways**

Authors: \*David Kunyu<sup>1</sup>, Loise Gichuhi<sup>2</sup>, Charles Obiero<sup>3</sup>

*Social Psychology of Education*

<sup>1</sup>Europa Universität Flensburg

Center for Educational, Teaching, School, and Socialization Research (ZEBUSS)

Flensburg, Germany

ORCID: [0000-0003-1710-2049](https://orcid.org/0000-0003-1710-2049)

<sup>2</sup>The University of Nairobi

School of Education

ORCID [0000-0001-8847-0338](https://orcid.org/0000-0001-8847-0338)

Email: [loise.wambui@uonbi.ac.ke](mailto:loise.wambui@uonbi.ac.ke)

<sup>3</sup>The Open University of Kenya

Konza Technopolis, Box 240-00606, Nairobi, Kenya

ORCID: [0000-0001-6431-0532](https://orcid.org/0000-0001-6431-0532)

Email: [cobiero@ouk.ac.ke](mailto:cobiero@ouk.ac.ke)

**Corresponding author:**

\*David Kunyu

Europa Universität Flensburg

Mitscherlich-Nielsen-Straße 2e, D- 24943 Flensburg

E-Mail: [david.kunyu@uni-flensburg.de](mailto:david.kunyu@uni-flensburg.de)

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## Abstract

Ethnic discrimination among workers, including teachers, is associated with poor psychological well-being and lower work engagement; however, less is known about these associations among teachers with a refugee background, particularly the processes underlying them. In this study, we investigate (1) whether higher ethnic discrimination and lower self-efficacy and autonomy relate to poor psychological well-being and school engagement among teachers of refugee background, and (2) whether lower self-efficacy and autonomy mediate the negative effects of ethnic discrimination on psychological well-being and engagement. Our study context is Kakuma refugee camp in Kenya, and our sample includes 143 teachers of refugee background (23% female,  $M_{age} = 27.63$  years,  $SD = 4.66$ ) from 38 schools. In our findings, teachers who experienced discrimination reported higher depressive symptoms, anxiety, and burnout, and lower school engagement. Teachers with higher self-efficacy reported greater psychological well-being (i.e., lower depressive symptoms, anxiety symptoms, and burnout), but there were no associations with school engagement. Higher autonomy was linked to lower depressive symptoms and burnout, as well as higher school engagement, but there were no associations with anxiety. More importantly, we found some indirect effects through self-efficacy and not through autonomy. Lower self-efficacy mediated the negative effects of ethnic discrimination on depressive symptoms and anxiety. Our findings underscore the importance of self-efficacy as a resource for teachers' psychological well-being in the face of discrimination-related stress and the need to strengthen it through targeted interventions. While there were no indirect associations, the direct associations indicate that autonomy remains a critical resource for teachers' overall well-being.

**Keywords:** Discrimination; autonomy; self-efficacy; psychological distress; school engagement; teachers of refugee background; crisis contexts

## 1. INTRODUCTION

The unprecedented rise in forced displacement worldwide (United Nations High Commissioner for Refugees (UNHCR), 2025) has reshaped the education systems in host countries, increasing not only learners of a refugee background in schools but teachers of refugee background as well. As a result, teaching workforces have become more culturally and ethnically diverse, with many individuals from refugee communities assuming teaching responsibilities to address critical teacher shortages, particularly in crisis contexts (Henderson, 2025; Kunyu et al., 2025). Teachers of refugee background<sup>1</sup> play a central role in supporting learning, imparting vital cultural knowledge, and promoting linguistic and intercultural competencies that enrich school communities by promoting diversity and inclusion (Dryden-Peterson, 2016; Juang & Chitewere, 2020; Mendenhall et al., 2019). While school is an important social and developmental setting for both learners and teachers, it is also a place where an array of risks may manifest (Schachner et al., 2018). Like other minority groups, teachers of refugee background have to cope with acculturation stress, the negative psychological effects as a result of regular intercultural contact (Berry, 2003). In this study, we focus on ethnic discrimination as a form of acculturation stress experienced by minority teachers.

Ethnic discrimination refers to unfair or unequal treatment of people because of their ethnic background, including exclusion, bias, verbal harassment, or limited access to opportunities (Education Support, 2025; Kunyu et al., 2021; Verhaeghe et al., 2024).

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<sup>1</sup> Teachers of a refugee background refers to individuals with a refugee status or who identify themselves as having a refugee background, working as teachers in schools. They may or may not have received teaching qualifications in their home or host countries (Mendenhall, 2024).

Workplace ethnic discrimination is common worldwide and is associated with employees' psychological distress in terms of higher depressive symptoms (e.g., Brouwers et al., 2016; Stone & Carlisle, 2018), including among minority and refugee teachers in school settings (e.g., Gosnell et al., 2021; Miller & Travers, 2005; Zambrana et al., 2020), and higher anxiety symptoms (e.g., Capasso et al., 2016a; Education Support, 2025; Gosnell et al., 2021; Lee et al., 2016). Research has also linked perceived discrimination to burnout among teachers (e.g., Dos Santos, 2020; Glock & Costa, 2024; Mahatmya et al., 2022) and to diminished work engagement (see Jones et al., 2009; Mori et al., 2023; Palumbo, 2024). Although teacher-based ethnic discrimination and its association with students' well-being and engagement are widely studied (e.g., for systematic and meta syntheses, see Civitillo et al., 2024; Soufi Amlashi et al., 2024), fewer studies examine how ethnic discrimination relates to psychological well-being and engagement among teachers, particularly those of refugee background in low-resource and crisis contexts. Notably, less is known about the underlying mechanisms linking discrimination to these outcomes. We therefore test whether self-efficacy and autonomy—two vital teacher resources—mediate the associations between ethnic discrimination and teachers' psychological well-being and engagement.

### **1.1 Self-efficacy and autonomy as critical resources for teacher psychological well-being and engagement**

*Self-efficacy*, as postulated by Bandura (1997) from social cognitive theory, refers to an “individual's belief in their capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). Thus, teacher self-efficacy refers to a teacher's belief in their ability to organize and execute planned activities required to achieve desired learning outcomes (Skaalvik & Skaalvik, 2010; Tschannen-Moran & Hoy, 2001). Bandura (1997) further elaborates that teacher self-efficacy as a psychological resource may be specific to different behavioral domains, such as classroom instruction strategies, learner

engagement, and classroom management (also see Nie et al., 2012; Tschannen-Moran & Hoy, 2001).

When faced with risks that threaten their psychological well-being, such as ethnic discrimination stress (Lee et al., 2016; Mahatmya et al., 2022; Zambrana et al., 2020), empirical evidence suggests that teachers with higher self-efficacy experience lower depressive symptoms (e.g., Bandura, 1997; Capone et al., 2019), lower anxiety, especially among pre-service teachers (e.g., Durdukoca & Atalay, 2019; Gorospe, 2022; Schwarzer & Hallum, 2008), and lower burnout (e.g., Capone et al., 2019; Glock & Costa, 2024; Skaalvik & Skaalvik, 2010, 2014; for a systematic review, see Brown, 2012). In addition, higher self-efficacy has been reported to predict higher school engagement among teachers (e.g., Burić & Macuka, 2018; Skaalvik & Skaalvik, 2016). These associations have a spiral effect: teachers with higher school engagement may experience sustained self-efficacy, which is critical for strengthening student motivation, engagement, and achievement. Besides, evidence shows that higher teacher self-efficacy has a ripple effect on student learning outcomes; for instance, it promotes students' self-efficacy and enjoyment (e.g., Jerrim et al., 2023).

*Teacher autonomy* refers to the need for teachers to feel like their actions are of their own volition, “the self”, and are not controlled or forced on them by external forces, “others” (Ryan & Deci, 2017). A recent meta-analysis of 102 independent samples shows that, among teachers, when satisfied, autonomy (or autonomous motivation) may yield greater teacher well-being (Slemp et al., 2020). Specifically, higher autonomy experience is linked to lower distress among workers and teachers, including depressive symptoms (e.g., Enns et al., 2015; Li, 2018; Slemp et al., 2020), anxiety (e.g., Gillet et al., 2016), and burnout (e.g., Fernet et al., 2014; Skaalvik & Skaalvik, 2014; Slemp et al., 2020; Sokmen & Kilic, 2019). In addition, research findings suggest that teachers exhibit higher school engagement when autonomous motivation is present, and lower school engagement when frustrated or controlled (Fernet et

al., 2014; Skaalvik & Skaalvik, 2014; Slemp et al., 2020), affirming the importance of school practices and policies that encourage autonomous teaching approaches. While research on associations between autonomy and burnout among teachers is relatively well established, limited empirical knowledge exists for associations of autonomy, depression, and anxiety among experienced teachers, particularly in crisis contexts.

## **1.2 Self-efficacy and autonomy mediating discrimination and teacher well-being**

Ethnic discrimination is a salient stressor among minority employees that may undermine self-efficacy (Adamovic et al., 2022; Glock & Costa, 2024) and sense of autonomy (De Clercq & Brieger, 2021; Lissitsa & Chachashvili-Bolotin, 2020), which are valuable resources for their optimal functioning, including among teachers (Alberty, 2025; Fereidooni, 2016). Negative stereotypes about the overall competence of ethnic minority employees are prevalent, and research suggests they may be underlied by ethnic discrimination (Adamovic et al., 2022). Discrimination in the workplace deprives employees of opportunities to develop and nurture self-efficacy competencies and autonomous behavior. Teachers with diminished self-efficacy may be more susceptible to overall ill-being and more likely to disengage, manifest exhaustion symptoms, exercise less autonomy in classroom instruction, and even feel demotivated to leave teaching (e.g., Skaalvik & Skaalvik, 2016). Beyond struggles with ill-being, experiencing controlled autonomy may hinder teachers' collective innovativeness in classroom instruction and risk eroding a collaborative classroom and school culture vital for learning and development (Nguyen et al., 2021). Therefore, on the one hand, thwarting self-efficacy and autonomy resources represents plausible pathways through which discrimination contributes to teachers' poor well-being (e.g., Adamovic et al., 2022). When self-efficacy and autonomy are enhanced, on the other hand, teachers thrive in their profession, experience less emotional distress, and are more willing to go the extra mile to support students' individual learning needs.

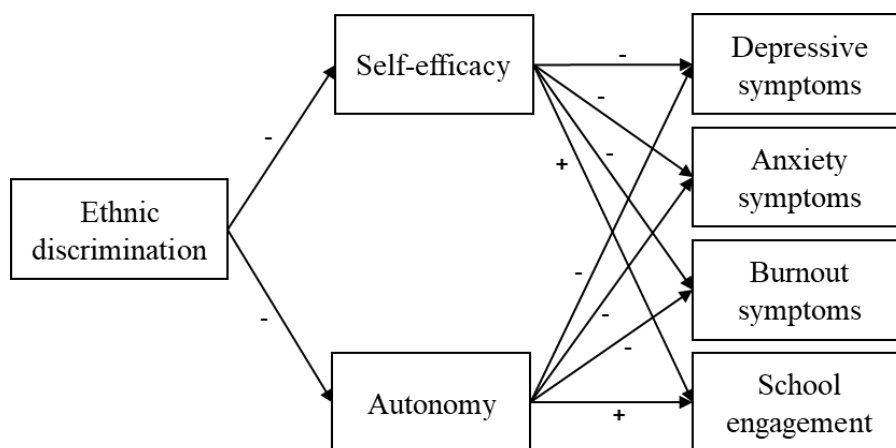
Given that ethnic discrimination experience undermines self-efficacy and autonomy resources, frustrated self-efficacy and sense of autonomy may provide some underlying explanation as to why teachers of refugee background report poor psychological well-being and engagement. Limited studies report on similar relationships among teachers. In a sample of ethnic majority teachers in China, Yu and colleagues (2014) found that those who experienced work stress reported more job burnout. A lower self-efficacy among these teachers mediated the link between work stress and job burnout. Among Canadian teachers, Klassen (2010) found that teachers who perceived higher job stress from student behavior experienced lower subjective well-being. This relationship was mediated by lower teacher collective efficacy for student discipline. In addition, a study with university teachers in East China reported that stressful job demands predicted emotional exhaustion and diminished work engagement. Importantly, the negative effects of stressful job demand on work engagement were fully mediated by teacher self-efficacy (Han et al., 2019).

With respect to the sense of autonomy, a study in Germany found that, on the one hand, autonomy satisfaction among secondary school teachers mediated the associations between lower autonomy support and positive affect and life satisfaction. On the other hand, autonomy frustration was reported to mediate the negative effects of lower autonomy support on negative affect, emotional exhaustion, and life satisfaction (Ebersold et al., 2019). Lastly, among Italian workers, Di Marco and colleagues (2018) found that a more discriminatory work environment was associated with poor well-being, and a lower job autonomy partially mediated these associations. In sum, few studies have focused on testing self-efficacy and autonomy as mediators explaining the underlying mechanism between ethnic discrimination and the different psychological outcomes (i.e., depressive symptoms, anxiety, burnout, and school engagement) among teachers. Importantly, these associations have not been tested among teachers from refugee backgrounds to date.

### 1.3 The current study

Our present research aims to address a knowledge gap regarding ethnic discrimination and its effects on the psychological well-being and school engagement of teachers of refugee background in crisis contexts. We aimed to address two main research questions: First, we investigate whether higher ethnic discrimination and lower self-efficacy and autonomy are associated with poorer psychological well-being and engagement of teachers of refugee background. Second, whether lower self-efficacy and autonomy among these teachers mediate the negative effects of ethnic discrimination on psychological well-being and school engagement. We formulated the following hypotheses to address these questions:

*Hypothesis 1:* Higher ethnic discrimination among teachers of refugee background is linked to poorer psychological well-being (i.e., higher depressive, anxiety, and burnout symptoms) and lower school engagement (H1a). Lower self-efficacy and autonomy among teachers of refugee background are associated with poorer psychological well-being (i.e., higher depressive, anxiety, and burnout symptoms) and lower school engagement (H1b).



*Figure 1:* Conceptual model of mediated effects of teachers' ethnic discrimination on psychological well-being and school engagement

*Hypothesis 2:* Higher ethnic discrimination among teachers of refugee background is linked to lower self-efficacy and autonomy (H2a). Lower self-efficacy and autonomy among teachers of refugee background mediate the negative effects of ethnic discrimination, yielding

poorer psychological well-being (i.e., higher depressive, anxiety, and burnout symptoms) and lower school engagement (H2b).

## **2. METHODS**

### **2.1 Context**

This study was conducted in the Kakuma refugee camps in northern Kenya that host refugees. The refugees are from different countries in East Africa and the Horn. Most of the schools in Kakuma are managed by local and international NGOs with the support of UNHCR. Since the government offers little support, the education system in the camps is referred to as a “parallel system” with many teachers untrained and other myriads of challenges that make teaching and learning difficult.

### **2.2 Participants and procedure**

This study is based on a subsample from a study on the well-being of teachers of refugee learners conducted in the Kakuma Refugee Camp in Kenya, in March 2025. We focused on the first wave of the longitudinal project, as the second wave of data had not yet been collected. The participants were teachers of refugee background ( $N = 143$ ,  $M_{\text{age}} = 27.63$  years,  $SD_{\text{age}} = 4.66$ , 23% female) from 38 schools. The schools comprised primary schools ( $N = 29$ ) and secondary schools ( $N = 9$ ), including refugee schools ( $N = 28$ ) and integrated schools designed to host learners from both the refugee and host communities ( $N = 10$ ). Participants represented primary school teachers ( $N = 111$ ) and secondary school teachers ( $N = 32$ ). Teachers independently completed self-report surveys administered in person by the investigators and enumerators.

The University of Nairobi's ethics committee and the Kenya National Commission for Science, Technology, and Innovation approved this study. We obtained further approvals and

permissions to access the refugee camp from the Department of Refugee Services in Kenya and the UNHCR.

## 2.2 Measures

The mean scores and reliability for each scale were calculated. As we validated the measures for the crisis context in Kenya, we also conducted confirmatory factor analysis (CFA) to assess the validity of each measure and ensure the items were suitable for the context and purpose. We considered four fit indices to evaluate the CFA models' fit: the chi-square test of model fit ( $\chi^2, p > .05$ ), the comparative fit index/Tucker–Lewis index (CFI/TLI  $> .90$ ), the standardised root mean square residuals (SRMR  $\leq .08$ ), and the root mean square error of approximation (RMSEA  $\leq .08$ ) (see Hu & Bentler, 1999). We report the factor loadings for each scale in **Appendix 1** and descriptive statistics in **Table 1**.

### 2.2.1 Ethnic discrimination

We adapted a version of the Everyday Measure for Racial/Ethnic Discrimination scale to assess experiences of ethnic discrimination among teachers of refugee background (Shariff-Marco et al., 2011). The scale assessed how often teachers had experienced unfair treatment in the workplace in the last year due to their ethnic/heritage background. The scale includes seven items, rated on a 5-point Likert scale ranging from 1 (*never*), 2 (*1 to 2 times*), 3 (*3 to 5 times*), 4 (*6 to 10 times*), and 5 (*more than 10 times*). A sample item is “people acted as if they are afraid of me because of my ethnic culture”, with Cronbach's alpha = .87 and CFA loadings ranging from .61 to .85. The overall CFA model showed a good fit ( $\chi^2 = 17.04$ ,  $p = .148$ , CFI = .96, TLI = .94, RMSEA = .054, SRMR = .054).

### 2.2.2 Self-efficacy

We assessed teachers' self-efficacy using an adapted version of Nie et al.'s (2012) teacher efficacy measure. The 12-item scale comprises three domains (four items each), namely efficacy for instruction (e.g., "how well can you respond to difficult questions from your students?"), efficacy for motivation (e.g., "how well can you motivate students who show low interest in schoolwork?"), and efficacy for classroom management (e.g., "how well can you get students to follow classroom rules?"). The item responses were rated on a 5-point Likert scale ranging from 1 (*not well at all*) to 5 (*very well*). The measure demonstrated adequate reliability, with an overall Cronbach's alpha = .86. For validity computation, CFA loadings ranged from .43 to .69. The subscale demonstrated acceptable model fit ( $\chi^2 = 75.89$ ,  $p = .013$ , CFI = .92, TLI = .90, RMSEA = .057, SRMR = .056).

### 2.2.3 Autonomy

We used the autonomous-motivation subscales, which we validated from the Multidimensional Work Motivation measure, to assess teachers' autonomy needs (Trépanier et al., 2022). The items included intrinsic motivation and fully internalized extrinsic motivation, which assess the manifestation of autonomy. On the one hand, teachers choose to work because of inherent interest, joy, and fun, and on the other hand, because it is important to them and aligns with their values (Ryan & Deci, 2020; Slemp et al., 2020). We asked teachers why they put effort into their teaching jobs, and a sample item for intrinsic motivation is "because what I do in my work is exciting." A sample item for the internalized extrinsic motivation is "because putting effort in this job aligns with my values." The five items were rated on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*completely*). The CFA factor loadings ranged from .41 to .86 and showed a good model fit ( $\chi^2 = 3.91$ ,  $p = .272$ , CFI = .99, TLI = .97, RMSEA = .046, SRMR = .027).

### 2.2.4 Depressive and anxiety symptoms

To assess depressive and anxiety symptoms, we adapted the subscales from the Goldberg Anxiety and Depression Inventory (Goldberg et al., 1988) for evaluation. Each subscale comprised nine items, rated on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). A sample item for anxiety symptoms is “I have difficulty relaxing,” with Cronbach's Alpha = .84. A sample item for depressive symptoms is “I have difficulty concentrating,” with Cronbach's Alpha = .77 and CFA loadings ranging from .014 to .68. One specific item, “I have been waking up early,” had an extremely low factor loading ( $\lambda = .014$ ), which was the only loading below .40. We excluded it, and this improved the subscales' reliability ( $\alpha = .81$ ) and overall CFA model fit ( $\chi^2 = 151.35$ ,  $p = .015$ , CFI = .95, TLI = .94, RMSEA = .045, SRMR = .055).

#### 2.2.5 Teacher burnout

We used the Maslach Burnout Inventory version for educators (Maslach et al., 1986) to assess burnout symptoms among teachers of refugee learners. The 22-item scale used a 7-point Likert scale ranging from 0 (*never*) to 6 (*every day*). A sample item is: “I feel emotionally drained from my work.” We reverse-coded all positive items. Initially, the CFA model had a poor fit. Ten items had low factor loadings, below .40. Upon excluding them, the retained 12 items demonstrated acceptable reliability, Cronbach's alpha = .83, and validity with factor loadings ranging from .43 to .69 and with an acceptable model fit ( $\chi^2 = 72.75$ ,  $p = .033$ , CFI = .93, TLI = .91, RMSEA = .051, SRMR = .060).

#### 2.2.6 Teacher school engagement

We adapted items from the Utrecht Work Engagement Scale (Schaufeli & Bakker, 2004) to measure teachers' school engagement. The scale consisted of 17 items, rated on a 7-point Likert scale ranging from 0 (*never*) to 6 (*every day*). An example item is, “When I get up in the morning, I feel like going to work.” Initially, the measure reported a poor model fit.

We excluded nine items with CFA loadings below .40, and retained eight items distributed across the three domains, whose model fit improved significantly ( $\chi^2 = 21.37$ ,  $p = .376$ , CFI = .99, TLI = .98, RMSEA = .021, SRMR = .049). The eight retained items also demonstrated good reliability (Cronbach's alpha = .76).

### 2.2.7 Controls

The control variables we included in the analysis are age, gender (0 = *male* or 1 = *female*), teaching grade levels (1 = 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup>, 2 = 4<sup>th</sup>/5<sup>th</sup>/6<sup>th</sup>, 3 = 7<sup>th</sup>/8<sup>th</sup>/9<sup>th</sup>, or 4 = 10<sup>th</sup>/11<sup>th</sup>/12<sup>th</sup>), teaching experience (1 = *new teachers, 0-3 years*; 2 = *mid-career teachers, 4-7 years*, and 3 = *experienced teachers, more than 8 years*), professional teacher training qualifications (0 = *no*, or 1 = *yes*), and socioeconomic status (SES). We assessed socioeconomic status using items from the Socio-Economic Status Scale in Africa (SESAS), which was validated in Kenya (Rotzinger et al., 2024). The scale inquired whether participants, at home, had running water (0 = *no* or 1 = *yes*), electricity (0 = *no* or 1 = *yes*), internet (0 = *never*, 1 = *some of the time*, 2 = *most of the time*), own phone (0 = *no* or 1 = *yes*), own bedroom (0 = *no* or 1 = *yes*), family car/truck (0 = *none*, 1 = *yes one*, 2 = *yes, two or more*), functional computers (0 = *none*, 1 = *one*, 2 = *two or more*), highest level of education completed (1 = *primary school*, 2 = *secondary school*, 3 = *vocational training and qualification*, 4 = *certificate or diploma level qualification*, or 5 = *Degree level qualification*), and mother or female caregiver's level of schooling (1 = *no education*, 2 = *primary school education*, 3 = *secondary school education*, 4 = *certificate or diploma level education*, or 5 = *Degree level education*). We used the Weighted Least Squares Mean and Variance Adjusted (WLSMV) estimator in a CFA model to account for dichotomous and non-continuously distributed items (Beauducel & Herzberg, 2006). While the CFA model demonstrated a good fit, three items had low loadings below .40: “Do you have running/tap water where you stay?” ( $\lambda = .24$ ), “Do you have a phone of your own?” ( $\lambda = .23$ ), and “Do you have a

bedroom for yourself?” ( $\lambda = .33$ ). We excluded the three items. The final model with the six retained items showed a good fit ( $\chi^2 = 19.24$ ,  $p = .014$ , CFI = .97, TLI = .94, RMSEA = .074, SRMR = .031) and improved reliability, Cronbach’s alpha = .76. To use this SES measure, we combined the items via a principal components analysis and used the factor loadings in the final models (Batista-Foguet et al., 2004).

## 2.4 Data analysis process

First, we checked for missing data and calculated the mean scores for all variables used in the models. We then computed the intraclass correlations (ICCs) for outcome variables, given that our data were clustered. We utilized the “type is complex” function in Mplus as teachers were nested within schools. We accounted for missing data by implementing the full information maximum likelihood (FIML; Enders, 2022) option in Mplus. We then conducted structural equation modeling (SEM) in Mplus 8.11 (Muthén & Muthén, 1998–2024) to test the hypotheses regarding direct and indirect associations.

In our findings, we report two models. The first is for controlled direct associations only, where we tested the main effects of discrimination stress on the well-being of teachers of refugee background in terms of depressive, anxiety, and burnout symptoms and school engagement (Model 1). The second model is for controlled mediation effects after adding the mediators to the model. We tested the mediating effects of teacher self-efficacy and autonomy in the associations between discrimination stress and depressive, anxiety, and burnout symptoms, as well as school engagement (Model 2). In both models, we used a bootstrapping procedure with 10,000 samples to estimate confidence intervals. We controlled for age, gender, teaching experience, professional teacher training, teaching grade level, and SES. Multiple fit indices were used to estimate the model fit: Chi-square test of model fit ( $\chi^2$ ,

$p > .05$ ), CFI/TLI  $> .90$ , SRMR  $\leq .08$ , and RMSEA  $\leq .08$  (Hu & Bentler, 1999).

### 3. RESULTS

#### 3.1 Preliminary analyses

We report bivariate correlations, descriptive statistics, and ICCs for variables included in the analysis in **Table 1**. The ICCs for outcome variables used in the models were small but meaningful; therefore, between-school differences were considered. Validity computations for all measures used were conducted via CFA.

**Table 1:** Descriptives and bivariate correlations between variables

|                           | 1       | 2    | 3      | 4      | 5      | 6    | 7         | 8         | 9          | 10        | 11        | 12        | 13         |
|---------------------------|---------|------|--------|--------|--------|------|-----------|-----------|------------|-----------|-----------|-----------|------------|
| 1 Age                     | 1       |      |        |        |        |      |           |           |            |           |           |           |            |
| 2 Gender                  | -.31*** | 1    |        |        |        |      |           |           |            |           |           |           |            |
| 3 Teaching grades         | -.35*** | -.07 | 1      |        |        |      |           |           |            |           |           |           |            |
| 4 Teaching experience     | .73***  | -.14 | -.25** | 1      |        |      |           |           |            |           |           |           |            |
| 5 Teaching qualifications | .37**   | -.11 | -.08   | .57*** | 1      |      |           |           |            |           |           |           |            |
| 6 SES                     | .08     | -.01 | .02    | .25**  | .31*** | 1    |           |           |            |           |           |           |            |
| 7 Depressive symptoms     | .11     | .04  | -.09   | .16    | .07    | -.10 | 1         |           |            |           |           |           |            |
| 8 Anxiety symptoms        | .05     | .02  | -.03   | .10    | .10    | -.02 | .83***    | 1         |            |           |           |           |            |
| 9 Burnout symptoms        | .21*    | -.03 | -.04   | .21*   | .29*** | -.04 | .53***    | .44***    | 1          |           |           |           |            |
| 10 School engagement      | .01     | -.15 | .21*   | -.18*  | -.07   | -.01 | -.32***   | -.28***   | -.11       | 1         |           |           |            |
| 11 Self-efficacy          | .03     | -.04 | .02    | -.02   | .04    | .12  | -.48***   | -.44***   | -.31***    | .28***    | 1         |           |            |
| 12 Autonomy               | .01     | -.07 | .02    | -.03   | .04    | -.76 | -.35***   | -.33***   | -.20*      | .34***    | .41***    | 1         |            |
| 13 Ethnic discrimination  | .20*    | -.07 | -.08   | .27**  | .17*   | .29  | .35***    | .26**     | .43***     | -.21*     | -.28***   | -.18*     | 1          |
| <i>M (SD)</i>             |         |      |        |        |        |      | 2.07(.73) | 2.26(.78) | 1.34(1.13) | 4.70(.99) | 4.18(.49) | 5.56(.97) | 1.33 (.59) |
| <i>N</i>                  |         |      |        |        |        |      | 143       | 143       | 143        | 143       | 143       | 143       | 143        |
| <i>ICC</i>                |         |      |        |        |        |      | .05       | .092      | .072       | .088      | .055      | .013      | .036       |

Note: SES = Socioeconomic status; Gender (female = 0, male = 1); \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ ;  $N = 143$  teachers of refugee background



### 3.2 Direct associations model

In our first research question, we sought to address whether higher ethnic discrimination experienced by teachers of refugee background was directly linked to poorer psychological well-being and lower school engagement. Our findings show that higher ethnic discrimination was associated with higher depressive symptoms ( $\beta = .33$ ,  $SE = .09$ ,  $p < .001$ ), anxiety symptoms ( $\beta = .24$ ,  $SE = .09$ ,  $p = .008$ ), burnout ( $\beta = .40$ ,  $SE = .10$ ,  $p < .001$ ), and lower school engagement ( $\beta = -.18$ ,  $SE = .08$ ,  $p = .026$ ), confirming hypothesis H1a (Table 2, direct associations model). The final model demonstrated a good fit ( $\chi^2 = 9.47$ ,  $p = .149$ , CFI = .98, TLI = .92, RMSEA = .064, SRMR = .053).

**Table 2:** Direct associations model

|                            | <u>Standardized</u> |                  |                  |      | <u>Unstandardized</u> |      |
|----------------------------|---------------------|------------------|------------------|------|-----------------------|------|
|                            | $\beta(p)$          | lower<br>95% C.I | upper<br>95% C.I | $SE$ | $b(p)$                | $SE$ |
| <i>Intercepts</i>          |                     |                  |                  |      |                       |      |
| Depressive symptoms        | 2.70**              | 1.118            | 4.401            | .84  | 1.94**                | .61  |
| Anxiety symptoms           | 2.85**              | 1.177            | 4.764            | .94  | 2.22**                | .68  |
| Burnout                    | .04                 | -1.339           | 1.419            | .72  | .05                   | .79  |
| School engagement          | 3.21**              | 1.437            | 5.006            | .93  | 3.16***               | .84  |
| <i>Depressive symptoms</i> |                     |                  |                  |      |                       |      |
| Age                        | -.04                | -.342            | .233             | .15  | -.01                  | .02  |
| Gender                     | .05                 | -.114            | .198             | .08  | .08                   | .14  |
| Teaching grades            | -.03                | -.198            | .123             | .08  | -.02                  | .06  |
| Teaching experience        | .15                 | -.093            | .395             | .13  | .14                   | .13  |
| Teaching qualifications    | -.02                | -.219            | .195             | .1   | -.03                  | .16  |
| SES                        | -.13                | -.302            | .057             | .09  | -.16                  | .11  |
| Ethnic discrimination      | .33***              | .029             | .508             | .09  | .24**                 | .07  |
| <i>Anxiety symptoms</i>    |                     |                  |                  |      |                       |      |
| Age                        | -.03                | -.368            | .284             | .16  | -.01                  | .03  |
| Gender                     | .04                 | -.154            | .197             | .09  | .06                   | .16  |

|                          |        |       |       |     |        |     |
|--------------------------|--------|-------|-------|-----|--------|-----|
| Teaching grades          | .003   | -.171 | .162  | .09 | .002   | .07 |
| Teaching experience      | .04    | -.245 | .320  | .14 | .04    | .15 |
| Teaching qualifications  | .07    | -.147 | .294  | .11 | .12    | .19 |
| SES                      | -.07   | -.271 | .145  | .11 | -.1    | .15 |
| Ethnic discrimination    | .24**  | .051  | .413  | .09 | .19*   | .08 |
| <i>Burnout</i>           |        |       |       |     |        |     |
| Age                      | .16    | -.075 | .395  | .12 | .04    | .03 |
| Gender                   | .07    | -.101 | .237  | .09 | .17    | .24 |
| Teaching grades          | .05    | -.102 | .193  | .08 | .05    | .08 |
| Teaching experience      | -.11   | -.339 | .110  | .13 | -.16   | .17 |
| Teaching qualifications  | .28**  | .084  | .470  | .10 | .67*   | .27 |
| SES                      | -.15*  | -.254 | -.020 | .07 | -.28   | .15 |
| Ethnic discrimination    | .40*** | .176  | .588  | .10 | .44*** | .09 |
| <i>School engagement</i> |        |       |       |     |        |     |
| Age                      | .31*   | .035  | .606  | .15 | .07*   | .03 |
| Gender                   | -.09   | -.267 | .080  | .09 | -.22   | .21 |
| Teaching grades          | .22**  | .064  | .357  | .08 | .21**  | .08 |
| Teaching experience      | -.32*  | -.581 | -.073 | .13 | -.43*  | .18 |
| Teaching qualifications  | .03    | -.192 | .223  | .10 | .07    | .22 |
| SES                      | -.01   | -.205 | .164  | .09 | -.01   | .16 |
| Ethnic discrimination    | -.18*  | -.341 | -.021 | .08 | -.18*  | .09 |

Note: SES = Socioeconomic status; Gender (female = 0, male = 1); \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ ;  $N = 143$  teachers of refugee background

### 3.3 Indirect associations model

In **Table 3** (indirect effects model), we report the indirect effects of ethnic discrimination on psychological well-being and school engagement. To address the second research question—whether self-efficacy and a sense of autonomy mediate the negative effects of ethnic discrimination on psychological well-being and engagement—we proceeded in four steps. First, we tested the direct associations between the mediators (self-efficacy & autonomy) and the outcomes. Partly in line with our expectations (hypothesis H1b), teachers

with higher self-efficacy reported lower depressive symptoms ( $\beta = -.34, SE = .08, p < .001$ ), anxiety symptoms ( $\beta = -.34, SE = .09, p < .001$ ), and burnout ( $\beta = -.19, SE = .08, p = .024$ ).

We, however, did not find an association between teachers' self-efficacy and school engagement ( $\beta = .14, SE = .10, p = .179$ ). Again, partly confirming hypothesis H1b, teachers with higher sense of autonomy reported lower depressive symptoms ( $\beta = -.18, SE = .09, p = .038$ ) and higher school engagement ( $\beta = .24, SE = .09, p = .006$ ), but there were no associations between autonomy and anxiety symptoms ( $\beta = -.18, SE = .10, p = .082$ ) and burnout ( $\beta = -.10, SE = .10, p = .344$ ).

Second, we tested the associations between ethnic discrimination, self-efficacy, and a sense of autonomy. Teachers who reported higher ethnic discrimination also reported lower self-efficacy ( $\beta = -.28, SE = .11, p = .009$ ) and lower sense of autonomy ( $\beta = -.18, SE = .09, p = .029$ ), confirming hypothesis H2a.

Third, after adding the mediators to the model, the direct effects of ethnic discrimination on depressive symptoms ( $\beta = .20, SE = .07, p = .007$ ) and burnout ( $\beta = .32, SE = .09, p = .001$ ) decreased. On the other hand, the effects on anxiety symptoms ( $\beta = .11, SE = .08, p = .181$ ) and school engagement ( $\beta = -.10, SE = .06, p = .080$ ) became non-significant. The final indirect model demonstrated a good fit ( $\chi^2 = 39.97, p = .011, CFI = .94, RMSEA = .076, SRMR = .061$ ).

**Table 3:** Indirect associations model

|                                          | <u>Standardized</u> |                  |                  | <u>Unstandardized</u> |             |           |
|------------------------------------------|---------------------|------------------|------------------|-----------------------|-------------|-----------|
|                                          | $\beta(p)$          | lower<br>95% C.I | upper<br>95% C.I | <i>SE</i>             | <i>b(p)</i> | <i>SE</i> |
| <i>Depressive symptoms on covariates</i> |                     |                  |                  |                       |             |           |
| Age                                      | .01                 | -.243            | .262             | .14                   | .002        | .08       |
| Gender                                   | .03                 | -.124            | .172             | .07                   | .05         | .13       |
| Teaching grades                          | -.03                | -.188            | .110             | .08                   | -.02        | .06       |
| Teaching experience                      | .09                 | -.105            | .304             | .11                   | .09         | .11       |

|                                           |        |       |       |     |        |     |
|-------------------------------------------|--------|-------|-------|-----|--------|-----|
| Teaching qualifications                   | .03    | -.146 | .206  | .08 | .05    | .13 |
| SES                                       | -.10   | -.258 | .045  | .08 | -.13   | .10 |
| <i>Anxiety symptoms on covariates</i>     |        |       |       |     |        |     |
| Age                                       | .02    | -.269 | .285  | .13 | .003   | .02 |
| Gender                                    | .02    | -.149 | .161  | .02 | .03    | .13 |
| Teaching grades                           | .01    | -.151 | .147  | .09 | .01    | .07 |
| Teaching experience                       | -.02   | -.240 | .216  | .12 | -.02   | .13 |
| Teaching qualifications                   | .12    | -.065 | .316  | .08 | .20    | .15 |
| SES                                       | -.05   | -.223 | .123  | .08 | -.07   | .11 |
| <i>Burnout on covariates</i>              |        |       |       |     |        |     |
| Age                                       | .18    | -.033 | .398  | .10 | .04    | .03 |
| Gender                                    | .05    | -.115 | .222  | .08 | .14    | .21 |
| Teaching grades                           | .05    | -.102 | .189  | .08 | .05    | .09 |
| Teaching experience                       | -.14   | -.339 | .066  | .09 | -.21   | .15 |
| Teaching qualifications                   | .30**  | .134  | .475  | .09 | .73**  | .25 |
| SES                                       | -.13*  | -.256 | -.002 | .06 | -.26*  | .12 |
| <i>School engagement on covariates</i>    |        |       |       |     |        |     |
| Age                                       | .27*   | .003  | .550  | .14 | .06    | .03 |
| Gender                                    | -.08   | -.242 | .096  | .06 | -.18   | .14 |
| Teaching grades                           | .22**  | .059  | .356  | .08 | .21**  | .08 |
| Teaching experience                       | -.28** | -.534 | -.024 | .10 | -.36*  | .15 |
| Teaching qualifications                   | -.01   | -.219 | .189  | .11 | -.02   | .22 |
| SES                                       | -.01   | -.219 | .175  | .10 | -.01   | .17 |
| <i>Outcomes on ethnic discrimination</i>  |        |       |       |     |        |     |
| Ethnic discrimination →                   |        |       |       |     |        |     |
| Depressive symptoms                       | .20**  | .026  | .344  | .07 | .14**  | .05 |
| Ethnic discrimination → Anxiety symptoms  |        |       |       |     |        |     |
|                                           | .11    | -.055 | .277  | .08 | .09    | .06 |
| Ethnic discrimination → Burnout           |        |       |       |     |        |     |
|                                           | .32**  | .111  | .509  | .10 | .36*** | .10 |
| Ethnic discrimination → School engagement |        |       |       |     |        |     |
|                                           | -.10   | -.247 | .037  | .06 | -.10   | .05 |
| <i>Mediators on ethnic discrimination</i> |        |       |       |     |        |     |

|                                       |         |        |        |     |         |     |
|---------------------------------------|---------|--------|--------|-----|---------|-----|
| Ethnic discrimination → Self-efficacy | -.28**  | -0.498 | -0.062 | .11 | -.28**  | .11 |
| Ethnic discrimination → Autonomy      | -.18*   | -0.338 | -0.014 | .09 | -.18*   | .09 |
| <i>Outcomes on mediators</i>          |         |        |        |     |         |     |
| Self-efficacy → Depressive symptoms   | -.34*** | -0.473 | -0.177 | .08 | -.25*** | .07 |
| Autonomy → Depressive symptoms        | -.18*   | -0.356 | -0.003 | .09 | -.13*   | .06 |
| Self-efficacy → Anxiety symptoms      | -.34*** | -0.486 | -0.152 | .09 | -.27**  | .08 |
| Autonomy → Anxiety symptoms           | -0.18   | -0.373 | 0.025  | .11 | -.14    | .09 |
| Self-efficacy → Burnout               | -.19*   | -0.329 | -0.019 | .08 | -.21*   | .10 |
| Autonomy → Burnout                    | -0.1    | -0.278 | 0.071  | .10 | -.11    | .11 |
| Self-efficacy → School engagement     | 0.14    | -0.019 | 0.301  | .11 | .14     | .10 |
| Autonomy → School engagement          | .24**   | 0.054  | 0.399  | .09 | .23**   | .08 |

*Note:* SES = Socioeconomic status; Gender (female = 0, male = 1); \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ ;  $N = 143$  teachers of refugee background

Lastly, and partly in line with our expectations (H2b), we found some indirect associations through self-efficacy. Lower self-efficacy ( $\beta = .10$ ,  $SE = .05$ ,  $p = .027$ ) mediated the negative effects of ethnic discrimination on depressive symptoms. Similarly, the negative effects of ethnic discrimination on anxiety symptoms were mediated by a lower self-efficacy ( $\beta = .10$ ,  $SE = .04$ ,  $p = .033$ ). However, there were no indirect effects of ethnic discrimination on burnout through self-efficacy ( $\beta = .05$ ,  $SE = .03$ ,  $p = .120$ ) and on school engagement through self-efficacy ( $\beta = -.04$ ,  $SE = .03$ ,  $p = .194$ ).

For associations through a sense of autonomy, again, part of our hypothesis H2b was not confirmed. We did not find any indirect effects of ethnic discrimination experiences on

depressive symptoms through autonomy ( $\beta = .03$ ,  $SE = .02$ ,  $p = .181$ ), anxiety symptoms through autonomy ( $\beta = .03$ ,  $SE = .03$ ,  $p = .221$ ), burnout through autonomy ( $\beta = .02$ ,  $SE = .02$ ,  $p = .378$ ), and on school engagement through autonomy ( $\beta = -.04$ ,  $SE = .03$ ,  $p = .102$ ).

#### 4. DISCUSSION

Our research went beyond establishing the direct associations between ethnic discrimination and psychological distress and engagement to test the potential of self-efficacy and autonomy to mediate these relationships. We mainly found that ethnic discrimination among teachers of refugee background indeed diminishes their self-efficacy and autonomy, which are in turn linked to poor well-being. Our findings, both direct and indirect, add to the literature on the effects of discrimination on the well-being of refugee-background teachers in crisis contexts. Notably, the indirect effects offer a nuanced perspective on why some of these teachers could be struggling more in their profession than others, and to the best of our knowledge, are the first to be reported for the sample type and context.

In addressing our first research question, we found that perceived ethnic discrimination was related to more depressive symptoms, anxiety, and burnout, and lower school engagement (Hypothesis H1a). These findings are consistent with previous research that addressed the negative effects of ethnic discrimination among ethnic minority employees and teachers (Glock & Costa, 2024; Gosnell et al., 2021; Jones et al., 2009). They confirm that teachers of refugee background in crisis contexts (as minority employees) experience ethnic discrimination, which is negatively linked to their psychological well-being and engagement. Teaching in school environments where teachers are treated unfairly because of their ethnic backgrounds devalues, excludes, and negatively impacts their mental health and productivity at work (Education Support, 2025; Miller & Travers, 2005).

Regarding Hypothesis H1b, we found that teachers with higher self-efficacy reported lower depressive symptoms, anxiety symptoms, and burnout, but there were no associations with school engagement. These findings align with previous research that underscores the vitality and promotive role of self-efficacy for teachers' psychological well-being (Capone et al., 2019; Skaalvik & Skaalvik, 2010). They demonstrate the importance of enhancing and nurturing self-efficacy as a psychological resource critical for supporting teachers' mental health, motivation, and engagement at work (Gosnell et al., 2021; Skaalvik & Skaalvik, 2016), more so among those of refugee background (Gosnell et al., 2021). Furthermore, and still on Hypothesis H1b, our findings did not show that a higher sense of autonomy was related to anxiety symptoms and burnout, contrary to previous research (e.g., Gillet et al., 2016; Skaalvik & Skaalvik, 2014), but was associated with lower depressive symptoms and higher school engagement. Again, the significant associations are consistent with existing evidence that autonomy satisfaction can promote psychological well-being and engagement among teachers in stable contexts (Slemp et al., 2020). They confirm that teachers (including those of refugee background) who exercise autonomous behavior benefit in multiple ways (Li, 2018; Skaalvik & Skaalvik, 2014; Slemp et al., 2020). The ripple effect is that it places teachers in an advantageous position to exercise autonomy-supportive teaching practices, thereby yielding positive outcomes for teachers, students, and classroom climate (Reeve & Cheon, 2021).

Regarding our second research question, and partly confirming Hypotheses H2a and H2b, we found mediation effects. A lower self-efficacy mediated the negative effects of ethnic discrimination on both depressive and anxiety symptoms, and not on burnout and school engagement. Further, and against our expectations, we did not find autonomy to mediate the negative effects of ethnic discrimination on depressive and anxiety symptoms, burnout, and school engagement.

The indirect associations underscore the importance of testing mediation with specific well-being outcomes, an approach that is valuable to targeted design and development of interventions. Ethnic discrimination among minority teachers was linked to depressive symptoms and anxiety through diminished self-efficacy. Previous research shows that self-efficacy mediated teachers' distress and subjective well-being (Klassen, 2010) and job burnout (Yu et al., 2014). Adding to the literature, our findings show that teachers with higher self-efficacy cope better in the face of discrimination-related stress and enjoy better mental health. Therefore, teaching in school environments with supportive structures that prioritize genuine care, inclusion, feedback, and targeted professional development fosters self-efficacy competencies, which, in turn, yield greater health among teachers. For teachers of refugee background in crisis contexts, self-efficacy-based interventions (Saeidavi et al., 2025) and pedagogical training (Mendenhall, 2024) would go a long way toward improving health and learning outcomes.

#### **4.1 Implications, limitations, and future research**

This study contributes to the literature on the discrimination experiences of teachers of refugee background in crisis contexts in several ways. First, our findings illuminate evidence of discrimination as a common experience among ethnic minority teachers in the school workplace (Brouwers et al., 2016). While we go beyond assessing ethnicity as a descriptive category but rather as a salient acculturation risk (Capasso et al., 2016b), we also widen the contexts to include crisis settings that have not been addressed before. Second, in light of self-efficacy and autonomy, we not only tested their promotive potential for psychological well-being and engagement among refugee background teachers but also their potential as mediators in the discrimination—well-being link. This is particularly important for informing the development of policies and interventions to support teachers' well-being in the face of discrimination in crisis contexts, where empirical evidence is limited. Third, and

importantly, we adapted the measurement tools used in this study to suit the purpose and context. One reason research has lagged in crisis contexts globally is the absence of measures validated for localised assessment of holistic learning outcomes in these challenging contexts (Outhred et al., 2025). While gains have been made in recent years, the gaps persist. Yet more accurate, timely, and ethically collected data and evidence are needed to inform policy and practice in schools in these contexts.

Our study had limitations as well. One main limitation is the use of cross-sectional data, which did not allow testing of causal mediation effects that utilize longitudinal data. Given that existing evidence shows that more stressful work experiences diminish self-efficacy and a sense of autonomy, which are then linked to poor psychological well-being and engagement among employees, we argue a directional interpretation of our findings. However, we advocate the utilization of longitudinal data for mediation analyses in future studies.

The other limitation concerns the sample and measurement. We used a sample from the Kakuma refugee camp in Kenya. While the tools were adapted for this population, we know that teachers of refugee background may have different school experiences across similar contexts, as some may have received more effective integration into the national education system than others. Therefore, there is need for further validation of the measurement tools with different yet similar samples. In addition, larger samples with longitudinal data are desired to strengthen confidence in the replicability of reported evidence (Outhred et al., 2025).

## **4.2 Conclusion**

While the experience of ethnic discrimination in the workplace and its effects on well-being are empirically less well documented in schools in crisis settings, we conclude that it undermines self-efficacy and autonomy resources for teachers of refugee background,

hindering their overall well-being (Glock & Costa, 2024; Lissitsa & Chachashvili-Bolotin, 2020). Our study underscores the vitality of self-efficacy as an underlying mechanism (e.g., Han et al., 2019) and highlights the urgency of investing in interventions that focus on fostering self-efficacy competencies among teachers of refugee background to secure and sustain their well-being. More empirical research on these associations would strengthen the possibility of more targeted and impactful development programs for these teachers.

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### Authors' conflict of interest statement

The authors declare no conflict of interest.

### Data availability

The data supporting this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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### Appendix 1: Factorial structures for individual scales used in the study

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| Measure                                                                             | Factor Loadings       |                       |
|-------------------------------------------------------------------------------------|-----------------------|-----------------------|
|                                                                                     | Loadings<br>(Model 1) | Loadings<br>(Model 2) |
| <b>1. Ethnic discrimination</b>                                                     |                       |                       |
| I was treated with less respect than other people due to my ethnic culture          |                       | 0.74                  |
| People around me acted as if they think I am not smart because of my ethnic culture |                       | 0.85                  |
| People criticized my accent or the way I speak due to my ethnic culture             |                       | 0.72                  |
| People acted as if they are afraid of me because of my ethnic culture               |                       | 0.62                  |
| People acted as if they are better than I am because of my ethnic culture           |                       | 0.82                  |
| I was threatened or harassed because of my ethnic culture                           |                       | 0.63                  |
| People acted as if they think I am dishonest because of my ethnic culture           |                       | 0.61                  |
| <b>2. Self-efficacy</b>                                                             |                       |                       |

|                                                                                            |      |      |
|--------------------------------------------------------------------------------------------|------|------|
| How well can you respond to difficult questions from your students?                        |      | 0.50 |
| How well can you provide appropriate challenges for very capable students?                 |      | 0.43 |
| How well can you implement alternative strategies in your classroom?                       |      | 0.49 |
| How well can you provide an alternative explanation or example when students are confused? |      | 0.50 |
| How well can you help your students value learning?                                        |      | 0.54 |
| How well can you motivate students who show low interest in schoolwork?                    |      | 0.45 |
| How well can you improve the understanding of a student who is failing?                    |      | 0.69 |
| How well can you get through to the most difficult students?                               |      | 0.69 |
| How well can you make your expectations clear about student behavior?                      |      | 0.50 |
| How well can you get students to follow classroom rules?                                   |      | 0.59 |
| How well can you control disruptive behavior in the classroom?                             |      | 0.60 |
| How well can you keep a few problematic students from ruining an entire lesson?            |      | 0.49 |
| <b>3. Autonomy</b>                                                                         |      |      |
| Because the work I do is interesting                                                       |      | 0.86 |
| Because what I do in my work is exciting                                                   |      | 0.74 |
| Because I have fun doing my job                                                            |      | 0.45 |
| Because putting effort in this job aligns with my personal values                          |      | 0.59 |
| Because putting effort in this job has personal significance to me                         |      | 0.41 |
| <b>4. Depressive symptoms</b>                                                              |      |      |
| I feel low on energy                                                                       | 0.63 | 0.63 |
| I lose interest and pleasure in things which I usually enjoy                               | 0.58 | 0.58 |
| I have lost confidence in myself                                                           | 0.52 | 0.53 |
| I have difficulty concentrating                                                            | 0.58 | 0.58 |

|                                           |      |      |
|-------------------------------------------|------|------|
| I have lost weight (due to poor appetite) | 0.54 | 0.54 |
| I have been waking up early               | 0.08 |      |
| I feel slowed down                        | 0.62 | 0.62 |
| I feel hopeless                           | 0.59 | 0.59 |
| I tend to feel worse in the morning       | 0.63 | 0.64 |

##### **5. Anxiety symptoms**

|                                  |  |      |
|----------------------------------|--|------|
| I worry a lot of the time        |  | 0.67 |
| I feel irritated                 |  | 0.67 |
| I feel tired                     |  | 0.61 |
| I have difficulty falling asleep |  | 0.52 |
| I have headaches or neckaches    |  | 0.68 |
| I feel dizzy and faint           |  | 0.55 |
| I have difficulty relaxing       |  | 0.60 |
| I worry about my health          |  | 0.53 |
| I have been sleeping poorly      |  | 0.57 |

##### **6. Burnout symptoms**

|                                                                                      |      |      |
|--------------------------------------------------------------------------------------|------|------|
| I feel emotionally drained from my work                                              | 0.59 | 0.55 |
| I feel used up at the end of the workday                                             | 0.53 | 0.50 |
| I feel fatigued when I get up in the morning and have to face another day on the job | 0.50 | 0.46 |
| I can easily understand how my students feel about things                            | 0.03 |      |
| I feel I treat some students as if they were impersonal objects                      | 0.44 | 0.43 |
| Working with people all day is really a strain for me                                | 0.67 | 0.65 |
| I deal very effectively with the problems of my students                             | 0.17 |      |
| I feel burned out from my work                                                       | 0.53 | 0.52 |
| I feel I'm positively influencing other people's lives through my work               | 0.08 |      |
| I've become more callous toward people since I took this job                         | 0.22 |      |
| I worry that this job is hardening me emotionally                                    | 0.48 | 0.48 |
| I feel very energetic                                                                | 0.33 |      |
| I feel frustrated by my job                                                          | 0.58 | 0.59 |
| I feel I'm working too hard on my job                                                | 0.11 |      |

|                                                                 |      |      |
|-----------------------------------------------------------------|------|------|
| I don't really care what happens to some students               | 0.48 | 0.48 |
| Working with people directly puts too much stress on me         | 0.69 | 0.69 |
| I can easily create a relaxed atmosphere with my students       | 0.12 |      |
| I feel exhilarated after working closely with my students       | 0.08 |      |
| I have accomplished many worthwhile things in this job          | 0.03 |      |
| I feel like I'm at the end of my rope                           | 0.52 | 0.54 |
| In my work, I deal with emotional problems very calmly          | 0.18 |      |
| I feel students blame me for some of their problems             | 0.52 | 0.54 |
| <b>7. Teacher engagement</b>                                    |      |      |
| At my work, I feel bursting with energy                         | 0.25 |      |
| I find the work that I do full of meaning and purpose           | 0.43 | 0.43 |
| Time flies when I'm working                                     | 0.36 |      |
| At my job, I feel strong and vigorous                           | 0.54 | 0.54 |
| I am enthusiastic about my job                                  | 0.68 | 0.72 |
| When I am working, I forget everything else around me           | 0.36 |      |
| My job inspires me                                              | 0.56 | 0.57 |
| When I get up in the morning, I feel like going to work         | 0.36 |      |
| I feel happy when I am working intensely                        | 0.34 |      |
| I am proud of the work that I do                                | 0.33 |      |
| I am immersed in my work                                        | 0.46 | 0.44 |
| I can continue working for very long periods at a time          | 0.29 |      |
| To me, my job is challenging                                    | 0.19 |      |
| I get carried away when I'm working                             | 0.33 |      |
| At my job, I am very resilient, mentally                        | 0.62 | 0.63 |
| It is difficult to detach myself from my job                    | 0.50 | 0.46 |
| At my work, I always persevere, even when things do not go well | 0.50 | 0.49 |

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Note: Model 1 = Initial model before excluding any items; Model 2 = Final model used in some cases after excluding some items with loadings below .40.

