Exploring the Role of Measuring Positive Experiences in Stress Management

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Abstract—**A large amount of work and repeated exposure to adverse experiences make emotional workers stressed. Since stress is highly subjective in nature, the existing standardized intervention methods can be less effective. In this paper, we propose a stress management system that enables emotional workers to look into their state of mind and regulate stress if necessary. The system quantifies the state of the user's mind by collecting positive and negative emotions. The measured emotional state helps the users to reflect on their current emotional state and prepare actionable interventions. We conducted preliminary studies to derive design considerations. We conclude by discussing what additional elements this system required to manage stress.**

Index Terms—**Mental health, Stress management, Personal informatics**

I. INTRODUCTION

Call center workers are called emotion workers. They consume plenty of their emotions in direct interaction with customers. They are easily exposed to considerable stress due to problems such as excessive workload, competition, and lack of autonomy [1]. An increasing number of workers suffer from mental health problems such as burnout and depression due to not effectively managing this stress [2].

In order to improve working conditions for workers, many companies make a lot of efforts, such as preparing a manual for responding to rude and aggressive calls, preparing a rest area for break time, and hiring counselors to check their mental health. However, due to the nature of their work, they repeatedly experience negative emotions and find it difficult to take sufficient breaks. Some organizations also offer mindfulness-based therapies to reduce stress [3]. But these only work in experimental environments [4]. In addition, since stress is a very subjective characteristic, the existing simple and uniform stress management method is ineffective in managing personal stress. Therefore, we need to design a personalized stress management program.

In this workshop paper, we propose designing an evidence-based stress intervention program that considers the working context. We derived design considerations by conducting a study to understand the perceived stress level of workers in their workspace. The system provides a mechanism that measures the individual's state of mind, an opportunity to review the effectiveness of personalized stress relief, and an appropriate intervention by detecting dangerous moments.

II. SYSTEM DESIGN

We conducted a preliminary study to identify the elements needed to manage the stress of emotional workers and what to consider when designing the system. Then, applying the design guidelines learned through the study, we propose a system that allows emotional workers to check and reflect on their state of mind during work.

A. Preliminary study for Design Consideration

We conducted field observations and focus group interviews on gaining a broader understanding of emotional workers' work environments and stress. First, we identified the constraints on the space to be used for the study through observation of the actual work environment. Then we interviewed for about one and a half hours with six people (3 people from each center) from two call centers for. Through interviews, we gained an in-depth understanding of how workers perceive and relieve stress, how their emotions change during work, and what competencies are required for call center work.

First, a high volume of work and dealing with rude and aggressive customers exposed workers to negative emotions and stress. They handled many calls per day, especially on the next day of a holiday or when there was a significant incident like a personal data leak, and the number of calls increased exponentially. They also worked very tight without a break as they had to keep a log of previous call work between calls. Therefore, we needed to find a way not to burden users when collecting data to measure their state of mind in a hectic environment.

In addition, they did not want the stress they received during the day to invade their daily lives. They emphasized that the work-life transition must be done well in order to continue this job. However, they did not know exactly their state of mind while working, and they could not take care of their mind in detail other than simply forgetting it. On the other

hand, they expressed a sense of accomplishment when they handled what customers wanted and felt good when they heard positive customer comments. From this point of view, the system should be able to capture the experiences during work and allow workers to review their state of mind.

B. Proposal of quantified mind mechanism stress management system

We plan to develop a smartphone application for call center workers to manage stress with data measured by activity tracker and self-reporting. They can use this system to identify their state of mind, and based on the results, they can self-reflect and devise their stress management strategies.

How can we measure our state of mind? When an event occurs, we experience both positive and negative emotions. Negative emotions' exhaust' our mind, but positive emotions 'recover' our mind. Since affect balance is an essential mediator of life satisfaction [5], it is necessary to investigate both positive and negative. Therefore, we plan to develop a mechanism to quantify the state of mind by collecting both positive and negative experiences.

Based on the design considerations discovered earlier, we want to collect data to minimize user input. We plan to measure the state of mind through a user's activity tracker and brief self-report. Using physiological signals such as heart-rate, activity trackers can determine a user's stress level without additional input [6]. However, it is difficult to rely on this technology alone to measure all negative experiences. We want to make up for any information or subjective data missed by activity trackers through self-reporting [7].

Self-report is particularly useful for collecting data on positive as well as negative experiences. Workers also have experienced feeling good during work and relieved stress in their way. Therefore, we capture positive experiences by asking how effectively the stress-relief techniques were performed and what experiences made them feel better at work. Eventually, we want to quantify the user's state of mind by calculating the collected data (both negative and positive).

We want users to reflect on themselves by visualizing the state of mind measured above. Then, through data visualization, they can intuitively understand and judge whether their mind is currently in a good or bad situation. We plan to design it by applying metaphors that can represent the aforementioned 'exhaustion' and 'recovery'.

We also provide users with a report analyzing the data collected during the day after work is over. They can see how their mind has changed throughout a day's work. In addition, they can check the quantified data of how stressed they were and how much they recovered through stress relief methods. This report can encourage users to set up strategies to manage stress in the future by providing the efficiency of the stress interventions they have performed.

III. CONCLUSION

In this workshop, we will discuss a system for emotional workers to manage their stress with quantified data in the workplace. To design this system, we studied the characteristics of workers and derived design considerations. The system designed through requirements provides a mechanism for workers to measure their state of mind by capturing their negative and positive experiences with minimal intervention while performing. This measured data will be visualized to the user and provides opportunities for self-reflection. In addition, it is also necessary to think about how to manage stress continuously, even when it is switched to daily life after work [8]. We hope this system can support emotional workers to improve their mental health by creating their stress management strategies.

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