

Designing a Personalized Stress Management System for Call Center Workers

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Abstract—Call center workers are often required to suppress their emotions and perform emotional labor, which can negatively impact their mental health. Current stress management methods may not be effective for all individuals, as stress is highly individualized and may require ongoing, personalized strategies. In this paper, we propose a personalized stress management system to help call center employees recognize and relieve stress. The system includes a mechanism for quantifying stress levels at work, evidence-based interventions, and a process for reflecting on stress and setting goals for maintaining mental health. We conducted a preliminary study to understand the work context of call center employees and used the findings to inform the design of the system. Finally, we discuss the potential benefits of the system and outline future work to further develop and evaluate the system.

Keywords—Mental health; mobile; stress management; coping; interventions; recommender; quantifying; goal-setting;

I. INTRODUCTION

Call center workers often suppress their emotions and express false or exaggerated emotions while interacting with customers as part of their job duties. This emotional labor can take a toll on their mental health, especially when combined with factors such as excessive workload, a competitive work environment, and a lack of autonomy[1]. In addition, the stress and emotional dissonance that come with this type of work can contribute to the development of mental health issues such as burnout and depression if not managed effectively[2].

There have been attempts to improve the work conditions of employees who perform emotional labor, such as by providing guaranteed break times, preparing a manual for responding to rude and aggressive calls, and offering annual stress-reducing workshops based on mindfulness therapy[3]. However, stress is highly individualized and can be caused and managed differently by each person. As a result, current stress management methods may not be effective for everyone. In addition, these workers are regularly exposed to negative emotions in their job so they may require more personalized, ongoing stress management strategies rather than just a single solution. Proper stress management requires a thorough understanding of stress levels and taking steps to reduce stress[4].

In this workshop paper, we propose a personalized stress management system to help workers recognize their state of mind and relieve stress. The system provides a mechanism

for quantifying stress levels at work, recommendations for evidence-based interventions, and a process for reflecting on stress after work and setting goals for maintaining mental health. To develop this system, we conducted a preliminary study to understand the work context of employees. Then we discuss what we can expect from this system.

II. SYSTEM DESIGN

In this study, we aimed to determine the key factors involved in managing the stress of workers in emotionally demanding roles and to consider these factors when designing a support system. Based on our research, we propose a system that assists call center employees in monitoring and evaluating their mental well-being while on the job. The system also provides strategies for recharging and revitalizing their mental energy after work, tailored to their values and goals.

A. Preliminary study for Design Consideration

To gain a deeper understanding of the environments and stress faced by emotional workers, we conducted field observations and focus group interviews. We first examined the physical workspace through observations of the work environment. Then we conducted approximately one-and-a-half-hour-long interviews with six individuals (three from each center) from two different call centers. These interviews allowed us to gather valuable information about the experiences and challenges of these workers. Through the interview, we gained insight into the workload and work habits of the workers, as well as strategies they use to cope with stress and the impact of stress on their daily lives. We also learned about the factors contributing to these workers' positive emotions.

First, the workers in this study often faced high volumes of work, which could lead to negative emotions and stress due to the frequent exposure to rude and aggressive customers. These workers frequently handled many daily calls, particularly on the day after a holiday or in the wake of a significant incident such as a personal data breach, which caused a sharp increase in calls. They also had very little time for breaks, as they were required to keep track of their previous call work between calls. Given these conditions, it was essential to find a way to minimize the burden on the

workers when collecting data to assess their mental state in such a fast-paced environment.

Second, the workers expressed a desire to separate their work-related stress from their personal lives and emphasized the importance of a smooth transition between work and life in order to sustain their job. However, they were uncertain about the state of their mental well-being while on the job and struggled to take care of their mental health beyond simply trying to forget about negative feelings. To address these issues, it was necessary to provide the workers with information about what aspects of their work were causing stress and with practical strategies for managing stress within the work environment.

Finally, the workers also reported that while they had a significant workload, they felt a sense of accomplishment when they were able to successfully help customers with their needs without any issues. Furthermore, positive customer feedback, such as gratitude or praise, could significantly improve their mood and be remembered throughout the day. These findings suggest that it is vital to not only monitor the workload and stress of the workers but also to track their positive experiences and achievements on the job. The proposed system will need to present this information positively, helping the workers view their work in a more positive way.

B. Proposal for a smartphone app to help call center employees manage and alleviate stress at work

We aim to create a smartphone application that helps call center employees manage and alleviate stress at work. The app helps users manage their stress by guiding them through four steps: recognizing stress, relieving stress, evaluating stress levels, and setting goals for stress management. In order to facilitate these steps, the app will provide data on the amount of stress and relief experienced by the user and display this information visually.

First, users can identify their current level of stress with the help of technology. Based on the design requirements we have identified, we need to collect user stress levels in a way that minimizes input from the user during work. One approach is to use physiological signals through an activity tracker, such as heart rate, to estimate stress levels without requiring additional input from the user[5]. However, stress is very subjective, so there are limitations to relying only on technically measured values. Then, we plan to supplement these technical limitations by allowing users to self-report their perceived stress levels through self-reporting[6]. Users can adjust their perceived stress level based on the stress estimated through the activity tracker. In addition, identifying specific stressors is a crucial aspect of stress management. Therefore, the system will allow workers to report their stress levels and classify the stressors they encounter.

Once the user is aware of the stress, the worker can take action to relieve the stress. For workers who are not familiar

with specific stress relief measures, the app recommends appropriate stress intervention measures according to the measured stress level. The system takes into account short breaks at work, leading to a simple but proven intervention based on psychotherapy. Workers immediately relieve stress by performing this intervention. It is important not only to carry out stress relief measures but also to evaluate how effective the actions were in relieving stress. Since affect balance is an essential mediator of life satisfaction[7], it is necessary to investigate both positive and negative. Therefore, the system wants to quantify the effectiveness of the intervention method using the stress level criteria previously measured. The system aims to measure the stress-relieving effect of the interventions through self-report, as the subjective nature of stress makes it difficult to measure technically. This measured effect may influence the priority of future recommendations made by the system.

Finally, the app provides users with daily reports that analyze stress data collected throughout the day. Users are able to view the amount of stress and recovery they have experienced throughout the day. If the user has experienced more stress than stress relief, the app offers the chance for them to recover after work. The app also encourages users to create their stress-relief strategies and set goals for practicing them. For users who feel overwhelmed by stress, the app also includes a counseling chat system with professional counselors to help manage stress more effectively.

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, this app also includes personal goal setting to help users maintain low-stress levels as they transition from work to daily life[8]. By using the app, we expect to be able to gather data on the stress levels and relief patterns of call center workers, identify the most effective intervention methods based on stress levels, and measure the effectiveness of individual stress management strategies.

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