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Abstract

Little is known about the psychological consequences of the recently increased utilization of video conferencing, which has enabled life to proceed as close to normal as possible during the COVID-19 pandemic. To understand the psychological consequences of this recent global lifestyle change in different populations, the psychometric validation of the Zoom Exhaustion and Fatigue Scale (ZEFS) and the relationship of this construct with academic well-being, mental well-being, and life satisfaction are presented. In a sample of 470 Turkish university students (57% female, M_{age}= 20.26 $\pm$ 2.18, ranging between 18 to 33 years), first-order and second-order CFAs confirmed the construct validity of the scale, and IRT results yielded appropriate item difficulty and discrimination. ZEFS scores were significantly and positively associated with anxiety, depression, and stress, and negatively associated with life satisfaction and academic well-being, supporting the scale's concurrent validity. Incremental validity was shown with mediational models demonstrating significant and separate indirect effects of ZEF on life satisfaction and academic well-being, both mediated by psychological distress. The results suggest ZEFS to be a valid and reliable tool to evaluate the psychological consequences of videoconferencing, which has globally increased during the COVID-19 pandemic, in non-Western samples. By showing the relationships of Zoom exhaustion and fatigue with psychological distress, life satisfaction, and academic well-being, the present study highlights potential avenues to be addressed in order to protect the mental well-being of all individuals that have integrated videoconferencing as part of their daily lives.

Keywords: Zoom fatigue; COVID-19; psychological distress; life satisfaction; academic well-being

Introduction

The safety measures and restrictions necessitated by the current COVID-19 pandemic have created a transition to remote delivery of many services, which has majorly increased the time spent utilizing videoconferencing software. Videoconferencing quickly got integrated into daily life and rapidly turned "from a novelty to a necessity"[1] This enabled the transition from in-person to virtual operations in multiple domains of life, from working from home to remote education, from virtual care for remote medical treatment and follow-up[2] to legal hearings for court proceedings[3]. It also enabled socializing due to the implementation of international spatial distancing policies, and has been used to support the mental health of vulnerable populations during the pandemic by methods such as digital group interventions provided to older adults that have significantly improved their loneliness and depressive symptoms[4]. However, as Chawla[5] stated, videoconferencing applications such as Zoom can be a boon or a bane during the pandemic. In other words, despite such benefits, videoconferencing can have disadvantages for some individuals. These comprise not only technical malfunctions and network challenges in dealing with increased online traffic, but also anxiety, worry, and tiredness due to the overuse of videoconferencing, which has been termed "Zoom fatigue"[6].

Fatigue carries different meanings in different contexts. For instance, in physiology, it describes the end result of excessive energy consumption whereas in psychiatry, it refers to a subjective state of tiredness associated with prolonged mental activity, reduced motivation, or boredom[7]. Psychological fatigue as defined from the psychiatric perspective is considered to be just like physiological fatigue, a reaction to demands that exceed the available resources[8]. Beyond available resources, the level of fatigue is also determined by the demands of the activities performed. Therefore, fatigue has also been conceptualized situationally and evaluated during various activities in daily life[9]. With the current COVID-19 pandemic, one situation that has emerged in multiple activities of daily life (both occupationally and socially) is participating in videoconferencing. This change in many individual's daily behavior underlines the importance in understanding the potential consequences of such a

ubiquitous change in how daily life proceeds. For this purpose, the Zoom Exhaustion and Fatigue Scale (ZEFS) was recently developed[1]. The present study reports the psychometric properties of the Turkish version and its relationship with measures of psychological distress, life satisfaction, and academic well-being.

Mental well-being has been explored with regards to COVID-19 in a broad sense in evaluating its general psychological impacts. However, the investigation into videoconference utilization in relation to mental health has yet to be carried out. The reported effects of the COVID-19 pandemic on the general public's anxiety and depression[10] and on students' anxiety, depression, psychological distress, and emotional difficulties[11] can be due to multiple reasons. One reason may be fear of COVID-19[12], and another may be the mental load created by Zoom exhaustion and fatigue. This type of fatigue is arguably specific to the consequences of the COVID-19 pandemic and is examined in the present study in relation to mental health, academic well-being, and life satisfaction.

To assess this concept, the Online Fatigue Scale (OFS) was developed in Italy. The OFS comprises 11 items and was tested on academics (aged 24-70 years), and higher scores correlated with poorer psychological well-being and a greater frequency of psychometric symptoms[13]. However, the items in the OFS do not to assess online fatigue *per se*, but rather its outcomes (e.g., *"I feel more socially anxious than usual"* or *"I had to give up most of my hobbies"*). Therefore, given that the ZEFS appears to have more validity in assessing the concept of online or Zoom fatigue, the present study focused on its adaptation to Turkish. A US study utilizing the ZEFS reported that teachers experience a moderate level of Zoom fatigue, and that Zoom fatigue significantly correlated with the duration of videoconferencing, being physically trapped, hyper gaze, and mirror anxiety[14]. Another US study found that ZEFS scores (i) positively correlated with facial dissatisfaction, (ii) were higher for females than for males, and (iii) were higher for Asian than for White participants[15]. These differences were mediated by facial dissatisfaction, which the authors explained as Zoom fatigue being caused (at least in part) by negative self-focused attention[15]. These studies show that underlying factors for Zoom fatigue may be mirror anxiety or facial dissatisfaction. Another finding concerning fatigue on online platforms comes from social media fatigue, which is defined as the mental exhaustion suffered upon technological, communicative, and informative overload due to participating in or interacting on various online social media platforms[13]. This has been found to be associated with high anxiety and depression among adolescents[13]. Social media fatigue is also positively correlated with experiencing academic decrement because of social media utilization[17]. Although anxiety, depression, and academic performance have been explored in relation to social media fatigue, their relationship with Zoom fatigue has not yet been investigated.

Zoom usage (and other videoconferencing facilities) has become increasingly widespread given the restrictions necessitated by the current COVID-19 pandemic, and it is important to understand its effects among all populations including Turkish samples. The present study psychometrically evaluates the Turkish version of the Zoom Exhaustion and Fatigue Scale (ZEFS), as well as examining its association with other mental well-being indices such as anxiety, depression, and academic well-being which have previously been explored in relation to social media fatigue[13,17]. These and other comorbidities (e.g., depression, anxiety, stress, and life satisfaction) have previously been investigated and have been found to be associated with the fear of COVID-19 in both specific studies[12] and meta-analyses[18]. Therefore, the aims of the present study were to validate the Turkish adaptation of the ZEFS and then to examine the associations between Zoom exhaustion and fatigue with psychological distress, academic well-being, and life satisfaction. The research questions (RQs) were:

- RQ1: Does ZEFS have adequate psychometric qualities in Turkish samples?
- RQ2: Do ZEFS scores correlate with other mental well-being indices that were hitherto not explored in relation to Zoom fatigue?
- RQ3: If such relationships exist, what model can explain the effects in terms of mediation?

It was expected that ZEFS scores would positively correlate with depression, anxiety, and stress scores, and negatively correlate with life satisfaction and academic well-being, in terms of the concurrent validity of the scale. Then, by testing these variables within a model, the aim was to further investigate the nature of their relationships with one another. Therefore, the present study explored the relationship

of the ZEFS with other established scales and tested a theoretically and logically meaningful model to better understand Zoom fatigue.

Method

Participants, procedure, and ethics

A total of 470 Turkish university students (268 females and 202 males; aged 18 to 33 years, mean = 20.26 years, SD = 2.18) participated in the study. Survey data were collected via online convenience sampling. Of the participants, 107 were freshmen (22.8%), 109 were sophomores (23.2%), 138 were juniors (29.4%), and 116 were seniors (24.7%). The study included participants from 61 of Turkey's total of 81 provinces. The survey was hosted on the *Google Forms* platform. The links were distributed in the online lecture groups of the research team and sent to students via email. Participation was voluntary. Informed consent was obtained from all participants. The survey data were anonymous and confidential, and brief information about the aims and purposes of the study were given to participants prior to the start of the study. The form was designed in such a way that the surveys could not be submitted with missing data. The research was conducted in the context of the Helsinki declaration. In addition, the study was approved by Artvin Coruh University Scientific Research and Ethical Review Board. Permission was obtained from Dr. Fauville to adapt the ZEFS. The scale was translated into Turkish by a researcher with previous English-Turkish translation experience specific to the domain of psychology with careful attention to preserve the meaning and make the reader understand the same idea as the original sentences, carefully considering alternatives and deciding on the one that most correctly reflected the prompt in the original scale. The translated scale was checked by the other researchers and their evaluations were synthesized, conforming with the procedure recommended for cross-cultural adaptations of self-report measures[15].

Measures

Zoom Exhaustion and Fatigue Scale (ZEFS)[1]. The 15-item ZEFS comprises five dimensions (general, visual, social, motivational, and emotional fatigue) with each dimension consisting of three items. Each item is rated on a five-point scale ranging from 1 ("never") to 5 ("always"), with higher scores reflecting a greater degree of Zoom fatigue. The psychometric properties of the ZEFS in the present study are presented in the 'Results' section. All 15 ZEFS items are provided in Appendix A (in both English and Turkish).

Depression, Anxiety and Stress Scale-21 (DASS-21; Original version[20]; Short version[21]; Turkish version[22]). The 21-item DASS-21 comprises three dimensions (depression, anxiety, and stress) with each dimension consisting of seven items. Each item (e.g., "I felt that life was meaningless.") is rated on a five-point scale ranging from 0 ("did not apply to me at all") to 3 ("applied to me very much, or most of the time") with higher scores reflecting a greater degree of psychological distress. In the present study, the Cronbach alphas were 0.91, 0.95, and 0.89, respectively.

Satisfaction with Life Scale (SWLS[23]; Turkish version[24]). The five-item SWLS was used to assess life satisfaction. Each item (e.g., "In most ways my life is close to my ideal") is rated on a seven-point scale ranging from 1 ("strongly disagree") to 7 ("strongly agree") with higher scores reflecting a greater degree of life satisfaction. In the present study, the Cronbach alpha was 0.86.

Subjective Academic Wellbeing Measure (SAWM[25]). The six-item SAWM was used to assess academic wellbeing. Each item (e.g., "I believe that I am a good student") is rated on a seven-point scale ranging from 1 ("almost never") to 5 ("almost always") with higher scores reflecting a greater degree of academic well-being. In the present study, the Cronbach alpha was 0.84.

Data analysis

First, descriptive statistics of the Turkish ZEFS Turkish version were analyzed. Then, the construct validity of the scale was examined with first-order and second-order confirmatory factor analyses (CFAs). Item Response Theory was tested utilizing the Graded Response Model (GRM). For the concurrent validity of the Turkish ZEFS, its associations with depression, anxiety, stress, life satisfaction, and academic well-being were examined. After IRT statistical analysis, the concurrent validity of the ZEFS scale was tested by exploring its relationship with scores from the scales assessing

depression, anxiety, stress, life satisfaction, and academic well-being. Two different bootstrapping mediation models were tested for incremental validity; (1) Zoom fatigue psychological distress → life satisfaction, and (2) Zoom fatigue → psychological distress → academic well-being via 10,000 bootstrapped samples. Age and gender were used as covariates in the models. Convergent validity of the Turkish ZEFS was assessed by calculating average variance extracted (AVE) and composite reliability (CR). Finally, Cronbach's alpha, McDonald's omega, and Guttmann's lambda, were calculated to assess the reliability of the Turkish ZEFS. SPSS 22, AMOS 24, Stata 14.2, and JAPS 0.11.1 were used in the analyses.

Results

Descriptive statistics (means, SDs, variance, skewness, and kurtosis) of the Turkish ZEFS are presented in Table 1. All skewness and kurtosis values are within the normality criteria. The first-order goodness-of-fit indices indicated that the five-dimensional model fitted the data well (CMID=291.25, df=80, CMID/df= 3.64, CFI=.959, NFI=.945, IFI=.959, SRMR=.041, RMSEA=.075). Also, second-order CFA results indicated that the ZEFS had a good fit to the data (CMID=293.75, df=85, CMID/df= 3.45, CFI=.960, NFI=.945, IFI=.960, SRMR=.041, RMSEA=.072). Factor loadings were above .71 and all factor loadings were significant. Therefore, the construct validity of Turkish ZEFS was supported by the CFAs results. Standardized factor loadings of first-order and second-order CFAs are presented in Figure 1.

- Table 1 and Figure 1 -

After CFA, IRT analysis was carried out (see Table 2). Since all α coefficients were higher than 1.0, the item difficulties and discrimination were appropriate. After IRT statistical analysis, the concurrent validity of the ZEFS scale was tested by exploring its relations to the scores from the scales measuring depression, anxiety, stress, life satisfaction, and academic well-being (see Table 3). The Pearson correlation results showed that all dimensions on the ZEFS were significantly and positively associated with depression (ranging between 0.268 and 0.555), anxiety (ranging between 0.273 and 0.457), and stress (ranging between 0.290 and 0.546), and negatively associated with life satisfaction (ranging between -0.182 and -0.309). Also, apart from the visual fatigue dimension, all dimensions were significantly and negatively associated with academic well-being (ranging between -0.164 and -0.30). The partial correlation results controlling for gender and age paralleled the Pearson correlations.

- Tables 2 and 3 -

The incremental validity of the ZEFS was also tested in a bootstrapping mediational model. Figure 2 (Panel A) shows the role of Zoom fatigue on life satisfaction via psychological distress. The model results indicated significant indirect effects between Zoom fatigue and life satisfaction with the partial mediating effect of psychological distress (b = -.065, SE = .02, 95% CI=-.098, -.032). Also Figure 2 (Panel B) shows the role of Zoom fatigue on academic well-being via psychological distress. The results indicated significant indirect effects between Zoom fatigue and academic well-being with the full mediating effect of psychological distress (b = -.066, SE = .01, 95% CI =-.093, -.041).

- Figure 2 -

The AVE values ranged from .509 to .759 and CR values ranged from .896 to .904; suggesting convergent validity. Finally, Cronbach's alpha, McDonald's omega, and Guttmann's lambda of the Turkish ZEFs were assessed. The reliabilities showed that the Cronbach's alphas (α = .891 - .902), McDonald's omega (ω = .817 - .904) and Guttmann's lambda (λ6 = .752 - .865) were all good to excellent. The final version of the Turkish Zoom Exhaustion and Fatigue Scale is presented in Appendix A.

Discussion

The COVID-19 pandemic has brought about many changes in individuals' daily lives, one of which is the transitioning from in-person to virtual communication to be able to continue business, education, healthcare delivery, and maintenance of social relationships. However, little is known about the psychological consequences of this increased use of digital platforms. One such consequence is reported to be Zoom fatigue, the exhaustion following videoconference meetings, which is predicted by the daily use of the Zoom application[26]. The present study reported the Turkish translation and validation

of the Zoom Exhaustion and Fatigue Scale (ZEFS) that was developed to assess this construct and evaluated its association with mental well-being indices and life satisfaction among a Turkish sample.

In the present study, although the means of the ZEFS subscales in the Turkish population were similar to the means from the original study performed on Western samples[1], in the present Turkish sample, higher means were obtained (i.e., for visual, motivational, and emotional fatigue, the scores of the Turkish sample were higher). The construct validity of ZEFS was supported in the Turkish sample, with both the first-order and second-order CFAs showing that the original five-dimensional model of the ZEFS were good fits to the data. For measurement validity, instead of Classical Test Theory (CTT), Item Response Theory (IRT) analysis was used, which describes the relationships between the responses of participants, scale item properties, and the assessed construct. While with CTT, a participant's ability can appear low with difficult test questions and high with easy ones, IRT can separate responses given from underlying ability and distinguish the properties of the test and the sample[27]. With IRT, item difficulties and discrimination were shown to be appropriate in the present study's sample.

Concurrent validity analysis found the scores on the ZEFS to be positively associated with anxiety, depression, and stress, and to be negatively associated with academic well-being and life satisfaction, as predicted by the researchers. Incremental validity of the ZEFS was explored via mediational models, where Zoom exhaustion and fatigue predicted (i) psychological distress that in turn predicted life satisfaction, and (ii) psychological distress that in turn predicted academic well-being. Therefore, beyond establishing its concurrent validity with other relevant psychometric measures, the ZEF's incremental validity was also demonstrated, attesting to its ability to predict mental well-being and life satisfaction measures. Finally, the ZEFS was shown to be reliable in the present Turkish sample with the satisfactory Cronbach's alpha, McDonald's omega, and Guttman's lambda coefficients. These robust validity and reliability scores indicate the ZEFS to be a valuable tool in assessing Zoom fatigue among the Turkish sample as well as predicting other variables such as mental well-being and life satisfaction.

The developers of the ZEFS defined Zoom fatigue as "a feeling of exhaustion from participating in video conference calls"[1] (p.2) but do not distinguish fatigue and exhaustion and consider them in tandem in their scale. However, from a physiological perspective, fatigue is differentiated from exhaustion in that fatigue depicts the possibility that function can be restored via rest and support provided for restorative mechanisms, whereas exhaustion designates a state where functional recovery does not take place[8]. Responses to a previously developed fatigue scale supported distinguishing the two constructs of physical and mental fatigue, and whereas usually a total score is obtained by adding all items, they recommended having one score for physical fatigue and another score for mental fatigue[28].

The authors of the ZEFS initially had items for mental and physical fatigue, but after removing items with a loading lower than the cutoff, they eliminated mental fatigue questions and merged the general fatigue items with mental fatigue items to generate the general fatigue construct[1]. Although future studies using other items may be able to follow Chalder et al.'s[28] recommendation of having separate scores for physical and mental fatigue after video conferencing, the present study used the validated ZEFS to establish its adaptation to the Turkish language. It should be noted that the developers of the ZEFS claimed that 'Zoom' is widely used and synonymous with "video conferencing", and therefore use the term 'Zoom fatigue' to refer to fatigue experienced during or after video conferencing using any platform and not just Zoom[1] (p. 2). Therefore, the insights that can be gained by using the ZEFS should not be considered as limited to the psychological repercussions of a single videoconferencing platform, but as the exhaustion and fatigue engendered by using videoconferencing applications more generally. However, the ZEFS does not state or break down the purpose or context of videoconferencing. Previous studies that showed a positive association between mirror anxiety or facial dissatisfaction and Zoom fatigue imply that in contexts when this anxiety may not be applicable (such as in Zoom meetings with intimate friend or family groups), Zoom fatigue may be lower or may have a different quality compared to the Zoom fatigue experienced when videoconferencing in different contexts. Future specifications of a ZEFS can address this issue by developing ZEFS for different purposes or contexts of Zoom usage, which would enable a comparison of which types of Zoom fatigue are more related with other mental wellbeing elements and the generation of recommendations to decrease Zoom fatigue specific to different contexts or utilization purposes of videoconferencing.

The present study has a number of limitations. First, the study did not ask the students to report their actual amount of time videoconferencing use. This could be integrated in future studies to investigate whether higher scores on the ZEFS reflect higher use of videoconferencing. Similarly, concurrent validity of the scale was not tested in the present study, therefore future studies should investigate discriminant validity by showing how the ZEFS distinguishes from other similar concepts such as physiological fatigue. Second, the sample was limited to Turkish university students and comprised self-report and cross-sectional data which are subject to well-established methods biases. Future studies can use the newly validated Turkish ZEFS with other age groups such as middle-schoolers and high-schoolers to explore age-specific academic well-being, mental well-being, and life satisfaction consequences due to Zoom exhaustion and fatigue. Third, the ZEFS can also be applied or a new ZEFS can be developed for contexts other than academics in settings where video conferencing is used for work or social purposes, as well as with older individuals to see if similar associations with psychological distress and life satisfaction emerge when Zoom is used for different purposes. Different contexts can be compared in terms of the level of Zoom fatigue with the same duration of Zoom utilization. Investigating the effects of Zoom exhaustion and fatigue on these and other variables of interest among employees and managers may provide valuable information for workforce mental well-being and sustenance of healthy and productive companies during the economic and psychological strains created by the COVID-19 pandemic.

The need for assessment tools to explore the effects of the COVID-19 pandemic on mental health has been noted, and one such assessment tool is the Zoom Exhaustion and Fatigue Scale, whose Turkish validation was carried out in the present study. Such efforts are valuable because they can inform authorities, school officials, and business administrators and guide them in implementing relevant measures to alleviate such exhaustion and fatigue resulting from videoconferencing in educational and/or occupational settings. This way, these employers can take an active and important step to mitigate one of the new psychological consequences that the COVID-19 pandemic appears to have initiated.

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Table 1
Descriptive statistics for the Turkish version of the Zoom Exhaustion and Fatigue Scale

Construct	Mean	SD	Confidence interval	Variance	Skewness	Kurtosis	CR	AVE	α	ω	λ6
General fatigue	8.41	3.06	8.12-8.68	9.38	.317	-.541	.896	.743	.891	.896	.856
Visual fatigue	8.46	3.45	8.14-8.77	11.89	.157	-1.001	.904	.759	.902	.904	.865
Social fatigue	7.86	3.14	7.58-8.15	9.84	.202	-.823	.816	.509	.808	.817	.752
Motivational fatigue	8.88	3.52	8.55-9.20	12.40	.062	-.992	.879	.709	.876	.879	.831
Emotional fatigue	7.86	3.69	7.53-8.21	13.64	.353	-.934	.896	.741	.897	.898	.855
Total score	41.47	13.67	40.24-42.73	187.05	.185	-.665	.903	.655	.936	.936	.956

Note. *SD* standard deviation; *CR* composite reliability; *AVE* average variance extracted; *α* Cronbach alpha; *ω* McDonald's omega; *λ6* Gutmann λ6

Table 2
Item Response Theory results for the Turkish version of the Zoom Exhaustion and Fatigue Scale

Item	α coefficient	SE	Confidence interval	*z*	$p > \|z\|$
Item 1	1.81	.14	1.52-2.09	12.48	.001
Item 2	2.38	.18	2.03-2.74	13.09	.001
Item 3	2.35	.17	2.01-2.71	13.16	.001
Item 4	1.27	.11	1.04-1.51	10.80	.001
Item 5	1.18	.11	0.95-1.40	10.40	.001
Item 6	1.47	.12	1.22-1.72	11.52	.001
Item 7	1.57	.13	1.31-1.83	11.75	.001
Item 8	1.65	.14	1.37-1.93	11.62	.001
Item 9	1.48	.12	1.23-1.74	11.53	.001
Item 10	2.44	.18	2.07-2.80	13.16	.001
Item 11	2.95	.22	2.51-3.39	13.21	.001
Item 12	3.15	.23	2.69-3.62	13.27	.001
Item 13	3.49	.27	2.95-4.02	12.80	.001
Item 14	2.67	.20	2.27-3.08	12.95	.001
Item 15	2.26	.17	1.91-2.61	12.68	.001

Table 3
Correlations for the Turkish version of the Zoom Exhaustion and Fatigue Scale

Construct	Depression	Anxiety	Stress	Life satisfaction	Academic well-being
General fatigue	.392**	.273**	.328**	-.270**	-.243**
Visual fatigue	.268**	.316**	.290**	-.182**	-.070
Social fatigue	.405**	.320**	.347**	-.226**	-.164**
Motivational fatigue	.543**	.420**	.503**	-.278**	-.282**
Emotional fatigue	.555**	.457**	.546**	-.293**	-.300**
Total score	.538**	.446**	.503**	-.309**	-.263**

Note. **p<.001

Figure 1

First-order (Panel A) and second-order (Panel B) CFA of the Turkish Zoom Exhaustion and Fatigue Scale. Note. *GF* general fatigue; *VF* visual fatigue; *SF* social fatigue; *MF* motivational fatigue; *EF* emotional fatigue

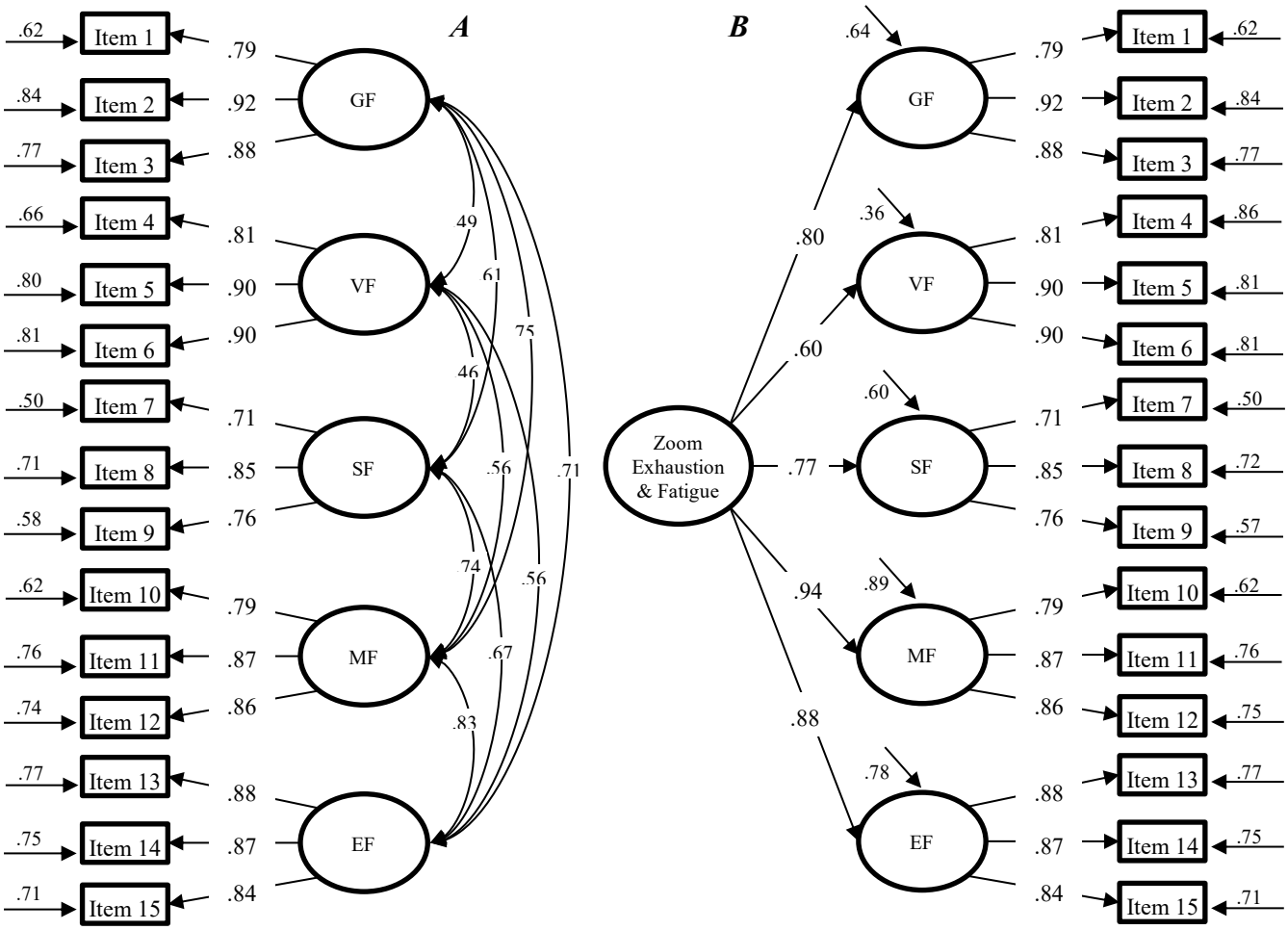
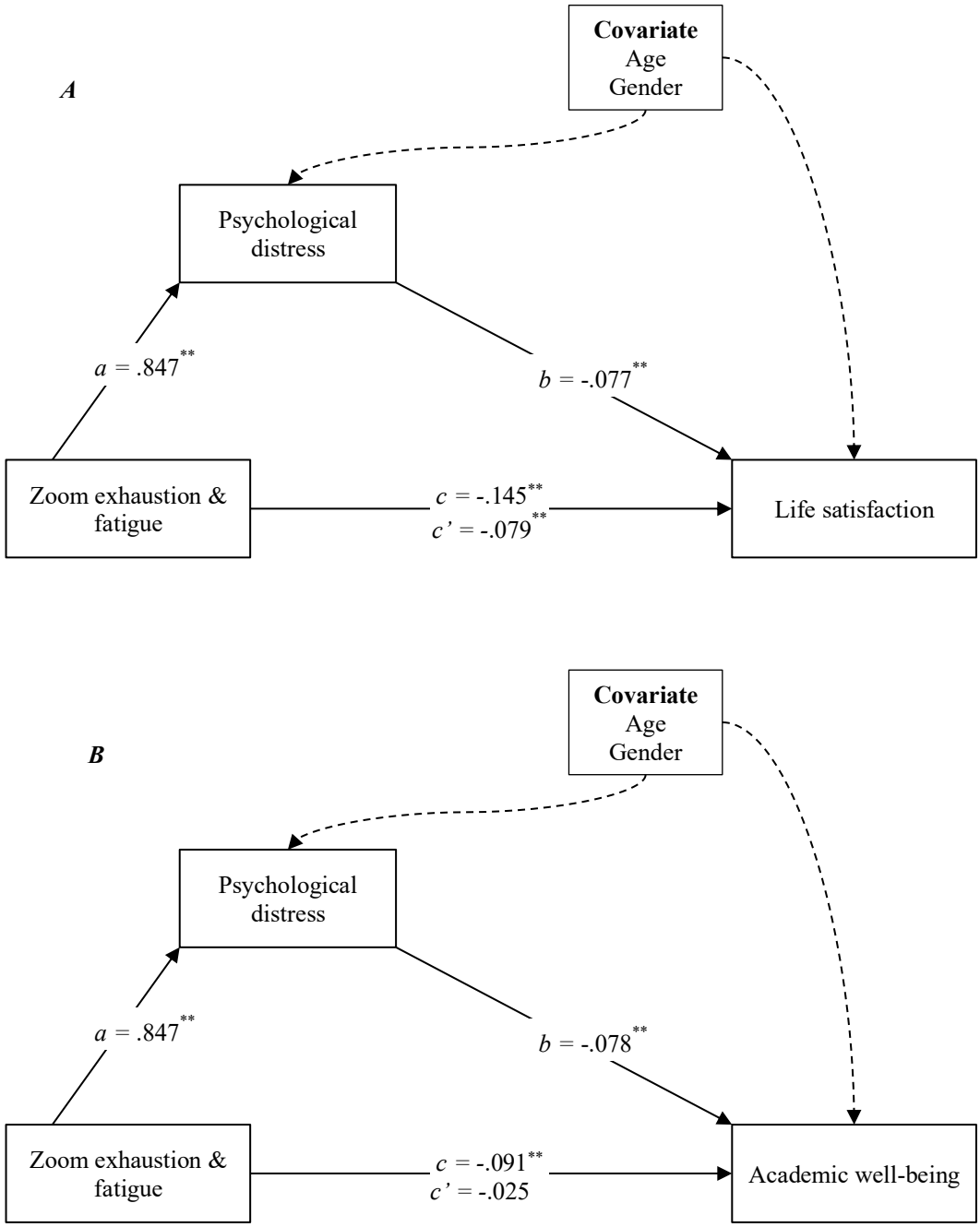


Figure 2
Mediated outcomes on life satisfaction (panel A) and academic well-being (panel B) showing indirect effects of Zoom fatigue via psychological distress. Note. $^{*}p<.05$, $^{**}p<.01$



Appendix A. Zoom Exhaustion and Fatigue Scale

Original Version (Fauville et al., 2021)	**Turkish Version**
After video conferencing…	***Video konferansa katıldıktan sonra…***
I feel tired (GF)	Yorgun hissederim
I feel exhausted (GF)	Tükenmiş hissederim
I feel mentally drained (GF)	Zihinsel olarak tükenmiş hissederim
my vision gets blurred (VF)	Görüşüm bulanıklaşır
my eyes feel irritated (VF)	Gözlerim tahriş olmuş gibi hissederim
I experience pain around my eyes (VF)	Gözlerimin çevresinde ağrı hissederim
I avoid social situations (SF)	Sosyal durumlardan kaçınırım
I just want to be alone (SF)	Sadece yalnız kalmak isterim
I need time by myself (SF)	Kendi kendime kalacağım vakte ihtiyaç duyarım
I dread having to do things (MF)	Birşeyler yapmak zorunda olmaktan endişe duyarım
I don't feel like doing anything (MF)	Hiçbir şey yapasım gelmez
I often feel too tired to do other things (MF)	Sıklıkla başka şeyler yapmak için fazla yorgun hissederim
I feel emotionally drained (EF)	Duygusal olarak tükenmiş hissederim
I feel irritable (EF)	Aksi, çabuk sinirlenebilir bir durumda olduğumu hissederim
I feel moody (EF)	Hızlı değişen duygular hissederim

GF= general fatigue; VF= visual fatigue; SF= social fatigue; MF= motivational fatigue; EF= emotional fatigue