Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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RESEARCH NOTE

Psychological tolls of COVID-19 on industry employees

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Introduction

As the outbreak of novel coronavirus (COVID-19) pandemic in 2020 has dramatically disrupted the tourism and hospitality labor market in the U.S., this research attempts to assess the psychological distress experienced by industry employees. The current investigation is built upon the stress process model (Pearlin, Menaghan, Lieberman, & Mullan, 1981), which postulates that acute stressors would lead to impaired health and well-being. This research identifies unemployment, pandemic-induced panic, and lack of social support as the key stressors and thus examines the impacts of the three stressors on the well-being of the tourism and hospitality employees.

Unemployment is identified as a key stressor as research has demonstrated that layoffs and other alternative measures can bring severe physical and mental health outcomes among the affected workforce (Wanberg, 1997). Moreover, the COVID-19 pandemic has sparked widespread panic in the general public (American Psychiatric Association, 2020). Given that previous studies have shown that traumatic events can lead to long-lasting mental health issues (Mills, Teesson, Ross, & Peters, 2006), this research further proposes pandemic-induced panic as another stressor. Finally, scientific evidence has suggested that social support plays a crucial role in coping with traumatic events (Mills et al., 2006). However, social-distancing or stay-at-home orders were imposed during the early stages of the COVID-19 pandemic. It is thus specified lack of social support as a key stressor that can impair the well-being of the tourism and hospitality workers during the pandemic.

Methodology

The survey questionnaire included three well-established multi-item scales. *Social support* was measured with the Oslo social support scale (OSSS-3) developed by Kocalevent et al. (2018). *Pandemic-induced panic* was assessed using the Impacts of Event Scale (IES) developed by Horowitz, Wilner, and Alvarez (1979). The IES includes 15 statements about a specific traumatic

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event. *Well-being* was assessed using the World Health Organization - Five Well-Being Index (WHO-5). The descriptions and points of all items were maintained from the original scales with slight changes in wording.

Research data were collected in the first two weeks of June 2020. Respondents were identified by an online panel company based on their occupations, including individuals who worked in the lodging or tourism sector. The resulting sample size included 617 respondents in lodging and 614 in tourism. Overall, females were accounted for 58.7% of the sample. Most were younger than 40 (62.5%) and identified themselves as Caucasian (69.0%). Nearly half received some forms of post-secondary education (52.9%). Moreover, 37.7% and 30.7% of the respondents were laid off or furloughed (with or without pay) due to COVID-19, and 31.6% were still employed with full pay.

Results

The frequency distributions of three psychological factors by employment status were first examined (see Table 1). Summated scores of three factors were calculated following the suggestions from the original scales. The results of chi-square tests revealed that the associations of employment status and three factors were all significant (social support: $\chi^2 = 16.40$; df = 6; $p < .01$; pandemic-induced panic: $\chi 2 = 38.67$; df = 6; $p < .001$; well-being: $\chi 2 = 24.90$; df = 6; $p < .001$). Only 11.5% of the respondents had strong social support, while 46.1% were in the poor category. Unemployed respondents had the highest percentage in the poor category (51.3%), while the percentages reduced to 43.7% and 42.2% for furloughed and employed workers.

Moreover, most respondents (69.0%) perceived the pandemic as a powerful or severe impact event (with a score higher than 26), which suggests that these respondents may have symptoms of post-traumatic stress disorder (PTSD) (Horowitz et al., 1979). Similarly, unemployed respondents were hit the hardest with 76.1% having a score higher than 26. Well-being was operationalized as low and high categories following Ariza-Montes, Arjona-Fuentes, Han, and Law (2018). Nearly 80% of the respondents reported poor well-being in this study. Unemployed respondents had the highest percentage in the poor category (83.8%), followed by furloughed (80.7%) and employed workers (78.6%).

The scores of three psychological factors were further examined across employment status and demographic variables (see Table 2). The results of analyses of variance and *t*-tests showed that unemployed and furloughed employed were more negatively impacted by the pandemic as they had significantly lower scores in social support and well-being and a higher score in pandemic-induced panic ($p < .05$). It was also found that female and younger respondents were impacted to a great extent as they were generally more panicked about the crisis and less satisfied with their life.

Finally, a series of regression analyses were performed. The first model involved testing the predictability of social support, pandemic-induced panic, employment status (employed and unemployed), gender, age, and sector of employment (tourism) (see Table 3). It was found that social support had the greatest effect on well-being ($\beta = 0.36$; $p < .001$), followed by pandemic-induced panic ($\beta = -0.19$ $p < .001$), employed ($\beta = 0.09$; $p < .01$), and female ($\beta = -0.08$; $p < .01$). The effects of age, unemployed, and tourism were not significant ($p > .05$). In the second model, the interaction effect of social support and pandemic-induced panic was added and found to be significant ($\beta = 0.07$; $p < .05$). As shown in Fig. 1, pandemic-induced panic negatively affected well-being among respondents who had poor or moderate levels of social support, while the negative effect was nearly erased among respondents with strong social support. In the third model, the interaction effects of two psychological factors (social support and pandemic-induced panic) and five employment and demographic variables (employed, unemployed, age, gender, and tourism) were added. It was found that the interaction effects of pandemic-induced panic and employed and age were significant ($p < .05$). As shown in Fig. 2, pandemic-induced panic had a negative effect on well-being among furloughed and unemployed respondents, while the effect was minimal among employed respondents. Moreover, pandemic-induced panic had greater negative effects on well-being among respondents who were older than 30.

Table 1
Frequency of distribution of psychological factors by employment status.

Variables	Unemployed ($n = 464$)		Furloughed ($n = 378$)		Employed ($n = 389$)		Total ($n = 1231$)	
	n	%	n	%	n	%	n	%
Social support								
3–8 (poor)	238	51.3	165	43.7	164	42.2	567	46.1
9–11 (moderate)	176	37.9	180	47.6	166	42.7	522	42.4
12–14 (strong)	50	10.8	33	8.7	59	15.2	142	11.5
Pandemic-induced panic								
0–8 (no meaningful)	25	5.4	28	7.4	47	12.1	100	8.1
9–25 (impact)	86	18.5	85	22.5	110	28.3	281	22.8
26–43 (powerful impact)	185	39.9	153	40.5	152	39.1	490	39.8
44–75 (severe impact)	168	36.2	112	29.6	80	20.6	360	29.2
Well-being								
0–17 (low)	389	83.8	305	80.7	273	70.2	967	78.6
18–25 (high)	75	16.2	73	19.3	116	29.8	264	21.4

Table 2
Scores of psychological factors.

Variables	Social support	Pandemic-induced panic	Well-being
Employment status			
Unemployed (n = 464)	8.43 (a)[1]	36.71 (a)	11.51 (a)
Furloughed (n = 378)	8.69 (a,b)	34.02 (a)	12.05 (a)
Employed (n = 389)	8.97 (b)	29.49 (b)	13.61 (b)
F-value	5.59**[2]	20.57***	15.25***
Gender			
Female (n = 723)	8.71	34.71	11.89
Male (n = 506)	8.64	32.01	12.98
t-Value	0.48	2.79**	3.32**
Age			
18–29 (n = 488)	8.42 (a)	34.48 (a)	12.17
30–39 (n = 282)	8.59 (a)	36.23 (a)	12.07
40+ (n = 461)	9.02 (b)	31.06 (b)	12.68
F-value	7.89***	9.64***	1.37

[1] Based on the results of Scheffe post hoc tests, means with the same letter are not significantly different (p > .05).
[2] *** denotes $p < .001$; ** denotes $p < .01$.

Table 3
Results of regression.

Predictors[1]	Model 1	Model2	Model 3
Social support	0.36***	0.35***	0.31***
Pandemic-induced panic	−0.19***	−0.19***	−0.11
Employed	0.09**	0.08**	0.09**
Unemployed	−0.01	−0.01	−0.01
Female	−0.08**	−0.08**	−0.08**
Age	0.01	0.01	0.01
Tourism	0.01	0.01	0.01
Social support * pandemic-induced panic		0.07*	0.07**
Employed * social support			0.06
Employed * pandemic-induced panic			0.10*
Unemployed * social support			−0.01
Unemployed * pandemic-induced panic			0.03
Female * social support			−0.02
Female * pandemic-induced panic			−0.02
Age * social support			0.02
Age * pandemic-induced panic			−0.20**
Tourism * social support			−0.02
Tourism * pandemic-induced panic			0.05
r-square	0.20	0.20	0.21

*** denotes p < .011; ** denotes p < .01; * denotes p < .05.

Discussions and conclusions

This research provided prompt assessments of the psychological impacts of the COVID-19 crisis on the tourism and hospitality employees in the U.S. Based on the stress process model (Pearlin et al., 1981), this research assessed various stressors experienced by respondents during the pandemic and how these stressors affected perceived well-being. Study findings revealed that most respondents felt panicked about the crisis, while the lack of support hampered their abilities to cope with the crisis. It was also found that unemployed and furloughed employees were more negatively impacted by the pandemic. Moreover, female and younger respondents were also hit harder regardless of their employment status. This research offers timely empirical information regarding the psychological toll of the pandemic as well as how individuals with certain demographics were influenced to a greater extent.

The current study filled the gap in the literature by unveiling how the health and wellness of the tourism and hospitality employees were threatened by the health and economic crisis. Previous studies have examined the impacts of recessions (e.g., Papatheodorou & Pappas, 2017), 2003 Severe Acute Respiratory Syndrome (SARS) epidemic (e.g., Chien & Law, 2003), and the COVID-19 pandemic (Karabulut, Bilgin, Demir, & Doker, 2020; Sharma & Nicolau, 2020; Yang, Zhang, & Chen, 2020), while most studies have focused on macro-economic impacts or operational issues. It is a pressing matter to examine the impacts of unemployment on tourism and hospitality employees as layoffs and furloughs are a common practice in the industry during the crisis (Chien & Law, 2003). Given that the tourism and hospitality industry is among the hardest-hit industries during the pandemic, the topics of unemployment and its impacts deserve more attention.

This research uncovered the immediate impacts of the pandemic, while the negative effects of social isolation can last even after the lockdowns are lifted (Usher, Bhullar, & Jackson, 2020). Also, previous studies on unemployment indicate that prolonged

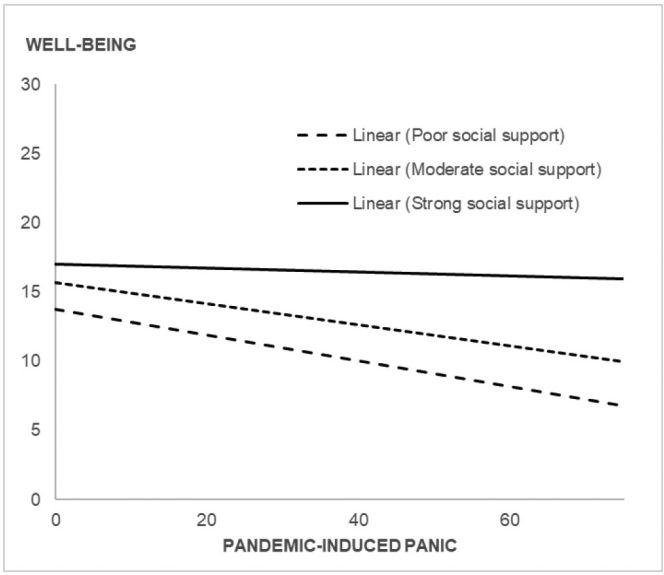

Fig. 1. Interaction effect of pandemic-induced panic and social support.

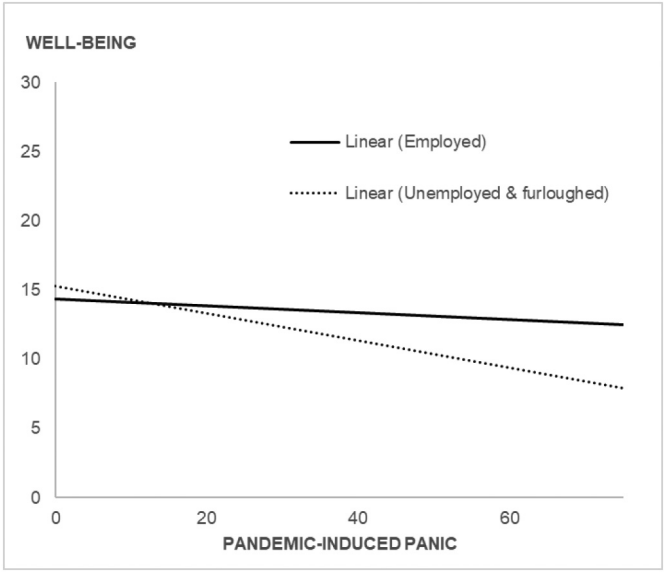

Fig. 2. Interaction effect of pandemic-induced panic and employed.

unemployment can impair an individual's daily functioning and health to a greater extent (Wanberg, 1997). It is thus urged future research to investigate the long-term impacts of the COVID-19 crisis on tourism and hospitality employees. Future research can also examine the quality and industry of reemployment. Moreover, this research provided initial findings regarding the disproportionate impacts on women, which deserves a more in-depth examination in future research as women are already a majority in the tourism and hospitality workforce.

References

American Psychiatric Association (2020). New poll: COVID-19 impacting mental well-being. Retrieved May 27 2020 from https://www.psychiatry.org/newsroom/news-releases/new-poll-covid-19-impacting-mental-well-being-americans-feeling-anxious-especially-for-loved-ones-older-adults-are-less-anxious.

Ariza-Montes, A., Arjona-Fuentes, J. M., Han, H., & Law, R. (2018). Work environment and well-being of different occupational groups in hospitality: Job Demand–Control–Support model. *International Journal of Hospitality Management, 73*, 1–11.

Chien, G. C., & Law, R. (2003). The impact of the severe acute respiratory syndrome on hotels: A case study of Hong Kong. *International Journal of Hospitality Management*, *22*(3), 327–332.
Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of event scale: A measure of subjective stress. *Psychosomatic Medicine*, *41*(3), 209–218.
Karabulut, G., Bilgin, M. H., Demir, E., & Doker, A. C. (2020). How Pandemics Affect Tourism: International EvidenceHow pandemics affect tourism: International evidence. *Annals of Tourism Research*, *84*, 102991.
Kocalevent, R. D., Berg, L., Beutel, M. E., Hinz, A., Zenger, M., Härter, M., ... Brähler, E. (2018). Social support in the general population: Standardization of the Oslo social support scale (OSSS-3). *BMC Psychology*, *6*(1), 31.
Mills, K. L., Teesson, M., Ross, J., & Peters, L. (2006). Trauma, PTSD, and substance use disorders: Findings from the Australian National Survey of Mental Health and Well-Being. *American Journal of Psychiatry*, *163*(4), 652–658.
Papatheodorou, A., & Pappas, N. (2017). Economic recession, job vulnerability, and tourism decision making: A qualitative comparative analysis. *Journal of Travel Research*, *56*(5), 663–677.
Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T (1981). The stress process. *Journal of Health and Social Behavior*, *22*(4), 337–356.
Sharma, A., & Nicolau, J. L. (2020). An open market valuation of the effects of COVID-19 on the travel and tourism industry. *Annals of Tourism Research*, *83*, 102990.
Usher, K., Bhullar, N., & Jackson, D. (2020). Life in the pandemic: Social isolation and mental health. *Journal of Clinical Nursing*. https://doi.org/10.1111/jocn.15290.
Wanberg, C. R. (1997). Antecedents and outcomes of coping behaviors among unemployed and reemployed individuals. *Journal of Applied Psychology*, *82*(5), 731–744.
Yang, Y., Zhang, H., & Chen, X. (2020). Coronavirus pandemic and tourism: Dynamic stochastic general equilibrium modeling of infectious disease outbreak. *Annals of Tourism Research*, *83*, 102913.

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