

Onsite versus remote working: the impact on satisfaction, productivity, and performance of medical call center workers

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Research Article

Keywords: Medical call center, Job satisfaction, Performance, Saudi Arabia

Posted Date: June 29th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-668192/v1>

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Version of Record: A version of this preprint was published at INQUIRY: The Journal of Health Care Organization, Provision, and Financing on January 1st, 2021. See the published version at <https://doi.org/10.1177/00469580211056041>.

Abstract

Background

Job satisfaction is determined as the measure to know the individuals' feelings toward their work. The working conditions that can affect the call center agents' satisfaction, and performance have received particular concern.

Methods

This study included 124 agents working in a governmental medical call center in Saudi Arabia. Each agent was receiving a questionnaire that investigates their satisfaction, productivity and performance during working in the medical call center.

Results

Seventy-seven physicians working onsite were compared to 47 physicians working in the medical call center remotely. Onsite agents were more satisfied concerning job nature, supervisor support, productivity and performance compared to remote agents. Overall, general satisfaction was more seen in physicians working onsite as opposed to remote workers in the medical call center in Saudi Arabia (64.90% vs. 54.25%, [p-value < 0.01]).

Conclusion

It was found that onsite agents were significantly more satisfied in most investigated aspects compared with remote agents.

Introduction

Job satisfaction is determined as the measure to know the individuals' feelings toward their work, either positive or negative [1]. The response of each worker toward his job and workplace environment is important for the organization to improve and supply more positive energy to enhance agents' performance [2]. It could be measured as a generalized passion about the job, or as a pattern of attitudes and behaviors about several aspects of the job. Job satisfaction relies on various factors, and agents may be satisfied with one or several aspects of their career, however, they could be unsatisfied with other aspects. Based on Herzberg's theory, job satisfaction and dissatisfaction are two unrelated concepts and not two opposite ends of the same spectrum. As per this theory, when working atmospheres (factors of hygiene) are not strong, the worker is displeased, however, when these factors are strong or being better, it means the employee is not unsatisfied, but also not always satisfied. [3]

Satisfaction during work can affect the attitude of employees which influences organizational operations [4]. In general, humans have 3 sets of basic needs: relatedness, existence, and growth [5]. Satisfaction at work could be determined as an indicator of physical and psychological health. It is also associated oppositely with frequent absence, delay, turnover idea, and stress [6].

The quality of services provided by any organization is related to the motivation and satisfaction of the employees that provide healthcare services to the community. Based on the World Health Organization (WHO), there is a worldwide issue concerning the shortage of human resources in healthcare services [3]. Less satisfaction during work has been concerned to be a significant predictor of intention to leave the work and move healthcare workers away from their job nature [7, 8]. Directors who hold the substantial factors affecting the satisfaction of workers are more probably gain enhanced performance.

Call centers have increased rapidly in the last decades and attracted considerable attention from different fields and organizations including medical fields [9, 10]. The working conditions that can affect the call center agents' satisfaction and performance have received particular concern, owing to their effect on organizational success in terms of profit, customer satisfaction, and lower costs [10, 11, 12]. During the previous years, call center management has become more concerned about staff dispensation and less about the old fashion production-line orientation [13].

Studies in the last years revealed that call center workers often suffer from burnout and stress [14, 15]. It was well known that in this type of work there are potent needs to reduce negative emotions, caused by aggressive and unwanted customers, in addition to repetitive job activities, monitoring performance, increased time pressure, and workload. [16, 17, 18, 19].

During the COVID-19 pandemic in 2020 and 2021, it was difficult for many workers including call center agents to work regularly in their working site due to mandatory quarantine restrictions and physical distancing. Because of that, the medical call center applied by the Ministry of Health in Saudi Arabia allowed their physicians to work remotely at home and using a specific online system to deal with patients seeking telemedicine services. It was not common to see call centers' agents work remotely, and agents were usually required to work in the call center sites in order to ensure acceptable performance and well monitoring. However, new technologies allow agents working in call centers to answer the calls out of the work area; which may enhance satisfaction and productivity. On the other hand, remote working could affect the job monitoring of agents. Until now there are no well studies done about remote working advantages, disadvantages, performance, and satisfaction.

The present study intended to investigate the role of remote call center working on agents' satisfaction, productivity, and performance compared to onsite workers. In addition, the study will reveal the patients' satisfaction in the previous years in order to reflect the quality of the health services provided by the physicians working in the medical call center.

Research Design And Methods

Study design and setting

A cross-section study was conducted between December 2020 and April 2021 that include 124 agents working in a governmental medical call center in Saudi Arabia. Each agent was receiving a questionnaire that investigates their satisfaction about the job nature, supervisor support, job autonomy, job productivity, and performance during working in the medical call center. The agents were divided into two groups: remote workers and onsite workers. Besides, the included agents also divided into full-time workers and part-time workers. These groups were compared for agents' satisfaction.

This study included only physicians working in the medical call center, and excluded pharmacists, dentists, psychiatrists, and nutritionists.

The questionnaire

The questionnaire contained six sections, the first and last sections were including physicians' demographics and comments. The other sections (sections 2 to 5) were involving questions with 1-5 rating scales concerned on four satisfaction aspects, including job nature, supervisor support, and job productivity & performance, in which 1 indicates very unsatisfied, and 5 indicates that the physician was very satisfied.

Statistical analysis

For the analysis of the results, Welch's unpaired T-test, chi-square test, and Mann-Whitney U test were used. The data saved, organized, and graphed by using Microsoft excel 2016 program.

Ethical consideration

Informed consent was taken from each physician after explaining the objectives and summary of the study. All the information taken was kept confidential and was not used for other purposes than this study. Those who refused to participate in the study were excluded.

Results

One hundred and twenty-four (144) physicians working in the governmental medical call center were included in the study. Onsite and part-time agents were the majority of the participants that agreed to answer the questionnaire, in which 77 out of 124 physicians were onsite agents, and 66 out of 124 physicians were working as part-time. The mean age of the physicians included was 43.17 ± 8.4 years, and most of them were male (> 70%), married (> 85%), and family medicine specialists (> 50%). The mean

years of experience in the medical field of the physicians included was 16.87 ± 8.07 years, and the mean years of experience in the medical call center was 1.44 ± 0.97 years. Detailed baseline characteristics of the included physicians are shown in table.1 and table.2.

Seventy-seven (77) physicians working onsite were compared to 47 physicians working in the medical call center remotely about their satisfaction regarding job nature, supervisor support, job autonomy, job productivity, and performance. Onsite agents were more satisfied concerning job nature, supervisor support, productivity and performance compared to remote agents (70.82% vs. 53.47%, [p-value < 0.01], 63.38% vs. 55.05%, [p-value < 0.01], and 66.51% vs. 56.03%, [p-value < 0.01] respectively). However, onsite agents were less satisfied regarding job autonomy than remote physicians (46.81% vs. 53.19%, [p-value = 0.128]). Overall, the general satisfaction was more seen in physicians working onsite as opposed to remote workers in the medical call center in Saudi Arabia (64.90% vs. 54.25%, [p-value < 0.01]) (see table.3).

On the other hand, 58 full-time agents were compared with 66 part-time agents concerning the mentioned satisfaction aspects. The results showed that part-time physicians were more satisfied than full-time physicians in all aspects, including job nature, supervisor support, job autonomy, job productivity and performance (64.73% vs. 63.56%, [p-value = 0.6], 62.61% vs. 57.42%, [p-value = 0.096], 56.28% vs. 41.36%, [p-value < 0.01], and 67.27% vs. 57.18%, [p-value < 0.01] respectively). The general satisfaction was significantly higher in part-time compared to full-time agents working in the medical call center in Saudi Arabia (63.45% vs. 57.79%, [p-value < 0.01]) (see table.4).

When including all agents (N = 124), the percentage of their satisfaction regarding job nature, supervisor support, job autonomy, job productivity, and performance were 64.18%, 60.2%, 49.32%, and 62.48%, respectively. The percentage of general satisfaction among all included physicians was 60.81%.

Discussion

The call centers are widely available in both developed and developing countries [20]. Each call center has a specific scope that provides certain services. Various services could be provided by call centers including solve issues, book appointments, market items, and care of people [21]. Medical call centers provide medical information and assistant to people to decrease hospital visits and to help in dealing with patients' various existing illnesses [22]. Usually, agents working in medical call centers mainly consist of physicians, psychiatrists, pharmacists, or nurses [23].

In general, the satisfaction rates among agents working in call centers were not very high and could depend on several factors that may include the job nature, workload, work management, type of customers, and even the marital and educational status of the workers [24]. In Europe, two previous studies showed that the mean satisfaction percentage of agents working in the call center was not more than 66%, which indicates moderate satisfaction [25, 26]. There were no or few studies published concerning the satisfaction of physicians that work in the medical call center, however, the mean

satisfaction percentage of doctors working in European hospitals was 65%, which almost has the same satisfaction status of call center's agents [27].

In this study, the researchers investigated the satisfaction of physicians working in a medical call center established by the Saudi Ministry of Health. During the study, the satisfaction was examined from different sides, including job nature, supervisor support, job autonomy, job productivity, and performance sides. The main endpoint of this study was to compare these satisfaction aspects between onsite and remotely working physicians, which this endpoint was something special for the study. The results of this study reveal that onsite workers were significantly more satisfied in most of the investigated aspects compared to those who worked at home (remotely). The remote agents were more satisfied regarding job autonomy satisfaction, however, there was no significant difference between these two groups. Moreover, the study also showed that part-time workers in the medical call center were more satisfied in all inquired aspects compared to full-time working physicians, but the study found a significant difference between the two groups in two aspects, including satisfaction about job autonomy, and productivity & performance.

The possible explanation of these results includes the more availability of expert and older physicians in the onsite and part-time groups, which showed more satisfaction during working in the medical call center. The other expected reasons were evoked from the physicians' comments. Most unsatisfied onsite physicians were mainly complaining of high workload, poor facilities in the work area, and few training hours. On the other hand, unsatisfied physicians that work remotely were complaining of delay in salary, high workload, and poor work facilities. It was obvious that most unsatisfied physicians were working as part-time at home. Most physicians that were working as full-time at work area unsatisfied because they felt very low self-determination during their work in the medical call center.

For the estimation of the physicians' medical managements quality provided, the mean of daily satisfaction rates of patients and daily medical consultations were determined for the previous years. The mean daily satisfaction rate was more than 96% and the mean number of medical consultations was not exceeding 7100 in 2018 and 2019. However, the mean satisfaction rate was 91.2% and the mean number of medical consultations was 19,142 in 2020 (see figure.1 and figure.2). The researchers found no significant difference between 2018, 2019 and 2020 years regarding the mean rate of satisfaction toward medical consultations. These data showed that the quality of medical services provided did not deviated significantly despite the huge increase of the daily medical consultation received by the medical call center.

Limitations

The cross-sectional design and the use of data derived from self-reported questionnaire were the main limitations of this study.

Conclusion

The percentage of satisfaction among all physicians working in medical call center regarding satisfaction regarding job nature, supervisor support, job productivity, performance, and general satisfaction aspects were high to some extent (> 60%). When comparing onsite physicians and remotely working physicians, it was found that onsite agents were significantly more satisfied in most investigated aspects. Besides, part-time agents were feeling more satisfied than full-time agents in many aspects, and the difference between them was significant.

Declarations

Conflict of interest

The authors have no conflict of interest.

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Tables

Table.1. Baseline characteristics of onsite and remote agents working in the medical call center.

ables	All agents (N=124)	Onsite agents (N=77)	Remote agents (N=47)	p- value
1 age (in years)	43.169	43.412	42.787	0.691
gender (%)	70.16	76.62	59.57	0.044
ied (%)	86.88	86.66	87.23	0.971
1 years of experience edicine	16.869	17.373	16.064	0.393
1 years of experience emedicine	1.437	1.931	0.638	0.0001
ing Shift(s) (%)	Morning shift: 14.75 Evening shift: 53.27 Night shift: 9.83 Morning-evening shifts: 6.55 Evening-night shifts: 13.11 All shifts: 2.45	Morning shift: 13.33 Evening shift: 54.66 Night shift: 10.66 Morning- evening shifts: 8 Evening-night shifts: 9.33 All shifts: 4	Morning shift: 19.51 Evening shift: 58.53 Night shift: 0 Morning- evening shifts: 0 Evening-night shifts: 21.95 All shifts: 0	> 0.05
cal specialty (%)	General medicine: 24.78	General medicine: 17.14	General medicine: 37.77	< 0.05

	Family medicine: 53.84 Internal medicine: 13.67 Other: 7.69	Family medicine: 60 Internal medicine: 18.57 Other: 4.28	Family medicine: 46.66 Internal medicine: 6.66 Other: 8.88	
of work in medical center (%)	Full-time: 46.77 Part-time: 53.22	Full-time:64.93 Part-time:35.06	Full-time: 17.02 Part-time: 82.97	< 0.05

Table.2. Baseline characteristics of full-time and part-time agents working in the medical call center.

Variables	Full-time agents (N=58)	Part-time agents (N=66)	p-value
Mean age (in years)	41.34	44.73	0.022
Female gender (%)	75.86	65.15	0.193
Married (%)	82.75	86.36	0.578
Mean years of experience in Primary care	15.51	18.06	0.074
Mean years of experience in Specialty medicine	1.91	1.03	0.0001
Working Shift(s) (%)	Morning shift: 22.41 Evening shift: 46.55 Night shift: 3.44 Morning-evening shifts: 13.79 Evening-night shifts: 5.17 All shifts: 5.17	Morning shift: 7.57 Evening shift: 57.57 Night shift: 15.15 Morning-evening shifts: 0 Evening-night shifts: 19.69 All shifts: 0	< 0.05
Medical specialty (%)	General medicine: 8.62 Family medicine: 58.62 Internal medicine: 20.68 Other: 1.72	General medicine: 36.36 Family medicine: 43.93	< 0.05

		Internal medicine: 6.06 Other: 10.61	
Level of work in medical call center (%)	Onsite: 86.20 Remote: 13.79	Onsite: 40.90 Remote: 59.09	0.0001

Table.3. Satisfaction of all agents, onsite agents and remote agents working in the medical call center about different aspects.

Agents' Satisfaction variable	All agents (N=124)	Onsite agents (N=77)	Remote agents (N=47)	p-value
Satisfaction about job nature (%)	64.18	70.82	53.47	0.0001
Satisfaction about supervisor support (%)	60.20	63.38	55.05	0.009
Satisfaction about job autonomy (%)	49.32	46.81	53.19	0.128
Satisfaction about productivity and performance (%)	62.48	66.51	56.03	0.004
General satisfaction (%)	60.81	64.90	54.25	0.0001

Table.4. Satisfaction of full-time agents and part-time agents working in the medical call center about different aspects.

Agents' Satisfaction variable	Full-time agents (N=58)	Part-time agents (N=66)	p-value
Satisfaction about job nature (%)	63.56	64.73	0.60
Satisfaction about supervisor support (%)	57.42	62.61	0.096
Satisfaction about job autonomy (%)	41.36	56.28	0.0002
Satisfaction about productivity and performance (%)	57.18	67.27	0.004
General satisfaction (%)	57.79	63.45	0.0001

Figures

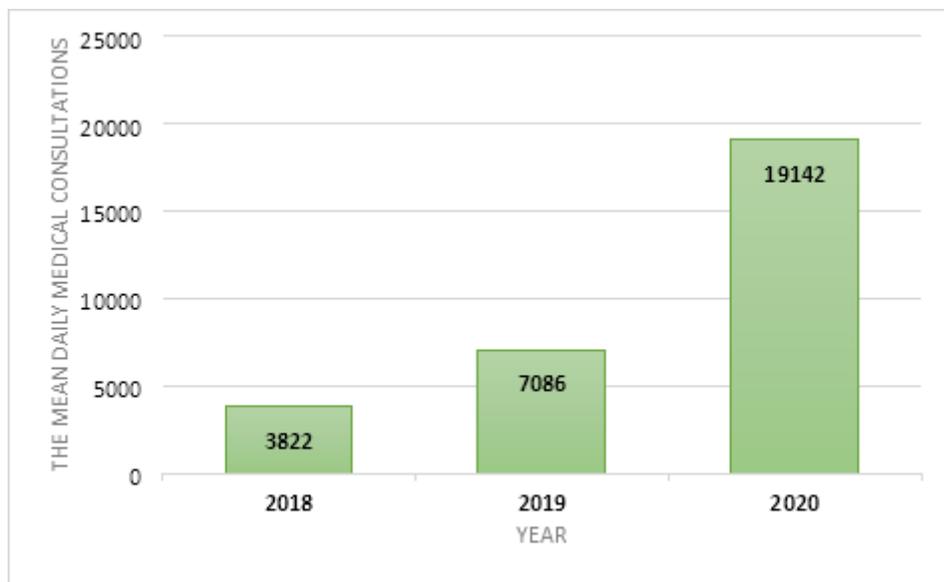


Figure 1

The mean daily Medical Consultations in 2018, 2019 and Mid-2020.

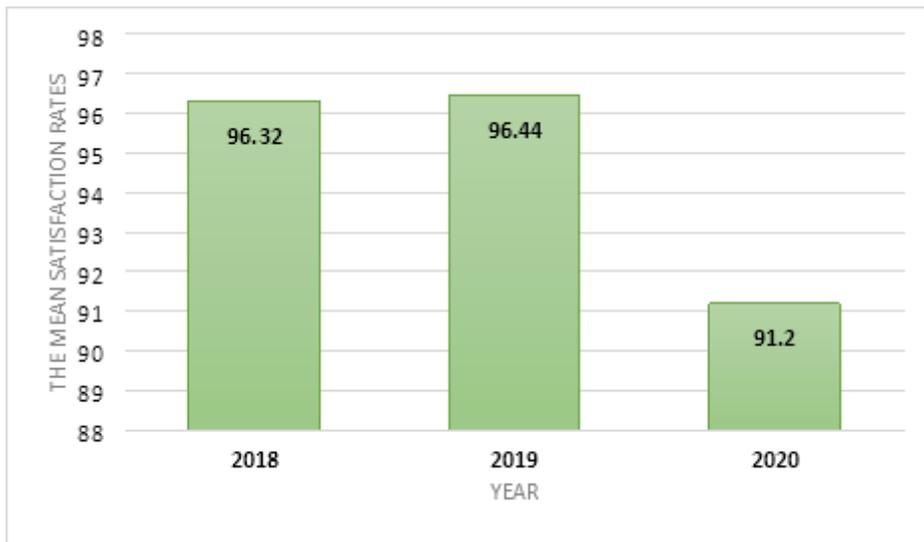


Figure 2

Mean Daily Satisfaction Rates Toward Medical Consultations in 2018, 2019 and Mid-2020.