

The cost of service: Exploring customer interactions and emotional labour on front-line employees' emotional exhaustion and ambulatory blood pressure.

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### **Abstract**

Front-line employees are the representatives of many organizations. These employees are expected to satisfy all customers' needs with a smile on their face. Although employees may appear satisfied while interacting with customers, research reveals that many front-line employees are suppressing their own emotions to act in way that is more favourable for the organization, which is known as emotional labour (Morris & Feldman, 1996). The negative consequences of emotional labour are robust (e.g., Hülshager & Schewe, 2011), however research has yet to explore the relationship between emotional labour and physiological measures. Restaurant servers and bartenders (N = 41) wore a blood pressure monitor for one working day and completed hourly 3-minute diary entries after their blood pressure was taken. Using multilevel modelling, the study's results demonstrated that deep acting predicted emotional exhaustion over time, and emotional exhaustion predicted higher blood pressure over time.

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The cost of service: Exploring customer interactions and emotional labour on front-line employees' emotional exhaustion and ambulatory blood pressure.

For 24 consecutive years, Southwest has been ranked in FORTUNE Magazine's World's Most Admired Companies list (Southwest Airlines, 2018). They are also the leading domestic carrier in the United States with annual profitability sky rocketing compared to their competitors (Southwest Airlines, 2018). Why is Southwest Airlines so popular? One of the reasons why Southwest Airlines is so successful is because they provide customers flexibility to transcend rules and regulations to better serve or accommodate the customer (Freiberg and Freiberg, 1996). In 2011, Southwest Airlines exemplified this when they made breaking news because they refused to depart so they could wait for a man who hoped to see his grandson before he was taken off life support (CNN.com). As this example illustrates, Southwest's success is based on exceeding, rather than merely meeting, customer expectations.

Exceeding customer expectations is increasingly becoming a requirement for financial success in the customer service industry. Global Consumer Pulse Research (2015) found that 80% of lost business is attributed to poor customer service. Empirically, service quality is related to many customer outcomes including customer satisfaction, attitudinal loyalty, and purchase intentions (Miranda, Tavares, Queiró, 2018). Zeithaml, Bitner and Gremler (2006) suggested that when organizations exceed customer expectations, they have the ability to enhance customer loyalty, which, in turn, results in increased competitive advantage. Therefore, customer service industries are in a unique position where their financial success is largely determined by the eye of the beholder. To gain competitive advantage, customer service companies must continually search for ways to enhance customer experience and this has led to an increased focus on front-line employees as service providers.



Front-line employees are the face of many customer service organizations. For many customer service companies, the performance of these employees becomes the representation of the organization as a whole (Ashforth, Kulik, & Tomiuk, 2008). Customers' expectations of service quality through front-line employees' performance is associated with an array of consequences including, customer satisfaction, loyalty, purchase intentions, and profitability (Gracia, Cifre and Grau, 2010; Ziethaml, 2000). The performance of front-line employees is thus, a crucial variable to the success of customer service organizations (Sliter, Jex, Wolford, & McInnerney, 2010).

The pressure to deliver high quality services and exceed customer expectations also requires an immense amount of effort and resources from front-line employees. Numerous studies suggest that many front-line employees are suppressing their own emotions to act in a way that is more favourable for the organization (e.g., Cho, Rutherford & Park, 2012; Morris & Feldman, 1996; Walsh & Bartikowski, 2012; Yagil & Medler-Liraz, 2017). This emotional labour – i.e., expressing organizationally desired emotions - has been shown to drain employees' cognitive and emotional resources (Grandey, 2000) and to have consequences for individual well-being (Hülshager & Schewe, 2011). However, much of this research has been largely conducted with retrospective and subjective (i.e., self-report) measures giving rise to concerns of common-method and recall bias. The consequences of emotional labour and whether it is an occupational health risk has also been up for debate due to the cross-sectional and subjective nature of the available research (Singh & Glavin, 2017).

Therefore, the purpose of my study was to re-examine the experience of emotional labour among front-line service employees using two methodological refinements. First, I used ecological momentary assessment rather than cross-sectional reports. Ecological momentary

assessment is a type of sampling that captures “in the moment” behaviours and experiences (Shiffman, Stone & Hufford, 2008) thereby minimizing recall and common method biases (Fullagar & Kelloway, 2009). Second, I supplemented self-report measures of strain (i.e., emotional exhaustion) with a physiological indicator -ambulatory blood pressure – that has been shown to be responsive to stress (e.g., Wong & Kelloway, 2016). The use of diary data (ecological momentary assessment) and physiological measures of stress represents an extension to the current literature that has relied on post-hoc, subjective reports of stress.

### **Theoretical Background**

#### **Conservation of Resources**

Conservation of Resources theory proposes that people have a limited set of valued resources that they are motivated to obtain, retain and protect (Hobfoll, 1989). Resources are defined as objects (e.g., house), conditions (e.g., work), energies (e.g., time) or personal characteristics (e.g., optimism) that are valued by the individual (Diener & Fujita, 1995). Individuals invest their resources with the expectation of receiving positive outcomes, and attempt to conserve their resources by using the most effective resources for demanding situations (Arnold, Connelly, Walsh, & Ginis, 2015). Stress prevails either when a person’s resources are threatened with loss, when a person resources are lost, or when resources are invested, and the person does not gain sufficient resources in return (Hobfoll, 2001).

Resource loss has been shown to occur in various circumstances including traumatic events such as, hurricanes and mass shootings (e.g., Zwiebach, Rhodes, & Roemer, 2010), but also daily work occurrences such as, work conflict (Grandey, 2000). Resource loss has also been extended to self-regulatory behaviours, such as emotional labour at work – the action of

suppressing or regulating one's emotion to behave in a way that is more favourable for the organization (Hobfoll, Vinokur, Pierce, & Lewandowski-Romps, 2012).

Emotional labour is suggested to be a workplace stressor that expends resources (Park, O'Rourke, & O'Brien, 2014). For instance, Singh and Glavin (2017) suggest that emotional labour requires regulation from employees to fit the display rules of a particular situation. The prolonged regulation then has the potential to deplete an employees' energy reserves, which will likely result in the perceived loss of resources. The consequences of resource loss have been primarily associated with stress and strain (Halbesleben & Buckley, 2004). Empirical evidence has shown that when individuals lose resources at work, they are more likely to experience strain in the form as burnout, emotional exhaustion, depression, and physiological outcomes (Kessler, Turner, & House, 1998; Shirom, 1989; Melamed, Shirom, Toker, Berliner, & Shapira, 2006). More specifically, emotional labour has been commonly found to result in strain in the form of emotional exhaustion; the state of fatigue after sustained depletion of emotional resources typically endured through frequent interactions with people (Wang, Huang, Yin, & Ze, 2018).

### **Emotional Labour Strategies**

Hochschild (1983) indicates that the emotional labour process can be achieved by either surface acting or deep acting. Surface acting refers to faking the required emotional expression whereas deep acting refers to the action of changing inner feelings to match the required emotion. To exemplify the distinction between these two strategies, imagine a restaurant server who is approached by an uncivil customer who claims to be hungry and demands immediate food service. In response the server might recognize that the customer's rudeness is likely caused by another reason that has nothing to do with the service they are providing and decides to accept the behavior and provide the best service possible. Alternatively, the server might be annoyed by

the rude customer, but decides to put on a smile and act friendly only because it is expected by the organization.

In both cases, the server abides by the company's policy by serving the customer in a desirable manner. However, in the first scenario the server engages in deep acting by redefining the situation (i.e., attributing the customer's behavior to an external cause). The server actively changes their internal feelings and becomes sympathetic towards the rude customer. In the second case the server engages in surface acting by adjusting their expression of emotion to behave in a more acceptable way. In other words, deep acting involves the profound manipulation of internal feelings to be consistent with desirable behaviours whereas surface acting manipulates only outward expressions to also be consistent with acceptable behaviours (Hochschild, 1983).

When considering the examples above, one might expect there will be different consequences with different strategies. Hochschild (1983) argues that surface acting and deep acting are equally detrimental to employees because they both require investing resources. However, other researchers suggest that surface acting is associated with a host of negative employee outcomes, including outcomes as detrimental as emotional exhaustion and burnout (Cho et al., 2012; Yagil & Medler-Liraz, 2017) whereas deep acting is recognized to be more favourable for the employee and result in, for example, increasing job satisfaction (Walsh & Bartikowski, 2012).

Hülshager and Schewe (2011) suggest that surface acting is detrimental for employees for a number of reasons, including (i) it is energy and resource depleting, (ii) it requires the manipulation of inauthentic emotions, (iii) it triggers negative emotions, and (iv) it impedes social interactions. Surface acting - the action of suppressing and faking emotions - is likely

draining cognitive and emotional resources. The act of expressing feelings that are not congruent to how they feel then likely results in strain or in this case emotional exhaustion; the feeling of being depleted of one's emotional resources. Hülshager and Schewe suggest that deep acting, not only helps preserve resources, but also contributes to gaining resources and amplifying favourable interactions. For instance, since deep acting requires the modification of inner emotional states, this process is said to make employees experience the positive emotions they are displaying. The experience of positive emotions then has the capacity to widen an employee's personal resources (Frederikson & Joiner, 2002). Additionally, Hülshager and Schewe suggest that unlike surface acting, deep acting involves authentic emotional expressions, which elicit favourable reactions from customers (Henning-Thurau, Groth, Paul, & Gremler, 2006). For example, Henning-Thurau et al. indicate that customers have the ability to identify authentic versus inauthentic smiles. Eliciting favourable reactions from customers through authentic emotional expressions then helps front-line employees build strong relationships with customers and increase customer satisfaction and loyalty (Grandey, 2003).

Nonetheless, there is still research that suggests that deep acting requires a great deal of mental energy and may even be more detrimental than surface acting (Liu, Prati, Perrewé, & Ferris, 2008). For example, Liu et al. suggest that deep acting may be more psychologically demanding because it requires service employees to internalize and to sincerely feel the positive emotions they are expressing. In addition, Grandey (2003) suggests that deep acting requires similar regulation of emotions as surface acting, but the positive reactions from customers when engaging in deep acting may restore employees' emotional resources in a way that surface acting cannot. In support of deep acting having more favourable implications, Xanthopoulou, Bakker, Oerlemans and Koszucka (2017) diary study with 50 employees from emotionally demanding

occupations found that daily surface acting resulted in increased levels of daily exhaustion whereas daily deep acting resulted in lowered levels of daily exhaustion. Due to the similar methodological design used in Xanthopoulou et al.'s study and the present study (i.e., diary study), I hypothesized that:

**H1a. High levels of surface acting would predict higher momentary assessments of emotional exhaustion at work.**

**H1b. High levels of deep acting would predict lower momentary assessments of emotional exhaustion at work.**

### **Emotional Labour and Blood Pressure**

The allostatic load model of stress physiology suggests that when an individual is exposed to repeated stress the accumulation results in the “wear and tear” on the body and brain (McEwen & Stellar, 1993). According to the allostatic load model, the initial adaptations of stress consist of psychological, physiological, and psychosomatic changes in the central nervous system commonly resulting in anxiety, sleeping problems, and mood changes (McEwen & Stellar, 1993). The accumulation of stress leads to secondary allostatic load processes, which involve changes in the immune, cardiovascular, and metabolic systems. The final stage referred as allostatic overload (i.e., when the accumulation of stress cannot be reduced) can result in health outcomes as severe as cardiovascular disease diagnosis, psychological disorders, and mortality (Wong & Kelloway, 2016).

Cardiovascular disease has been found to be the endpoint of workplace stress in several reviews (e.g., Belkic, Landsbergi, Schnall, & Baker, 2004; Hemingway & Marmot, 1999; Schnall, Landsbergis, & Baker, 1994), and has been related to high ambulatory blood pressure (i.e., blood pressure measured at regular intervals) at work (Schnall, Schwartz, Landsbergis,

Warren, & Pickering, 1998). For instance, Schnall et al. suggest that job strain such as, emotional exhaustion, and exposure to stressful work conditions such as, work overload, lack of social support, and job insecurity have been shown to cause the same emotional reactions that results to the increase in blood pressure.

The path from workplace stress to cardiovascular disease begins at the primary stage of the allostatic model when the body reacts to a present stressor (Ganster & Rosen, 2013). For instance, the primary allostatic model may be activated when a front-line employee comes in contact with an uncivil customer. However, when the primary allostatic model is activated (e.g., when the negative interaction with a customer occurs), it does not necessarily result in cardiovascular disease. Rather, the elevated blood pressure may return to baseline when the stressor (e.g., the customer) is gone. In the current study, momentary assessments of systolic (maximum pressure exerted through the pulse wave cycle) and diastolic (minimum pressure exerted between pulse waves) blood pressure were used to capture cardiovascular reactivity in response to emotional labour.

Although I have found no studies that examine the direct link between emotional labour and actual blood pressure, a recent study examined the relationship between emotional labour and self-reported blood pressure (Singh & Glavin, 2017). Singh and Glavin recognize that emotional labour research findings have been inconsistent on the issue of whether emotional labour embodies an occupational health risk. To assess health outcomes, the researchers asked respondents to rate their general health at the present time. The respondents were also asked whether they have ever been informed by their doctor or health care provider that they have high blood pressure. The researchers found that emotional labour, specifically surface acting, was associated with self-reported poor health and high blood-pressure. Even though Singh and

Glavin provide valuable findings suggesting that emotional labour may be related to increased self-reported blood pressure, the researchers' measurement approach of asking respondents of previous diagnoses of high blood pressure is too broad, and ultimately may not accurately represent the effects of emotional labour on blood pressure. Thus, my proposed research extends these findings. Specifically, I hypothesized that:

**H2a. High levels of surface acting would predict higher momentary assessments of ambulatory blood pressure.**

**H2b. High levels of deep acting would predict lower momentary assessments of ambulatory blood pressure.**

## Method

### Participants

A total of 41 restaurant servers and bartenders participated in the study, recruited from various restaurants across Halifax ( $n = 33$ ) and Ottawa ( $n = 8$ ). Participants were recruited by word of mouth, social media platforms (i.e., Facebook and LinkedIn), and media publicity (i.e., newspaper article). The average age of the sample was 27.39 ( $SD = 4.94$ ). Over half of the sample were bartenders ( $n = 24$ ; 58.5%). Just over two-thirds of the sample was female ( $n = 28$ ; 68.3%) and were university and/or college graduates ( $n = 28$ ; 68.3%). Four held supervisory positions (9.8%), 21 were full-time (51.2%), 14 part-time (34.1%), and two were casually employed (4.9%). The average years in the job was 3.78 ( $SD = 3.30$ ), whereas the average years worked in customer service was 10.95 ( $SD = 5.77$ ). A typical day shift ranged from five to 12 hours, and hours worked per week varied from seven to 45 hours. The majority of the participants selected to wear the blood pressure monitor during a night a shift ( $n = 32$ ; 78%). No



participants reported previous diagnoses of high blood pressure and 19.5% were smokers. Average body mass index was 23.92 (SD = 4.15).

### **Equipment**

Ambulatory blood pressure was collected using Suntech Oscar 2 (Suntech Medical Instruments, Raleigh, North Carolina) ambulatory blood pressure monitors. This light weight monitor is capable of assessing heart rate, systolic blood pressure, and diastolic blood pressure. For the purpose of this study, the ambulatory blood pressure cuff was programmed to automatically inflate every hour throughout the data collection period.

After each blood pressure reading, participants were asked to complete a brief questionnaire. Participants were given a hardcopy of the diary booklet to record their experiences and emotions throughout the work shift. The diary entries consisted of questions assessing posture (sitting, standing, walking, running) and consumption in the past hour (food, caffeine, cigarettes), interactions, and work activities. Short-scales were used to measure momentary assessments of emotional exhaustion and emotional labour strategies (see Appendix A).

### **Measures**

**Posture.** Current posture was assessed by asking participants to check off whether they were sitting, standing, walking or running while the blood pressure monitor took their hourly measurement.

**Consumption.** Consumption in the past hour was assessed by asking participants to check all the options that were applicable in the past hour from when the blood pressure measurement was taken. Consumption options included, caffeine, cigarettes, and food.

**Workplace interactions.** Participants were asked to check off who they were interacting with at work for the past 15 minutes prior to the hourly blood pressure measurement. Interaction

options included, manager, supervisor, coworker, and customer. Participants were also asked to rate their interaction from 1 (negative) to 5 (positive).

**Work activity.** Current work activity was assessed by asking participants to check off their current work activities that were applicable around the time when the hourly blood pressure monitor took their measurement. Example work activities are “food quality check”, “taking payment from customer”, and “cleaning customer tables.”

**Surface acting.** Surface acting is defined as the extent to which employees modify and fake expressions. The emotional labour strategy of surface acting was measured through three items (Brotheridge & Lee, 2003). Employees rated their frequency of surface acting on a scale from 1 (never) to 5 (always). A sample item is “In the past hour at work, I resisted expressing my true feelings.” The reliabilities in my study for this scale ranged from .82 to .99.

**Deep acting.** Deep acting is defined as the extent to which employees modify feelings to meet display rules. The emotional labour strategy of deep acting was measured through three items (Brotheridge & Lee, 2003). Employees rate their frequency of deep acting on a scale from 1 (never) to 5 (always). A sample item is “In the past hour at work, I tried to actually experience the emotions that I must show.” The reliabilities in my study for this scale ranged from .79 to .99.

**Emotional Exhaustion.** I used a four-item measure of emotional exhaustion used by Hur, Moon and Han (2015) which uses a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). This scale was originally adapted from Maslach and Jackson (1981). A sample item is “Currently, I feel emotionally drained from my work.” The reliabilities in my study for this scale ranged from .87 to .98.

### **Pre-data Collection Questionnaire**

A questionnaire was administered to all participants prior to the daily diary entries (See Appendix B). The pre-data collection questionnaire included information on demographics, (e.g., age, gender, education, etc.), job information (e.g., position, employment status, average hours worked, etc.), and medical history (e.g., smoking, high blood pressure, etc.).

### **Procedure**

Restaurant servers and bartenders who agreed to participate with their manager's approval and signed the informed consent were informed about the procedure and received the daily dairy package. Participants were first asked to complete the pre-data collection questionnaire and then familiarize themselves with the daily diary package. Participants were asked to pick one day of the week they were working to wear the blood pressure monitor. The researcher demonstrated how to put on and set up the blood pressure monitor. Three baseline measures of blood pressure readings were taken for each participant. The participants wore the blood pressure monitor during one work shift on the selected data collection day. The blood pressure monitor was pre-set to take their blood pressure every hour. Once participants completed their data collection day, the researcher came to collect the study materials and to provide feedback. Participants were compensated \$100 for their full participation. Each organization with five or more participants were entitled to receive an organization-specific report of the findings.

### **Analyses**

The dataset was cleaned for erroneous ambulatory blood pressure readings and checked for assumptions. Readings associated with an error message from the ambulatory blood pressure monitor were removed. There were no multivariate outliers; all Cook's Distance values were under 1.

Data pertaining to hypotheses regarding individuals' experience at work were analyzed using multi-level modeling with 369 observations ( $M = 5$ ,  $SD = 2.6$ ) from 41 participants. For all 2-level mixed models, the covariance structure used was unstructured, and the scaled identity structure (i.e., allows repeated measures to be independent) was used for participant ID.

An unconditional model (levels specified, no predictors), and hierarchical random intercept models were conducted for each of the dependent variables of interest, respectively (Meyers, Gamst, & Guarino, 2016). In addition, following Shek and Ma's (2011) multilevel modeling tutorial, time interactions for key predictors were incorporated in the final step of random intercept models (Shek & Ma, 2011). Although no hypotheses were developed regarding the time interactions, the findings can provide valuable information on the trajectory of emotional labour. For instance, a linear slope would suggest that the rate of change remains constant over time (Shek & Ma, 2011).

In preparation for the analyses, work tasks were summed into four groups, server duties ("*opening duties*," "*cashing out*," and "*closing duties*"), customer duties ("*taking customer orders*," "*punching in orders*," "*running and delivering food*," "*food quality check*," and "*taking payment from customer*"), social interactions ("*interacting with colleagues*," and "*interacting supervisor*"), and cleaning ("*cleaning customer tables*," and "*cleaning other areas of the restaurant*"). For the types of social interactions (i.e., manager, supervisor, coworker, and customer) that did not occur prior to the blood pressure reading, the quality was rated as neutral, since the lack of interaction evoked neither a negative nor a positive appraisal. All continuous variables with the exception of time and blood pressure readings were standardized to aid interpretation of the results.

## Results

Descriptives and inter-correlations of key study variables can be found in Table 1. For the multilevel models, fit of the models were examined to determine whether the models appropriately represented the data. The estimate of fit used was -2 restricted log likelihood with lower -2 restricted log likelihood numbers indicating better representation of the data. Effect sizes were also considered to determine fit of the models. In addition, the Wald Z test statistic was observed to determine whether there were significant variances left to be explained in each model. For instance, a non-significant model meaning that there were no significant variances left to be explained whereas a significant model indicating that there were significant variances left to be explained in the model.

The baselines were obtained from the unconditional models. The -2 restricted log likelihood numbers were examined in each model. The final hierarchical models, with the exception of emotional exhaustion, provided better fit through lower -2 restricted log likelihood numbers (Table 2). However, all final hierarchical models, including emotional exhaustion, provided better fit through the observation of effect sizes. Intraclass correlations were also calculated for all unconditional models. The intraclass correlations represent the percentage of total variance that can be attributed to between person level. Summaries (fit and ICCs) of the hierarchical multilevel analyses are presented in Table 2 with detailed results following.

Table 1.

*Descriptives and intercorrelations among study variables (N=41)*

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Manager Interactions	3.65	1.04	—												
2. Supervisor Interactions	3.45	.88	.54***	—											
3. Coworker Interactions	4.23	.96	.49***	.34***	—										
4. Customer Interactions	3.76	1.03	.02	.07	.32***	—									
5. Server Duties	.25	.43	-.00	-.02	.05	.02	—								
6. Customer Duties	.85	.36	-.11	-.06	-.04	.05	-.54***	—							
7. Social Interactions	.76	.43	-.12	-.20**	.06	.17*	-.07	.08	—						
8. Cleaning	.65	.48	-.14*	-.20**	.00	.07	-.06	.27***	.27***	—					
9. Surface Acting	2.59	1.30	-.01	.04	-.16*	-.40***	-.26***	.34***	-.03	.20**	—				
10. Deep Acting	3.17	1.14	.07	-.07	-.05	.20**	.05	-.14*	.10	.02	-.19**	—			
11. Work Emotional Exhaustion	2.20	1.16	-.27***	-.32***	-.45***	-.41***	-.06	.16*	.13	.16*	.49**	-.16*	—		
12. Work Systolic BP	138.81	18.95	.05	-.06	.10	.07	.08	.06	-.03	.15*	-.10	-.26***	.12	—	
13. Work Diastolic BP	82.77	13.10	-.06	-.07	-.06	-.07	-.10	.12	.06	.14	.03	-.23**	.24***	.53***	—

*Note.* For work activities (server duties, customer duties, social interactions, and cleaning), 0 = no, 1 = yes, \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 2.

*Model fit and ICC summary*

Dependent Variable	Unconditional Model		Random Intercept Models
	<i>-2LL</i>	<i>ICC</i>	<i>-2LL</i>
Emotional Exhaustion at Work	635.89	71.20%	
Controls			593.51***
Time			579.76***
Predictors			490.87***
Time X Predictors			499.00***
Systolic Blood Pressure at Work	1779.85	58.74%	
Controls			1603.97**
Time			1598.51**
Predictors			1463.83**
Time X Predictors			1461.92**
Diastolic Blood Pressure at Work	1691.78	27.49%	
Controls			1539.19
Time			1538.26
Predictors			1414.83
Time X Predictors			1412.13

*Note.* Wald Z (variance left to be explained) statistically significant at \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

**Hypothesis 1****Emotional labour and perceived emotional exhaustion at work**

A four step hierarchical multilevel model of perceived emotional exhaustion at work was tested with (i) controls; gender, age, and BMI, (ii) time, (iii) predictors; workplace tasks,

workplace interactions, surface acting and deep acting, (iv) and time interactions for key predictors (i.e., surface acting and deep acting) in the final step (Shek & Ma, 2011). Results are presented in Table 3.

Table 3.

*Workplace predictors and perceived emotional exhaustion at work model summary*

Fixed Effects		Estimate (SE)
		<i>Emotional Exhaustion at Work</i>
Step 1		
Gender		.40(.35)
Age <sup>z</sup>		.10(.18)
BMI <sup>z</sup>		-.08(.18)
		R <sup>2</sup> = .71
Step 2		
Time		.07(.02)***
		Δ R <sup>2</sup> = .02
Step 3		
Server Duties		-.11(.09)
Customer Duties		-.15(.11)
Social Interactions		-.04(.09)
Cleaning		-.01(.08)
Quality of Manager Interactions <sup>z</sup>		-.18(.06)**
Quality of Supervisor Interactions <sup>z</sup>		.03(.05)
Quality of Coworker Interactions <sup>z</sup>		-.15(.05)**
Quality of Customer Interactions <sup>z</sup>		-.11(.04)*
Surface Acting <sup>z</sup>		.29(.05)***

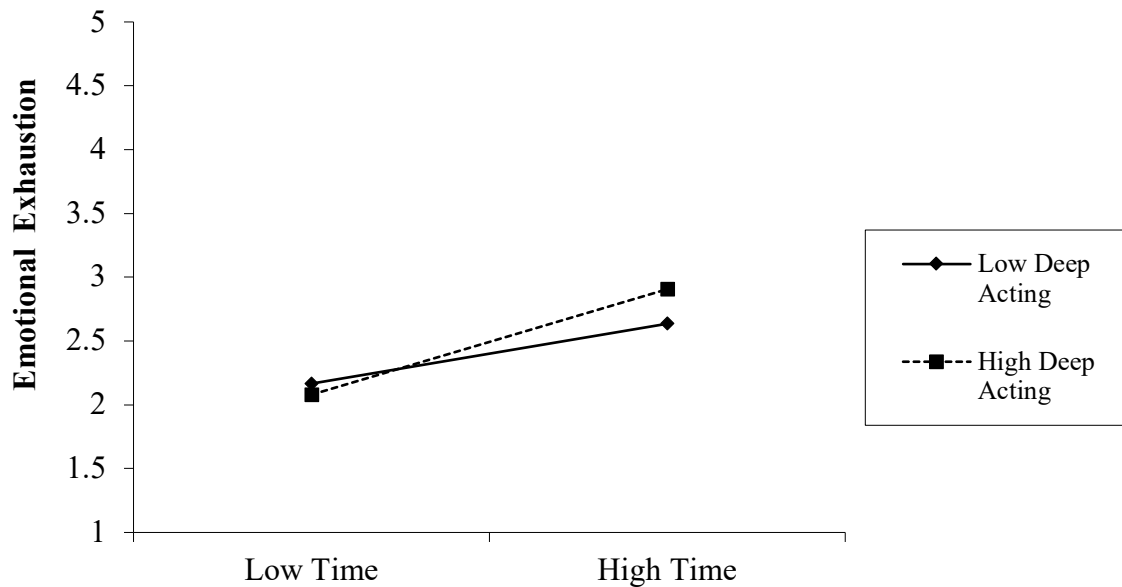


Fixed Effects	Estimate (SE)
	<i>Emotional Exhaustion at Work</i>
Deep Acting <sup>z</sup>	.00(.05)
	$\Delta R^2 = .01$
Step 4	
Time X Surface Acting <sup>z</sup>	-.00(.01)
Time X Deep Acting <sup>z</sup>	.03(.01)*
	$\Delta R^2 = .01$

*Note.* <sup>z</sup>Standardized,  $R^2$  = explained variance,  $\Delta R^2$  = change in explained variance, for gender, 0 = male, 1 = female, \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

At step one, no control variables were significant. However, at step two, emotional exhaustion increased over the course of a work day ( $B = .07, p < .001$ ).

At step three, better interactions with managers ( $B = -.18, p = .001$ ), coworkers ( $B = -.15, p = .002$ ), and customers ( $B = -.11, p = .012$ ) led to lower perceived emotional exhaustion. In support of hypothesis one, surface acting was significantly related to higher perceived emotional exhaustion ( $B = .29, p < .001$ ). At the final step, over the course of the work day, employees' engaging in deep acting were found to have higher perceived emotional exhaustion at the end of their shift ( $B = .03, p = .027$ ; see Figure 1).



*Figure 1.* Interaction between low and high deep acting on emotional exhaustion early in the shift and late in the shift.

## Hypothesis 2

### Emotional labour and ambulatory blood pressure at work

Four step hierarchical multilevel models of ambulatory systolic and diastolic blood pressure at work was tested with (i) controls; posture, consumption, baseline measures, gender, age and BMI (ii) time, (iii) predictors; workplace tasks, workplace interactions, surface acting and deep acting, emotional exhaustion (iv) and time interactions for key predictors (i.e., surface acting, deep acting) in the final step (Shek & Ma, 2011; Compared to emotional exhaustion, more controls were necessary to incorporate in the models such as, posture, consumption, and baseline measures, which have been scientifically shown to influence ambulatory blood pressure (Suntech Medical, 2010).

Table 4. Compared to emotional exhaustion, more controls were necessary to incorporate in the models such as, posture, consumption, and baseline measures, which have been scientifically shown to influence ambulatory blood pressure (Suntech Medical, 2010).

Table 4.

*Workplace predictors and ambulatory cardiovascular reactivity at work model summaries*

Fixed Effects	Estimate (SE)	
	<i>SBP at Work</i>	<i>DBP at Work</i>
Step 1		
Posture		
Sitting	-2.14(3.60)	3.89(3.14)
Standing	.82(2.12)	-.78(1.86)
Consumption		
Caffeine	-2.77(2.23)	-2.31(1.89)
Cigarette	-.34(3.80)	-3.05(2.89)
Food	2.53(2.15)	2.45(1.90)
Gender	9.74(4.66)*	7.89(2.49)**
Age <sup>z</sup>	-2.48(2.23)	-1.31(1.29)
BMI <sup>z</sup>	3.06(2.59)	.92(1.51)
Blood Pressure Baselines	.57(.19)**	.36(.16)*
	R <sup>2</sup> = .42	R <sup>2</sup> = .13
Step 2		
Time	.99(.43)*	.39(.38)
	Δ R <sup>2</sup> = .01	Δ R <sup>2</sup> = .01
Step 3		
Server Duties	-1.73(2.85)	4.21(2.51)

Fixed Effects	Estimate (SE)	
	<i>SBP at Work</i>	<i>DBP at Work</i>
Customer Duties	-2.82(3.69)	1.81(3.32)
Social Interactions	4.95(2.82)	-.115(2.39)
Cleaning	-.62(2.49)	.45(2.20)
Quality of Manager Interactions <sup>z</sup>	3.80(1.62)*	1.43(1.36)
Quality of Supervisor Interactions <sup>z</sup>	-3.34(1.69)*	-.66(1.29)
Quality of Coworker Interactions <sup>z</sup>	1.83(1.56)	.90(1.36)
Quality of Customer Interactions <sup>z</sup>	-.29(1.42)	-1.25(1.26)
Surface Acting <sup>z</sup>	.34(1.65)	-1.62(1.34)
Deep Acting <sup>z</sup>	-.71(1.52)	-1.71(1.21)
Emotional Exhaustion <sup>z</sup>	.11(2.12)	3.35(1.59)*
	$\Delta R^2 = .05$	$\Delta R^2 = .03$
Step 4		
Time X Surface Acting	-.05(.45)	-.26(.41)
Time X Deep Acting	-.54(.43)	-.65(.39)
	$\Delta R^2 = .00$	$\Delta R^2 = .00$

*Note.* <sup>z</sup>Standardized,  $R^2$  = explained variance,  $\Delta R^2$  = change in explained variance, for posture and consumption, 0 = no, 1 = yes, for gender, 0 = male, 1 = female, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

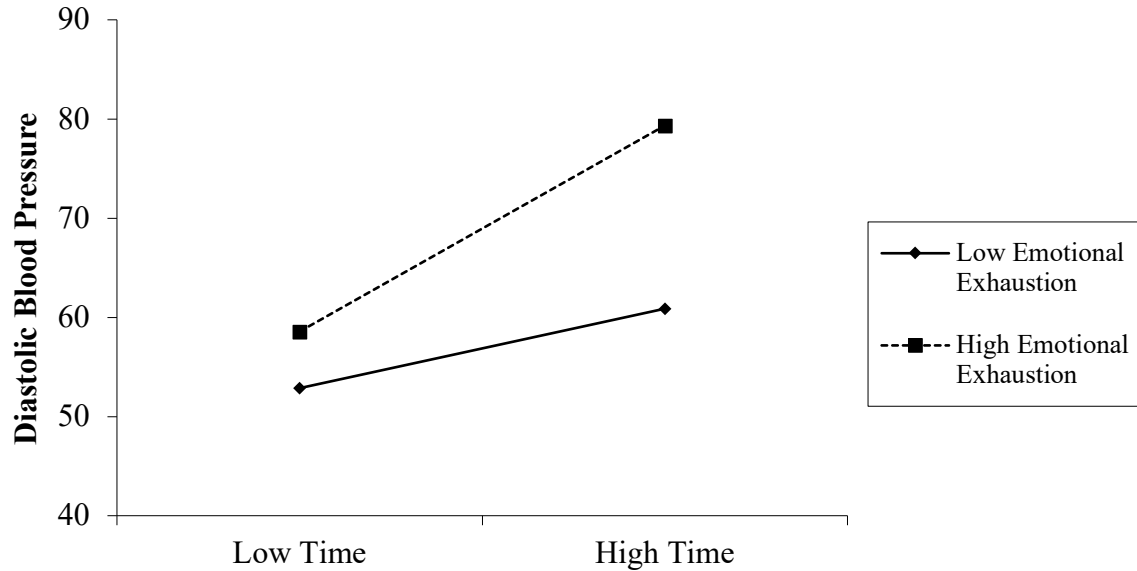
At step one, several of the control variables were significant predictors of cardiovascular reactivity. Baseline measures were significantly associated with systolic ( $B = .57, p = .005$ ) and diastolic blood pressure ( $B = .36, p = .032$ ). Female participants had higher systolic ( $B = 9.74, p = .046$ ) and diastolic blood pressure readings than male participants ( $B = 7.89, p = .004$ ).

At step two, systolic blood pressure increased over time ( $B = .99, p = .022$ ). Adding the predictors in step three, it was found that only manager and supervisor interactions influenced

cardiovascular reactivity such that, positive interactions with managers resulted in higher systolic blood pressure ( $B = 3.80, p = .020$ ), and negative interactions with supervisors resulted in higher systolic blood pressure ( $B = -3.41, p = .037$ ). In addition, emotional exhaustion was positively associated with diastolic blood pressure ( $B = 3.35, p = .039$ ). Contrary to hypothesis two, neither surface acting nor deep acting influenced ambulatory blood pressure.

### **Post-hoc analysis**

Considering that emotional exhaustion was positively associated with higher diastolic blood pressure, a post-hoc analysis was conducted to determine whether self-reported emotional exhaustion influenced ambulatory blood pressure over time. In accordance with the allostatic load model, when experiences of stress accumulate it can affect cardiovascular systems such as, blood pressure (McEwen & Stellar, 1993). In this case, the reoccurring experiences of stress whether it is through emotional labour or even negative workplace interactions has the potential to result into strain (e.g., emotional exhaustion), which may then result in cardiovascular reactivity such as, increased blood pressure. Other researchers support that job strain (e.g., emotional exhaustion) can result in emotional reactions that results to the increase in blood pressure (Schnall et al., 1998). Therefore, the interaction between time and emotional exhaustion was added in the final step of the model. The interaction between time and emotional exhaustion improved model fit for systolic ( $\Delta R^2 = .01$ ) and diastolic ( $\Delta R^2 = .04$ ) blood pressure. In addition, emotional exhaustion over the course of a shift was found to result in higher diastolic blood pressure ( $B = 1.08, p = .024$ ; Figure 2).



*Figure 2.* Interaction between low and high emotional exhaustion on diastolic blood pressure early in the shift and late in the shift.

### Discussion

This present study was interested in determining whether emotional labour embodies an occupational health risk for front-line employees. First, a hierarchical model of control variables, time, workplace tasks, workplace interactions, and emotional labour was examined in predicting front-line employees' perceived emotional exhaustion. Second, a hierarchical model of control variables, time, workplace tasks, workplace interactions, emotional labour, and emotional exhaustion was examined in predicting front-line employees' ambulatory blood pressure. Consistent with past research (e.g., Singh & Glavin, 2017; Xanthopoulou et al., 2018), surface acting was expected to result in higher emotional exhaustion and ambulatory blood pressure whereas deep acting was expected to result in lowered emotional exhaustion and ambulatory blood pressure. Partial support for emotional labour in predicting cardiovascular and psychological outcomes was found.

**Hierarchical model in predicting front-line employees' perceived emotional exhaustion**

**Workplace tasks.** Workplace activities such as, server duties, customer duties, social interactions, and cleaning were considered in the model as primary predictors. Although none of the workplace activities were significant in predicting perceived emotional exhaustion, server duties, customer duties, social interactions, and cleaning were negatively correlated with emotional exhaustion, suggesting that not engaging in these tasks may lead to higher perceived emotional exhaustion. Perhaps frequent workplace tasks provide the opportunity for front-line employees' to keep busy during their shift, which may result in the inability to reflect on one's personal state such as, how emotionally exhausted one truly feels.

**Workplace interactions.** Workplace interactions such as, manager, supervisor, coworker and customer interactions were included in the model as secondary predictors. Lower quality manager, coworker and customer interactions were significantly associated with higher perceived emotional exhaustion. Consistent with research, negative leadership, coworker and customer interactions have the ability to lower employee well-being, and increase emotional exhaustion (Arnold & Walsh, 2015; Cho, Bonn, Han, & Lee, 2016; Hur, Kim, & Park, 2015). However, Cho et al.'s study that examined data from front-line restaurant employees found that customer incivility had the strongest power for increasing emotional exhaustion, followed by supervisor incivility, and coworker incivility. Although the current findings differ such that - negative manager interactions, followed by coworker, and customer interactions were the most significantly associated with front-line employees' perceived emotional exhaustion - the difference may have resulted from the selected measures. Cho's et al.'s study used measures of workplace incivility defined as - low-intensity deviant behaviour with ambiguous intent to harm

- whereas the current study uses quality of interactions where negative interactions may not necessarily be ambiguous or low-intensity deviant behaviours.

It is also plausible that negative interactions coming from managers may be perceived as more stressful because of their hierarchical status. For example, managers have the power to promote employees, thus a negative interaction can result in repercussions for potential employment opportunities, which may lead to higher strain (Cho et al., 2016). In addition, in the present study it was found that individuals who experienced negative interactions with managers and coworkers were more likely to experience these negative interactions more than once during their shift, compared to those who experienced negative interactions with customers. Therefore, the re-occurring nature of these negative interactions likely exacerbated the effects on front-line employees' perceived emotional exhaustion.

**Surface acting and deep acting.** Emotional labour such as, surface acting and deep acting were included as the final predictors in the model. In addition, time trajectories were incorporated to determine how the predictors change over time (Shek & Ma, 2011). Surface acting – the action of faking's one emotions to act in an organizationally desirable way – was found to be positively and significantly associated with perceived emotional exhaustion, which corresponds with the majority of the emotional labour literature findings. Interestingly, deep acting was not associated with perceived emotional exhaustion, but when time was incorporated emotional exhaustion increased over the shift. Aligned with Liu et al.'s (2008) hypothesis, it is plausible that deep acting requires a great deal of mental energy and is more psychologically demanding than surface acting. With the majority of emotional labour research being cross-sectional (e.g., Cho et al., 2012; Morris & Feldman, 1996; Walsh & Bartikowski, 2012; Yagil & Medler-Liraz, 2017), perhaps the negative repercussions of deep acting only evolve over time. In



addition, Grandey (2003) suggested that deep acting requires similar regulation of emotions as surface acting, but the positive reactions from customers when engaging in deep acting may restore employees' emotional resources. However, what happens when positive reactions from customers do not occur? The lack of positive reactions from serving customers, especially for employees exerting their resources to please customers, may then gradually increase strain such as, emotional exhaustion.

### **Hierarchical model in predicting front-line employees' ambulatory blood pressure**

**Workplace tasks.** Workplace activities, such as typical server duties, customer duties, social interactions, and cleaning were considered in the model as primary predictors. No significant findings were found in relation to ambulatory blood pressure. However, social interactions (i.e., coworker and supervisor) was marginally significant with systolic blood pressure, which may suggest that engaging in interactions during working hours, regardless of the nature of the conversation, may increase cardiovascular reactions.

**Workplace interactions.** Workplace interactions such as, manager, supervisor, coworker and customer interactions were included in the model as secondary predictors. Contrary to the emotional exhaustion model, negative supervisor interactions were associated with higher systolic blood pressure, and positive interactions with managers was associated with higher systolic blood pressure. The former finding is consistent with research such that, supervisor incivility is more likely to cause stress compared to other forms of incivility because supervisors have the authority to appraise employee performance, and provide recognition and rewards (Cho et al., 2016). In the customer service industry, it is also more likely for employees to work along supervisors rather than managers, which can increase the likeliness of negative interactions occurring. In addition, the finding that positive manager interactions increase systolic blood

pressure may also be related to the idea that managers are in authoritative positions. As mentioned, in customer service organizations, supervisor interactions typically occur more frequently compared to manager interactions. Hence, when an employee is called in to speak with a manager, stress may occur due to the anticipation of the nature of the conversation. Therefore, even when the conversation is positive it may take cardiovascular reactions more time to come back to baseline compared to frequent interactions endured by supervisors, coworkers, and/or customers.

**Surface acting, deep acting, and emotional exhaustion.** Emotional labour, emotional exhaustion, and time interactions were included as the final predictors in the model. Again, time trajectories were incorporated to determine how the predictors change over time (Shek & Ma, 2011). Surface acting nor deep acting were significant predictors of ambulatory blood pressure. In accordance to the allostatic model, the elevated blood pressure may return to baseline when the stressor is gone (Ganster & Rosen, 2013). Considering that emotional labour and blood pressure was recorded once every hour, there is a possibility that when the blood pressure measurement was taken the stress endured from emotional labour already returned back to baseline.

Nonetheless, a post-hoc analysis showed that over the course of a shift increases in emotional exhaustion were associated with increases in diastolic blood pressure. These results may suggest that emotional labour does not increase blood pressure directly. Instead, it is plausible that emotional labour increases emotional exhaustion (i.e., strain), which then has the potential to increase ambulatory blood pressure.

### **Limitations**

Although surface acting was found to predict emotional exhaustion, and deep acting was found to increase emotional exhaustion over time, there were no significant findings in regard to emotional labour and ambulatory blood pressure, which may have resulted from the design of the present study. The present study only examined emotional labour and the outcomes from one working day. Thus, it is hard to determine and make inferences of the long-term effects of front-line employees' emotional labour.

The active nature of the job also affected data collection in the current study. There were many blood pressure measurements that came up as inaccurate because front-line employees were likely moving around too much while it was being taken, and as a result these measurements were removed from the dataset. The deletion of erroneous blood pressure measures ultimately limited the amount of blood pressure measurements that were included in the analysis, reducing my ability to find significant effects.

Another potential limitation is the nature of the sample collected. First, the sample was collected using convenience sampling such that, participants reached out (with permission from their managers) to the researcher about participating in the study. The study was promoted by social media and word of mouth and, possibly as a result, the age of the sample was relatively young. Chronic states such as emotional exhaustion and higher blood pressure may not be as easy to detect in a younger sample.

In addition, although cardiovascular baseline measures were included as controls, no personality traits were considered. For instance, research has shown that trait-hostility tends to be related to cardiovascular reactivity (Barefoot, Dodge, Peterson, Dahlstrom, & Williams, 1989). Thus, employees may have had higher blood pressure throughout their shift, regardless of

emotional labour strategies used. Also, due to the complexity of employment in restaurant industries, part-time/full-time status could have been potentially used as a control variable.

### **Practical and Research Implications**

The current study offers partial support that emotional labour embodies an occupational health risk for front-line employees. Specifically, the current study's results demonstrated that the cross-sectional data replicates the common pattern in the emotional labour literature such that, surface acting is positively related to the increase in emotional exhaustion. A different finding emerged when incorporating the longitudinal effects, which demonstrated that deep acting increased emotional exhaustion throughout the shift. The latter finding may suggest that the negative effects of deep acting only evolve throughout time. Although emotional labour did not increase ambulatory blood pressure, the results support that emotional exhaustion resulting from workplace stressors (e.g., emotional labour and negative workplace interactions) has the potential to increase ambulatory blood pressure.

Organizations should reconsider and attempt to mitigate the negative effects of daily work occurrences experienced by front-line employees. For example, fostering support and providing resources for front-line employees may help mitigate the potential health risks endured through emotional labour and negative workplace interactions. Specifically, managers and/or supervisors can provide support by informing employees that the customer is not always right, and that they do not need to expend all their energy trying to satisfy an unappreciative customer. In addition, negative interactions from customers may be difficult to remove in the workplace, but positive interactions from managers, supervisors, and coworkers can be improved. Small actions such as, providing recognition to employees, working as a team, and being able to delegate work tasks, have been shown to help mitigate the negative consequences of workplace

stressors and improve employee health (e.g., Day, Kelloway & Hurrell, 2014; Grawitch, Gottschalk, & Munz, 2006; Kelloway & Myers, 2019).

Although deep acting was found to be more detrimental over time, more longitudinal research is warranted to determine the long-term effects of engaging in both deep acting and surface acting. Future studies examining emotional labour and ambulatory blood pressure over the course of a week, compared to one working day, can help determine which technique is more sustainable for front-line employees to engage in. In addition, future studies should consider the action of expressing one's true emotions compared to emotional labour – the action of suppressing one's emotions to act in an organizationally desirable way. Lastly, future research should consider potential moderators of the negative health effects of emotional labour, such as a supportive work climate, or psychologically healthy leadership.

### **Conclusion**

The purpose of this research was to determine whether emotional labour embodies an occupational health risk for front-line employees. The current study demonstrated that over the course of one work shift, deep acting, has the potential to increase front-line employees' self-reported emotional exhaustion. Although this study provides support of the negative mental health consequences of emotional labour, more support is needed to determine whether emotional labour influences physical health. In addition, future research must continue exploring the longitudinal effects of emotional labour to determine whether these effects are exacerbated or mitigated over longer periods of time.

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Appendix A

Diary Entry

1. **Current time:** \_\_\_\_\_ am / pm

2. **Current posture** (check one):

- Sitting
- Standing
- Walking
- Running
- Other (specify): \_\_\_\_\_

3. **In the past hour** have you consumed (check all that applies):

- Caffeine
- Cigarettes
- Food

4. **Current location** (check one):

- Work
- Home

Other (specify): \_\_\_\_\_

5. **Identify all the people you have been interacting with for the last 15 minutes** (leave this question blank if you have been alone):

<input type="checkbox"/> Manager(s). Rate the quality of this interaction (circle <u>one</u> ):				
1 Negative	2	3 Neutral	4	5 Positive
<input type="checkbox"/> Supervisor(s). Rate the quality of this interaction (circle <u>one</u> ):				
1 Negative	2	3 Neutral	4	5 Positive

<input type="checkbox"/> Coworker(s). Rate the quality of this interaction (circle <u>one</u> ):				
1 Negative	2	3 Neutral	4	5 Positive
<input type="checkbox"/> Customer(s). Rate the quality of this interaction (circle <u>one</u> ):				
1 Negative	2	3 Neutral	4	5 Positive

6. **Current** work activity (check all that applies):

- Opening duties
- Greeting customers
- Taking customer orders
- Punching in orders
- Running and delivering food
- Food quality check
- Taking payment from customer
- Cleaning customer tables
- Cleaning other areas of the restaurant
- Interacting with colleagues
- Interacting with supervisor
- Cashing out
- Closing duties
- Other (specify): \_\_\_\_\_

<i>In the <b>past hour</b> at work I... (circle <u>one</u>):</i>	Never				Always
Resisted expressing my true feelings.	1	2	3	4	5
Pretended to have emotions that I don't really have.	1	2	3	4	5
Hid my true feelings about a situation.	1	2	3	4	5

<i>In the <b>past hour</b> at work I... (circle <u>one</u>):</i>	Never				Always
Made an effort to actually feel the emotions that I need to display to others.	1	2	3	4	5
Tried to actually experience the emotions that I must show.	1	2	3	4	5
Really try to feel the emotions I have to show as part of my job.	1	2	3	4	5

<i>Currently... (circle <u>one</u>):</i>	Strongly Disagree				Strongly Agree
I feel frustrated by my job	1	2	3	4	5
I feel I'm working too hard on my job	1	2	3	4	5
Working with people directly puts too much stress on me	1	2	3	4	5
I feel emotionally drained from work	1	2	3	4	5

Appendix B

Pre-data Collection Questionnaire

**Demographics:**

Age: \_\_\_\_\_

Gender:

- Male
- Female
- Transgender Female
- Transgender Male
- Gender Variant/Non-Conforming
- Not listed: \_\_\_\_\_
- Prefer not to answer

Highest level of completed education:

- Less than grade 12
- Grade 12
- Community College
- Bachelor
- Master, Doctoral or Professional Degree

**Job description:**

Job position: \_\_\_\_\_

Select **all** that applies:

- Permanent
- Casual
- Supervisory
- Full-time
- Part-time



Average hours worked per shift: \_\_\_\_\_

Average hours worked each week: \_\_\_\_\_

Length of time worked at the restaurant: \_\_\_\_\_ (years/months)

Length of time worked in customer service \_\_\_\_\_ (years/months)

Average net sales per shift: \_\_\_\_\_

What day of your work week do you plan to collect your data?

- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

**Medical history:**

Are you currently on any prescribed medication?

- Yes
- No