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The Mediating Role of Effort-Reward Imbalance in The Relationship Between Educational Injustice and Academic Burnout

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ABSTRACT

This study aimed to test a conceptual model that examines the mediating role of effort-reward imbalance in the relationship between educational injustice and academic burnout. The study was conducted as part of a correlation project. The study included 370 female undergraduate students residing in the dormitories of Mazandaran University during the 2019-2020 academic year. The participants were selected using a multi-stage cluster sampling method and completed several questionnaires, including the demographic profile form, the educational justice questionnaire, the student version of the effort-reward imbalance questionnaire, and the student version of the Oldenberg burnout inventory. Using maximum likelihood estimation and a self-adjustment method, the findings of the structural equation modeling showed that effort-reward imbalance mediates the relationship between educational injustice and academic burnout ($p < 0.05$). The present research concludes that educational injustice predicts academic burnout. Effort-reward imbalance can clarify one of the mechanisms of the effect of educational injustice on academic burnout. These findings suggest that educational programs for professors and counseling programs for students should take into account the impact of educational injustice on academic burnout.

1. INTRODUCTION

Educational systems play a crucial role in fostering human capital and promoting social equity. However, educational injustice manifested in forms such as discrimination in assessment, unequal access to resources, or disproportionate allocation of opportunities can have profound negative consequences on students' motivation, psychological well-being, and academic achievement [1]. One of the well-documented outcomes of perceived injustice is academic burnout, a construct characterized by emotional exhaustion, cynicism toward learning, and reduced academic efficacy [2].

The Effort–Reward Imbalance (ERI) model, first introduced by Siegrist, provides a theoretical framework to explain stress that arises when individuals perceive a mismatch between the effort they invest and the rewards they

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receive [3]. In academic contexts, when students exert significant effort yet receive insufficient rewards whether in the form of grades, recognition, or support the likelihood of experiencing stress and ultimately burnout increases [4].

Given the conceptual similarities between educational injustice and conditions of effort–reward imbalance, it is plausible to assume that the ERI model mediates the relationship between perceived injustice and academic burnout. Exploring this mediating role not only deepens theoretical understanding but also provides practical insights for developing interventions aimed at promoting fairness and reducing burnout in educational settings.

2. LITERATURE REVIEW

Research consistently highlights that perceptions of injustice in educational environments are linked to higher stress, lower motivation, and diminished psychological well-being [5]. For instance, perceived discrimination in grading systems can undermine students' self-efficacy and increase frustration [6]. International evidence also emphasizes that educational justice is a key determinant of academic persistence and lower burnout levels [7].

Academic burnout, adapted from the concept of occupational burnout, is defined by three primary dimensions: emotional exhaustion, cynicism, and a sense of reduced efficacy [8]. Numerous studies have found that academic stressors, lack of support, and perceived unfairness are among the strongest predictors of student burnout [9][10].

The ERI model, originally developed for occupational contexts, has been successfully applied in academic settings as well [11]. Studies demonstrate that students who invest significant effort in their studies but perceive insufficient rewards whether grades, acknowledgment, or career prospects are at greater risk of stress-related problems and burnout [12][13].

Several empirical studies suggest that ERI serves as a mediator between stressors such as injustice or academic pressure and adverse outcomes like burnout [14][15]. For example, research shows that when perceived educational injustice coincides with insufficient rewards, the impact on emotional exhaustion and academic disengagement becomes significantly stronger [16]. This highlights the importance of ERI as a critical explanatory mechanism in the justice–burnout relationship.

3. METHOD

3.1. Population, Sample, and Sampling Method

The present study was conducted within the framework of a correlational design using structural equation modeling. The population consisted of all female undergraduate students residing in the dormitories of the University of Mazandaran during the 2019–2020 academic year. To test the study hypotheses, a sample of 370 female students was selected free of charge using a multistage cluster sampling method from the university dormitories.

3.2. Research Instruments

3.2.1. Educational Justice Questionnaire

This 28-item questionnaire includes two subscales: educational justice and educational injustice, each comprising 14 items, developed based on the cultural context of Iranian universities [17]. Each item is rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The questionnaire measures justice and injustice in the relationships between faculty members and the university educational environment regarding guidance, assessment, and interaction with students. The minimum and maximum scores for the subscales of educational justice and educational injustice are 14 and 98, respectively. The questionnaire's validity has been reported as very high, and its reliability, based on Cronbach's alpha, was 0.76 for educational justice and 0.82 for educational injustice, indicating good internal consistency. In the present study, the educational injustice subscale was employed (Cronbach's alpha = 0.77).

3.2.2. Student Version of the Oldenburg Burnout Inventory (OLBI-S)

The OLBI-S is based on the conceptualization of burnout by Oldenburg and its derived instrument, the Oldenburg Burnout Inventory (OLBI; Demerouti et al., 2010) [18]. Burnout is assessed through two components: exhaustion (items 1–8) and disengagement (items 9–16). The OLBI-S contains 16 items that evaluate these two dimensions. Responses are rated on a 4-point Likert scale, from strongly disagree to strongly agree. Scores range from 16 to 64,

calculated by summing item responses. Reis et al. (2015) developed the student version of the OLBI and evaluated its psychometric properties, demonstrating that the two-dimensional structure of OLBI is applicable for measuring burnout in both occupational and academic contexts, with cross-cultural consistency among students. In the present study, the Persian version of the OLBI-S was used [19].

3.2.3. *Student Version of the Effort-Reward Imbalance Questionnaire (ERIQ-S)*

The ERIQ-S was developed by Larki, Ghafari, and Ba'ezat (2018) to measure effort-reward imbalance among students. Exploratory factor analysis (EFA) of the initial item pool identified five factors effort, esteem, security, promotion, and overcommitment comprising 29 items in total, explaining 60.79% of the variance in effort-reward imbalance. Confirmatory factor analysis (CFA) indicated a good fit between the ERIQ-S model and the data. Construct validity was confirmed via correlations between subscales and the total score. Convergent and discriminant validity were supported through correlations with academic burnout, educational justice, and educational injustice in a separate sample of 100 students, showing significant and expected results. Internal consistency was acceptable (Cronbach's alpha = 0.70–0.88), and test–retest reliability was 0.83 [20].

3.3. Procedure

The questionnaires were compiled into booklets. At the beginning, students were provided with brief information regarding the study objectives and the confidentiality of responses. Following coordination with dormitory management, three blocks were randomly selected from the dormitories, then floors and rooms were randomly chosen within each block. Questionnaires were distributed among 400 female undergraduate students residing in the dormitories of the University of Mazandaran. After removing incomplete or outlier responses, the final sample comprised 370 participants.

3.4. Statistical Analysis

Data analysis was conducted using SPSS 22 and AMOS 20. Descriptive statistics, including measures of central tendency and dispersion, and inferential analysis through structural equation modeling were employed.

4. RESULTS

The participants' ages ranged from 19 to 35 years (mean = 21.37 ± 1.91). Among the respondents, 122 students (33%) were from the Faculty of Humanities and Social Sciences, 99 (27%) from the Faculty of Basic Sciences, 11 (3%) from the Faculty of Theology, 47 (13%) from the Faculty of Engineering, 31 (8%) from the Faculty of Physical Education, 42 (11%) from the Faculty of Economics, and 18 (5%) from the Faculty of Law. Table 1 presents the means, standard deviations, and correlation matrix of the study variables.

Table 1. Means, Standard Deviations, and Correlation Matrix of Study Variables

Variable	1	2	3	4	5	6	Mean	SD
Effort	1						10.77	2.46
Reward	-0.40**	1					12.64	2.71
Overcommitment	0.55**	-0.30**	1				19.36	3.74
Academic Burnout	0.43**	-0.36**	0.12*	1			61.01	11.58
Educational Injustice	0.22**	-0.60**	0.11*	0.26**	1		50.79	14.80
Effort-Reward Ratio	0.83**	-0.76**	0.52**	0.46**	0.42**	1	0.95	0.34

Multivariate normality and overall fit indices for the model are presented in Table 2. The critical ratio for Mardia's coefficient confirms multivariate normality. Model fit, assessed using the bootstrap method with a 95% confidence interval (for testing mediation via estimation of indirect effects, Hayes, 2009), indicated satisfactory overall fit. There were no multivariate outliers [21].

Table 2. Multivariate Normality and Overall Fit Indices for the Structural Model of the Mediating Role of Effort-Reward Imbalance in the Relationship Between Educational Injustice and Academic Burnout

Multivariate Normality	Overall Fit Indices	Mardia's C	C.R.	CMIN	DF	P	TLI	CFI	CMIN/DF	PNFI	PCFI	RMSEA
	Absolute	Relative	Parsimonious	2.48	2.83	3.84	327	0.27	0.99	0.99	1.28	0.66

As shown, the relative chi-square (CMIN/DF = 1.28) indicates acceptable model fit. TLI and CFI values above 0.90 suggest the model is closer to the saturated model than an independence model. Parsimonious indices PNFI (0.66) and PCFI (0.67) indicate an efficient model, and RMSEA = 0.03 confirms good model-data fit. Structural path coefficients are summarized in Table 3.

Table 3. Estimated Parameters for the Effects of Educational Injustice and Effort-Reward Imbalance on Academic Burnout

Parameter	Standardized Estimate (β)	Critical Ratio	p-value
Educational Injustice → Effort-Reward Imbalance	0.37	9.48	<0.001
Educational Injustice → Academic Burnout	0.13	4.03	0.04
Effort-Reward Imbalance → Academic Burnout	0.38	12.01	<0.001

As shown, the direct effect of educational injustice on academic burnout ($\beta = 0.13$) was significant at $p < 0.05$. Direct effects of educational injustice on effort-reward imbalance ($\beta = 0.37$) and of effort-reward imbalance on academic burnout ($\beta = 0.38$) were significant at $p < 0.01$. Bootstrap analysis with 95% confidence intervals revealed that the indirect effect of educational injustice on academic burnout through effort-reward imbalance ($\beta = 0.11$, CI = 0.04–0.20, $p < 0.001$) was positive and significant. Therefore, the mediating role of effort-reward imbalance in the relationship between educational injustice and academic burnout was supported. The model explained 20% of the variance in academic burnout and 14% of the variance in effort-reward imbalance.

5. CONCLUSION

The findings of the present study indicate that educational injustice significantly contributes to academic burnout among female undergraduate students. Moreover, effort-reward imbalance plays a mediating role in this relationship, suggesting that students' perceptions of disproportionate effort relative to received rewards exacerbate the impact of perceived educational injustice on burnout. Specifically, educational injustice indirectly affects academic burnout through its influence on effort-reward imbalance, highlighting the importance of equitable educational practices and recognition of student efforts in mitigating burnout. These results underscore the need for university administrators and educators to implement strategies that promote fairness, provide appropriate rewards and support, and address students' perceptions of imbalance in academic settings. By doing so, it may be possible to reduce academic burnout and enhance students' overall well-being and academic engagement.

Transparency Statement

The data supporting this study are available upon reasonable request to the corresponding author, subject to ethical and confidentiality considerations.

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Declaration of Interest

The authors declare that they have no competing interests.

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