

An empirical study of factors that contribute to the emotional and physical well-being of call centre agents

Authors:

Noleen Miller¹
Rozenda Hendrickse¹

Affiliations:

¹Wellness Sciences
Department, Cape Peninsula
University of Technology,
South Africa

Correspondence to:

Noleen Miller

Email:

millern@cput.ac.za

Postal address:

PO Box 652, Cape Town 8000,
South Africa

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Call centre work has been associated with involving high workload, being under performance monitoring, having low autonomy, doing repetitive tasks and requiring a minimal level of skills, and the work is also being performed in an open-plan work environment. The aim of the study was to determine whether certain factors within the work environment of call centres play a role on the emotional and physical well-being of call centre agents. The study also aimed to investigate whether there was a significant relationship between these factors and well-being. The study employed a quantitative research paradigm, and data were gathered by means of a structured questionnaire administered to a sample of call centre agents ($n = 275$) from four companies located in the Cape Metropole, South Africa. The main findings showed that factors in the work environment, such as a lack of skills variety, low autonomy, task identity, lack of social support, job demand, performance monitoring, temperature and air quality as well as workstation layout, contribute negatively to emotional (burnout and stress) and physical (optical and auditory health problems) well-being. The findings yielded statistically significant relations between these factors and emotional and physical well-being. One of the recommendations of the study is that call centre organisations should have supportive human resource policies in place that offer training and development, present promotion opportunities and promote supervisor support.

Introduction

A call centre has a work environment in which the main business is mediated by computer- and telephone-based technologies that enable an efficient distribution of incoming or outgoing calls to available employees (Holman *et al.* 2005). Call centres are important constituents of services that organisations offer to customers by means of solving problems, resolving complaints and providing information (Lywood, Stone & Ekinci 2009). The call centre industry in South Africa has grown, and with the high unemployment rate in the country, this industry offers a means of creating jobs, and foreign investment is also stimulated (Banks & Roodt 2011). The call centre industry provides inexperienced graduates and matriculants employment opportunities, as no formal qualification and skills are needed because training is provided by the organisation (Benner, Lewis & Omar 2007). Against the preceding background it is evident that call centres are cost-effective for organisations to deliver a service to customers. However, this industry is characterised by factors such as low autonomy, lack of task variety, high levels of performance monitoring and high job demands that contribute to stress and negative well-being (Holman *et al.* 2005). Because of the demands of call centre work, this type of work is often associated with burnout, stress and other health-related problems, which are most likely caused by various factors within the work environment of call centres. The core objective of the study was to investigate factors, which may trigger certain emotional and physical well-being problems in the workplace, in order to propose measures to the call centre management to help improve the work environment in call centres in general.

Literature review

A range of factors that have an impact on the physical and emotional well-being of call centre agents have been identified by a number of researchers. The factors include, for example, skills variety, autonomy, task identity, social support, job demand, performance monitoring, temperature and air quality and workstation layout. Each of these factors will be explained in brief in this article. Skills variety refers to the extent to which a variety of skills and abilities are required to perform a job and make it challenging (Malhotra, Budhwar & Prowse 2007). Call centre work needs a limited skills variety and complexity, and it is found that these low levels of skills are associated with low levels of affective commitment (Aksin, Armony & Mehrotra 2007). When it comes to autonomy, call centre agents have a limited autonomy over their work tasks and working environment; they cannot use their discretion over the methods they use, how tasks

are completed and the time allocation of their work (Comcare 2006). Because of the lack of task variety, the work tends to be monotonous and repetitive. It was found that when there is no variety in tasks and when repetition occurs, employees more likely experience low levels of cognitive arousal, which results in disengagement from the job (Warr 2007). The job demands placed on call centre agents in terms of customer service delivery, which is associated with high levels of stress, may take a toll on these agents (Holman 2003; Pillay, Butendach & Kanengoni 2014). Dean and Rainnie (2008) found that efficiency demands of call centre work are linked to performance in terms of time pressures associated with workload. Performance monitoring focuses on the number of calls handled during the work hours, which provides data on the number of calls waiting, the proportion of calls answered, the average call duration and the customer waiting time (Banks & Roodt 2011). According to Visser and Rothmann (2008), performance monitoring is viewed as a job demand and is associated with negative employee well-being.

Workplace social support, on the other hand, focuses on the impact of support received from supervisors or team leaders and colleagues in the form of problem solving, sharing information, reappraising situations and obtaining advice (Brough & Frame 2004). Supervisor support can either be a source of support or strain for call centre agents (Cappelli 2008). Lack of social support in the workplace is strongly linked to burnout (Maslach, Schaufeli & Leiter 2001). The temperature in a call centre, whether hot or cold, will affect the efficiency and quality of work. According to Seppänen, Fisk and Lei (2006), the indoor temperature affects several human responses, including thermal comfort, perceived air quality, sick building syndrome and work performance. If call centres are humid then it has a direct effect on the health of a call centre employee and his/her work performance (Nor Ruslan *et al.* 2014). When it comes to workstations and its ergonomic construction, high workstation panels are related to physical and visual discomfort if they are not adjustable (Comcare 2006). Employees should be able to adjust to the interior of their workstation features, giving them more space to arrange furniture and equipment, which in turn decreases stress and overall discomfort (Knoll 2010).

Research design and methodology

In terms of achieving the core objective of the study, a quantitative research method was used. Quantitative researchers asserted that research must be limited to what we can observe and measure objectively (Welman, Kruger & Mitchell 2006:6). This approach proved apt for a study of this nature.

Four call centres participated in the study with a combined target population of 760. Roasoft® Incorporated calculation tool suggested a sample of 200 participants. Whilst the aforesaid sample size was adequate for the study, overall, responses from 275 call centre agents were recorded. Most of the call centre agents who participated in the study were females (61.8%). Male participants thus constituted only

38.2%, and the age of the call centre agents ranged from 21 to 65 and older, which are limitations of the study. As mentioned, the combined population size of the four call centres who participated in the study was 760. Out of this population, only 275 respondents participated in the study. The results can thus not be generalised to all call centres in the Cape Metropole but is confined to the case study centres only. A structured questionnaire, developed by using existing measuring instruments used in previous research studies, was administered in the study. The demographic section comprised of basic information pertaining to gender, race, age, industry, years of employment, shifts and working hours, smoking habits and exercise.

Job characteristics were measured by using the job dimensions ($\alpha = 0.73$) and the critical psychological state ($\alpha = 0.73$) sections of the Job Diagnostic Scale developed by Hackman and Oldham in 1975. Social support was measured by using a 5-point scale based on the instrument developed by Caplan, Cobb, French, Van Harrison and Pinneau in 1975 (Fields 2002). The reliability of the scale was 0.82. Job demands were measured by using a 5-point scale ($\alpha = 0.82$) developed by Karasek in 1979 (Fields 2002). Performance monitoring was measured by using a 5-point scale ($\alpha = 0.71$) developed by Sprigg, Smith and Jackson (2003). The physical work environment was measured by using a 5-point scale ($\alpha = 0.93$) developed by Sprigg *et al.* (2003). Burnout was measured by using a 5-point Oldenburg Burnout Inventory ($\alpha = 0.87$) developed by Demerouti and Bakker (2007). Vocal health ($\alpha = 0.87$), optical health ($\alpha = 0.90$) and auditory health ($\alpha = 0.81$) were measured by using a 5-point scale developed by Sprigg *et al.* (2003). Job stress was measured by using the 5-point NIOSH Generic Job Stress Scale ($\alpha = 0.93$). The SurveyMonkey software tool was used to compile and complete the structured questionnaire. Data were interpreted by using the Statistical Package for Social Sciences (SPSS). For the purpose of the study, the analysis of variance (ANOVA) technique was used to test the relationships between variables and determine the factors that contribute negatively to emotional and physical well-being of call centre agents in the work environment (National Institute for Occupational Safety and Health, 1988).

Results

ANOVA analysis

The results from the ANOVA analysis presented in Tables 1 and 2 illustrate the factors in the work environment that are linked to exhaustion and disengagement. The results from the ANOVA analysis presented in Table 3 illustrate the factors in the work environment that are linked to physical health problems. The results showed that there is a statistical relationship between skills variety and exhaustion, $F(1,196) = 6.119$, $p = 0.014$, skills variety and disengagement, $F(1,196) = 41.150$, $p = 0.000$, and skills variety and optical health, $F(1,187) = 4.541$, $p = 0.034$. There is a statistical relationship between autonomy and disengagement, $F(1,196) = 4.256$, $p = 0.040$. There is a statistically significant relationship between task variety and anxiety, $F(1,187) = 4.092$, $p = 0.045$. There is a statistically

TABLE 1: ANOVA results for exhaustion.

Source	df	F	Sig.
Skills variety	1	6.118	0.014
Job feedback	1	1.904	0.169
Task variety and identity	1	0.251	0.617
Autonomy	1	3.094	0.080
Supervisory support	1	7.030	0.009
Job demands	1	32.827	0.000
Performance monitoring	1	4.472	0.036
Workstation	1	0.224	0.636
Temperature and air quality	1	0.421	0.517

Source: Statistical Consultant, CPUT, 2013

TABLE 2: ANOVA results for disengagement.

Source	df	F	Sig.
Skills variety	1	41.150	0.000
Task variety and identity	1	0.168	0.683
Autonomy	1	4.256	0.040
Supervisory support	1	2.529	0.113
Job demands	1	0.884	0.348
Performance monitoring	1	2.335	0.128
Workstation	1	1.673	0.197
Temperature and air quality	1	5.166	0.024

Source: Statistical Consultant, CPUT, 2013

TABLE 3: ANOVA for physical well-being.

Source	Dependent variable	df	F	Sig.
Skills variety	Optical health	1	4.541	0.034
Task identity	Anxiety	1	4.092	0.045
Supervisory support	Optical health	1	5.760	0.017
Job demands	Vocal health	1	5.986	0.015
	Optical health	1	7.828	0.006
	Auditory health	1	5.455	0.021
	Physical and behavioural stress symptoms	1	4.280	0.040
Performance monitoring	Auditory health	1	12.093	0.001
Workstation layout	Auditory health	1	11.014	0.001

Source: Statistical Consultant, CPUT, 2013

significant relationship between supervisory support and exhaustion, $F(1.196) = 7.030$, $p = 0.0009$, and supervisory support and optical health, $F(1.187) = 5.760$, $p = 0.017$. There is a statistically significant relationship between job demands and exhaustion, $F(1.196) = 32.827$, $p = 0.000$, job demands and vocal health, $F(1.187) = 5.986$, $p = 0.015$, job demands and optical health, $F(1.187) = 7.828$, $p = 0.006$, job demands and auditory health, $F(1.187) = 5.455$, $p = 0.021$, and job demands and physical and behavioural stress symptoms, $F(1.187) = 4.280$, $p = 0.040$. There is a statistically significant relationship between performance monitoring and exhaustion, $F(1.196) = 4.472$, $p = 0.036$, and performance monitoring and auditory health, $F(1.187) = 12.093$, $p = 0.001$. There is a statistically significant relationship between temperature and air quality and disengagement, $F(1.196) = 5.166$, $p = 0.024$. There is a statistically significant relationship between workstation and auditory health, $F(1.187) = 11.014$, $p = 0.001$.

Discussion

The core objective of the study was to explore which factors in the work environment contribute negatively to emotional

and physical well-being. The study showed that the lack of skills variety was a factor that contributed to burnout and optical health problems. The study agrees with Visser and Rothmann (2008) that low levels of skills variety are positively linked to burnout. It also concurs with Sprigg *et al.*'s (2003) study that the lack of knowledge and training on how to adjust computer display screen can lead to optical health problems. Call centre agents with insufficient skills and training of computer systems and new product knowledge can experience low morale and burnout when dealing with demanding customers. Because call centre agents stare into the computer screen intensively, not knowing how to adjust the contrast and brightness of the screen can lead to optical health problems.

It was shown that the lack of autonomy contributes to disengagement. Feelings of not being listened to, not being able to give inputs on decisions (Priebe *et al.* 2005) and not conducting work on one's own terms (Vekkaila, Pyhältö & Lonka 2014) can lead to disengagement. Call centre agents who experience a lack of autonomy will feel less committed to complete their tasks and cannot use their own discretion on how to handle customer queries, resulting in them being disengaged from the work tasks. Task identity, on the other hand, is linked to anxiety. According to Lin and Hsieh (2002), a mismatch between task identity and employees' abilities occurs when task identity requires employees to elevate their abilities. In some call centres, task identity allows the employee to complete a task from beginning to end without sending it to the back office. However, if the agent is stressed by the task or by the demands of the customer along with reaching performance targets in an allocated time, this can lead to anxiety. Lack of social support (supervisory) contributes to exhaustion and optical health problems. Having supervisors who do not support or care about employees and who create an unpleasant work environment for employees is associated with emotional burnout (Lambert *et al.* 2012). Call centre agents should be encouraged by their supervisors to take regular breaks, away from computer screens, to prevent the risk of visual disorders (Sprigg *et al.* 2003). The role of the supervisors in call centres should not just be to monitor the performance of call centre agents, but they should be able to coach, motivate and support employees to develop and reach their full potential.

The study found that high job demands are associated with exhaustion, vocal and auditory health problems, and physical and behavioural stress symptoms. The study agrees with Toomingas *et al.*'s (2005) study that call centre work is demanding on the hearing of call centre agents, as a large proportion of the work consists of listening to customers on the telephone. Wearing headsets is a requirement of call centre work, and often sharp noises, known as acoustic shock, penetrate through the headsets causing uncomfortable pain in the ear. Call centre agents rely on their voices to carry out their work and are at the risk of vocal disorders because of work-related excessive oral communication (Vilkman 2004). Because of the vocal demands of call centre work, agents

are forced to handle a high call volume, which results in excessive talking. This excessive handling of calls coupled with the background noise results in raising their voices so that customers can hear them, and also poor air quality, which causes dryness in the throat, can lead to vocal strain. The demands of performance targets can cause call centre agents to feel pressurised and stressed (Taylor *et al.* 2003). Call centre work is performance-based, which is linked to monetary value, and because of this fact, call centre agents stress about achieving the performance targets, delivering an efficient service and meeting the demands of customers.

The results suggest that performance monitoring is linked to exhaustion and auditory health problems. The finding is consistent with Castanheira and Chambel's (2010) study that performance monitoring is associated with exhaustion and the negative effects of these monitoring systems occur because of the fact that their job demands are high and they have low autonomy. In call centres, performance monitoring is associated with financial rewards and an agent's appraisal is often based on his/her performance rating. Owing to the financial factor, agents feel that they have no control and involvement in deciding over how much their payment increase will be or whether they will in fact get an increase, as this is decided by their performance ratings. Therefore, they need to achieve those high targets by taking an excessive number of calls, which ultimately gives them ear problems as they constantly wear their headsets.

Temperature and air quality are linked to disengagement. Office temperatures that are too hot or too cold as well as poor air quality can lead to a decrease in productivity (Pitzer 2006). Call centre agents have no control over the temperature in the office as the air-conditioning system is centralised. The open-plan office layout of the call centre working environment is often over populated with call centre agents occupying the space, which results in an increase in heat and poor quality of air. The uncomfortable temperature and poor air quality can lead to a decrease in productivity, as employees feel disengaged and lethargic. Workstation layout is linked to auditory health problems. The open-plan office environment in call centres are filled with significant background noise. When the background noise is high, call centre agents need to turn up the volume of their headsets, increasing the risk of exposure to acoustic shock (Westcott 2006). The workstations in the call centre environment are in close proximity to each other without any sound-absorbing partitioning between them. Along with the overcrowding in the office layout, agents talking simultaneously can lead to excessive noise levels, which makes it difficult for the call centre agent to hear the customer at the other end of the line and to concentrate on the call, resulting in the headset volume being turned up.

Recommendations

Training on new products should be provided on a regular basis, enabling call centre agents to acquire new skills. Call centre organisations should have supportive human

resources policies in place which offer training and development, present promotion opportunities and promote supervisor support. Call centre management should reconsider the work design (low task variety, low autonomy, performance targets and performance monitoring) of the call centre environment by allowing call centre agents more autonomy when it comes to the task at hand. In this way, they will cope with the job demands, and burnout and stress will be alleviated. Call centre agents should be allowed to give inputs on the work design, performance targets and monitoring as they know the systems better and can give valuable inputs on what works well and what should be changed. This feedback should be reviewed and implemented where needed, which will give call centre agents a sense of meaningfulness and will also increase work commitment. Performance targets should be based on quality service and not the amount of calls that can be taken. This will in turn eliminate high job demands. Performance monitoring should be used as a developmental tool, whereby call centre agents can expand on their skills, and should not be used to evaluate financial incentives. Workstations should have sound absorption panels which block out background noise, and this will ensure that the customer will be heard without the call centre agents adjusting the volume on their headsets. Training should be provided on how to adjust the screen controls and brightness on monitors, display screen equipment (DSE) and visual screen units (VSE). Regular short breaks should be taken to allow the agents some reprieve from continuously staring at computer screens. Air and temperature control should be at a comfortable level for all employees, and workstations should not be situated directly under the air-conditioning vents.

Conclusion

Call centre agents are important people within the customer service industry. For this industry to be viable and profitable, the management should see call centre agents as an asset. Therefore, it is important for organisations to change their work design, change aspects of the physical work environment and implement human resource policies that will alleviate the pressure that these agents experience. Implementing these measures will promote positive emotional and physical well-being.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

N.M. (Cape Peninsula University of Technology) is the core author of this article and R.H. (Cape Peninsula University of Technology) contributed by means of having proofread and implementing minor edits.

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