

Employee performance in Jeddah national hospital in light of visual management

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ABSTRACT

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The aim of this study was to explore the degree of employee performance in light of visual management in Jeddah National Hospital and to identify if there were any statistical differences among respondents' estimations of their performance in terms of their work experience and training. The population of the study consisted of 820 employees, from which a sample, comprised 350 randomly chosen employees. Data were collected using a valid and reliable questionnaire and analyzed using IBM SPSS. The results underlined that the total degree of employee performance considering visual management was moderate. Particularly, employee performance on all dimensions; rules and regulations of visual management, as well as change, improvement and innovation, and work continuous follow-up, were moderate. Further, the results highlighted statistically significant differences between respondents due to work experience in favor of employees who have 15 years of experience or more and those who have 10 to less than 15 years of experience in favor of the former group. Additional differences were detected between employees with 10 to less than 15 years and those with less than 5 years of experience in favor of the group with 10 to less than 15 years. On the other hand, there were no statistically significant differences between respondents due to training courses.

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1. Introduction

Organizations in general are required to respond quickly and consciously to instantaneous scientific and technological advancements as these organizations are open systems affect and affected by changes in their surrounding environment. Health service organizations are no exception. Expressly, a key aspect of service organizations' response, according to Akili (2015), is via reform and development of organizational tools and mechanisms in which organizations are trust to cope with new responsibilities imposed by state-of-the-art technologies in communications as well as knowledge-based evolutions. Healthcare services had been deemed as a life-and-death artery of the social service that countries keen to deliver and finance in order to preserve the ever-indispensable pillar of development, which is the human capital. Pointedly, medical professions have a high-priority role for the success of care processes in healthcare firms due to their significant effects on the provided healthcare services. These medical professions have been described as tremendously stressful compared to other professions (Shen et al., 2005), where workers gain experience in their daily practices on numerous cases of infected or injured people, workload, long working hours, evening shifts, competition with peers and doctors in light of low level of information sharing (Milutinovic et al., 2012; Steenkamp et al., 2017), in addition to emotional conflict with patients and their families, which increase stress (Tabak & Korpak, 2007). On the basis of the developments in the psychological, social and administrative sciences during the last century, which had a significant effect on the administrative thought and the emergence of modern administrative schools aimed at improving the productivity of individuals to improve their performance, visual management has been introduced as a logical response to these developments (Barhamin, 2013). It is one of the most distinguished

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models of modern management practices produced by the enormous progressive movement in management in the world. This model is a result of the Japanese experience, which focuses on improving the organizational performance. The application of visual management in service organizations contributes to improving employee performance, meeting the need for a management style such as visual management and helps the organization survive and excel in terms of performance efficiently and effectively.

A general view of recent studies carried out on healthcare service organizations in the Kingdom of Saudi Arabia showed that researchers addressed concepts in these organizations such as lean methodology (Hassanain et al., 2017), self-management (Sabbah & Al-Shehri, 2014), organizational change (Nafei, 2014), nurses' job satisfaction (Al-Ahmadi, 2002; Alshmemri et al., 2016), cultural intelligence (Nafei, 2013), total quality management (Alaraki, 2014), employee empowerment (Sweis et al., 2013), quality of healthcare services (Algahtani et al., 2017), hospitals performance (Ahmad et al., 2013), employees work-life balance (Azeem & Altalhi, 2015), patient safety climate (Walston et al., 2010), sources of work stress among hospital staff (Al-Omar, 2003), burnout among healthcare providers (Bany-Hamdan et al., 2019), patient satisfaction (Ahmad et al., 2016), job design (Al-Maabadi et al., 2018), and employee motivation and job satisfaction in hospitals (Slimane, 2017). These are just examples of many works conducted on healthcare organizations in the Saudi Arabia. However, the researcher found no studies on employee performance considering visual management in healthcare service organization took place in this country. In order to explore the degree of employee performance in view of visual management in Jeddah National Hospital in terms of rules and regulations of visual management, as well as change, improvement and innovation along with work continuous follow-up, and to investigate differences in respondents' estimations of their performance keeping in mind visual management implementation that can be attributed to employees' work experience and number of training courses, the current study was designed to answer the following two questions:

- (1) What is the degree of employee performance considering visual management in Jeddah National Hospital?
- (2) Are there any statistical differences in respondents' estimations of their performance in view of visual management that can be attributed to their work experience and number of training courses?

2. Literature review

The literature on visual management in healthcare sector is still in its infancy. However, several studies were carried out in other sectors, from which a researcher can develop a clear understanding of this strategy based on its definitions, functions and significant, as can be seen in the following sections.

2.1 Visual management definition

Visual management has been defined as a management style used to manage problems as quickly as possible and to get rid of their root causes. It is also known as a vision-based management model that aims to improve the efficiency and effectiveness of management (Tezel, 2010). For Tezel et al. (2016) and Kurpujuweit et al. (2018), visual management is a strategy aimed at increasing information availability by providing individuals in the workplace with sensory aids to achieve flexibility in the flow of information and hence flow of work. Other definitions of visual management described it as a strategy of organizational control, measurement and improvement, which uses visual aids to make information more visible and to enhance communications in the workplace in order to support individuals' operations (Brady et al., 2018). For Parry and Turner (2006), visual management tools were developed in the context of lean thinking to guide processes in real time. Suski (2019) described visual management as a system used to increase organizational performance based on connecting organizational vision, values, objectives, and culture with management types like quality management, process management, etc., in which one or more of the human five senses are addressed.

2.2 Visual management significance and functions

Researchers highlighted several pros of visual management. Brady et al. (2018) described this strategy as an effective method used to enhance organizational performance by aligning organizational vision, core values, objectives as well as culture with work systems, operations, and elements depending on human sensory modalities. De Koning et al. (2006) regarded this strategy as an effective solution provided by lean thinking to solve organizational problems. A key benefit of visual benefit is that it supports the continuous flow of work by improving workers and managers' abilities to detect and correct organizational problems before they disrupt the entire system (Murata & Katayama, 2010; Brady et al., 2018). In healthcare sector, visual management can be adopted to plan and control healthcare operations in hospitals and to achieve the process of continuous improvement (Verbano et al., 2017) and to eliminate processes duplication through consistent charge processes, recording patient details in fewer places, and non or less waiting of staff (Radnor et al., 2012). Regarding visual management functions, Tezel et al. (2009, 2014) indicated that functions of visual management can be exemplified in terms of nine functions, including transparency of production process, following adequate procedures as a discipline, continuous improvement through innovation, job facilitation by visual means, on-the-job-training, creating shared ownership and a desired image, simplification based on constant control and information availability, management by facts using statistical data and unification through the elimination of horizontal, vertical, external and geographical barriers. Beynon-Davies and Lederman (2017) added that visual management is used extensively in the management of operations, especially in the improvement of operations in different sectors such as the manufacturing sector, and the health care sector.

2.3 Employee performance in light of visual management

Employee performance, as a multidimensional variable, has been simply defined as individuals' contribution as measured in practical terms. This construct can be well understood considering abilities-motivation-opportunities (AMO), in which employee performance is operationalized in terms of three dimensions; individuals' abilities and skills, their motivation to utilize them in their job tasks, and opportunities available from them as represented by an adequate work environment (Pahos & Galanaki, 2019). Employees have their own pivotal role in organizational performance, which can be measured by visual management, with an emphasis on human capital, by which several positive outcomes can be achieved such as increased employee productivity, enhanced quality, enriched motivations, advanced internal communications, improved information flow, and supported decision-making process (Suski, 2019). According to Kattman et al. (2012), there is a positive relationship between visual workplace and employee performance since the visual management plays a significant role in information sharing, employee self-direction and employee empowerment.

3. Methodology

3.1 Study population and sample

The population of this study consisted of 820 employees working at Jeddah National Hospital according to the hospital statistics in 2018/2019. A sample encompassed 370 employees were randomly selected from the hospital. A total of 370 questionnaires were distributed and 350 questionnaires were returned.

3.2 Study instrument

A questionnaire was developed referring to related works in order to gather the required data. It included three main sections: (1) employee personal data such as years of work experience and number of training courses. (2) work rules and regulations (items 1-12). (3) change, improvement and innovation (items 13-25), and (4) work continuous follow-up (items 26-35).

3.3 Validity and reliability

Validity was measured based on suggestions of an academic panel using a cut-off criterion of 80% agreement to include items. Three items were eliminated. The initial version was used to compute Cronbach's alpha. Table 1 shows the results of validity and reliability findings. It was found that the questionnaire that used in this study since Cronbach's alpha is greater than 0.7 (Bland & Altman, 1997).

Table 1

Results of validity and reliability

| Variables | Items | Content validity | Cronbach's alpha |
|------------------------------------|-------|------------------|------------------|
| Work rules and regulations | 1-12 | ✓ | 0.87 |
| Change, improvement and innovation | 13-25 | ✓ | 0.83 |
| Work continuous follow-up | 26-35 | ✓ | 0.79 |

4. Results and discussion

4.1 Results of question 1

Means (M) and standard deviations (SDs) were used to answer question 1 "what is the degree of employee performance in light of visual management in Jeddah National Hospital in terms of work rules and regulation, change, improvement and innovation, and work continuous follow-up?" The results are shown in Table 2.

Table 2

Means and standard deviations of employee performance degree in light of visual management

| No. | Dimensions | Means | SDs | Rank | Degree |
|-----|------------------------------------|-------------|-------------|------|-----------------|
| 1 | Work rules and regulations | 2.84 | 0.31 | 1 | Moderate |
| 2 | Change, improvement and innovation | 2.83 | 0.32 | 2 | Moderate |
| 3 | Work continuous follow-up | 2.80 | 0.38 | 3 | Moderate |
| - | Total | 2.82 | 0.39 | - | Moderate |

The results in Table 2 indicate that the total degree of employee's performance in light of visual management is moderate (M = 2.82, SD = 0.39). This result may be attributed to the modernity of visual management concept in service organizations in general and healthcare service organizations such as Jeddah National Hospital in particular, in addition to the lack of follow-up of the application of TQM standards in some sections of the hospital in terms of updating regulations and instructions that govern the work, and lack of new strategies that formulated to introduce change and continuous improvement. Specifically, the results illustrate that "work rules and regulations" ranked first (M = 2.84, SD = 0.31), followed by "Change, improvement and innovation" in the second rank (M = 2.83, SD = 0.32), then "Work continuous follow-up" in the third rank (M = 2.80, SD = 0.38). The researcher attributed the reason behind the first rank of work rules and regulations to the concern of hospital staff to achieve visual management through

strategic planning and to use an efficient and effective system to deliver patient reports to the concerned parties. On the other hand, the reason why works continuous follow-up ranked last is that the lack of some strategies and procedures for continuous improvement in the application of visual management through continuous follow-up mechanisms of work in some medical and administrative departments in the hospital. These results agree with Al-Hudhali (2015) who found a moderate correlational relationship between the implementation of visual management requirements and employee motivations, and with Ulhassan et al. (2014) who revealed that the implementation of lean methodology in hospitals had some influence on teamwork functioning. In contrast, the results were inconsistent with Hammam (2012) who revealed a high degree of employee awareness in healthcare organizations in the concept of healthcare service quality, requirements of continuous improvement and six-sigma methodology, and with Brahamin's (2012) results that showed an excellent level of performance considering visual management.

Work rules and regulations

Table 3 displays the total degree of employees' estimations of work and regulations as well as the degrees of items as assessed by means and standard deviations.

Table 3
Means and standard deviations of work rules and regulations

| No. | Dimensions | Means | SDs | Rank | Degree |
|-----|--|-------------|-------------|------|-----------------|
| 12 | Integrity and transparency within business rules | 2.93 | 0.32 | 1 | Moderate |
| 1 | A comprehensive strategic plan in line with the mission, goals and values of the hospital and the requirements of the Ministry of Health | 2.92 | 0.27 | 2 | Moderate |
| 5 | An efficient and effective system for communicating patient reports to concerned parties | 2.87 | 0.41 | 3 | Moderate |
| 11 | the delegation of authority to enable staff in work established rules | 2.84 | 0.42 | 4 | Moderate |
| 10 | Effective and objective methods in evaluating business rules | 2.80 | 0.45 | 5 | Moderate |
| 3 | Realistic goals that can be measured | 2.78 | 0.51 | 6 | Moderate |
| 7 | Concerned party's involvement in the development of rules and work plan | 2.73 | 0.55 | 7 | Moderate |
| 6 | The development of programs of administrative work that contain multiple activities | 2.70 | 0.58 | 8 | Moderate |
| 9 | Business rules and regulations follow its requirements | 2.65 | 0.95 | 9 | Moderate |
| 8 | The rules of work are comprehensive to define tasks and performance measurement standards | 2.63 | 0.77 | 10 | Moderate |
| 4 | decision-making based on assessment of results to develop business improvement strategies | 2.62 | 0.85 | 11 | Moderate |
| 2 | Organization of the work plan with emphasis on administrative and technical aspects | 2.61 | 0.92 | 12 | Moderate |
| - | Total | 2.76 | 0.41 | - | Moderate |

The results in Table 3 clarify that the total degree of employee performance considering visual management in terms of work rules and regulations is moderate ($M = 2.76$, $SD = 0.41$). The degrees of all items were moderate. Item no. 12 "integrity and transparency within business rules" ranked first with a moderate degree ($M = 2.93$, $SD = 0.32$) and this may be due to the interest of the managers of the hospital in establishing the values of transparency and discipline in work and striving towards applying regulations and instructions to everyone. Item no. 2 "organization of the work plan with emphasis on administrative and technical aspects" ranked last ($M = 2.61$, $SD = 0.92$) and this may be due to the lack of written plans in which administrative and technical management requirements are combined with regard to medical work and due to the lack of coordination between the medical team and the administrative team may lead to the absence of action plans. Based on these results, it was concluded that there is a need for building a strategy to develop the rules of work so as to regulate relationships between the director of the hospital and his subordinates.

Change, improvement and innovation

Table 4 demonstrates the total degree of employees' estimations of change, improvement and innovation dimension as well as the degrees of items as evaluated by means and standard deviations.

Table 4
Means and standard deviations of change, improvement and innovation

| No. | Dimensions | Means | SDs | Rank | Degree |
|-----|---|-------------|-------------|------|-----------------|
| 26 | A culture of change among employees | 2.91 | 0.37 | 1 | Moderate |
| 18 | An adequate work environment for innovation and creativity | 2.86 | 0.43 | 2 | Moderate |
| 13 | Simple and effective business rules for change requirements | 2.84 | 0.44 | 3 | Moderate |
| 21 | Training opportunities to improve employee performance | 2.82 | 0.52 | 4 | Moderate |
| 22 | A plan to improve the level of employee performance | 2.81 | 0.46 | 5 | Moderate |
| 20 | Stimulating employees to conduct scientific research | 2.76 | 0.54 | 6 | Moderate |
| 16 | Financial and non-financial incentives to improve performance | 2.75 | 0.55 | 7 | Moderate |
| 17 | Data availability to enhance work | 2.74 | 0.58 | 8 | Moderate |
| 15 | Changes in current policies | 2.60 | 0.65 | 9 | Moderate |
| 19 | Employee participation in work-related decisions | 2.55 | 0.80 | 10 | Low |
| 23 | Objective systems to evaluate performance | 2.45 | 0.95 | 11 | Low |
| 24 | Adequate utilization of available resources | 2.43 | 1.08 | 12 | Low |
| 25 | Employee participation in problem-solving | 2.40 | 1.09 | 13 | Low |
| - | Total | 2.69 | 0.89 | - | Moderate |

The results in Table 4 point out that the total degree of employee performance in view of visual management in terms of change, improvement and innovation is moderate ($M = 2.69$, $SD = 0.89$). Item no. 26 “a culture of change among employees” ranked first ($M = 2.91$, $SD = 0.37$) and this may be due to keenness of the managers to implement change management in the hospital's working environment. However, the culture of change among some of the employees is still rejected, as some of them have long experience or may be because of lack of training. The degrees of all items were moderate except four items with low degrees including employee participation in work-related decisions, availability of objective systems to evaluate performance, adequate utilization of available resources and employee participation in problem-solving.

Work continuous follow-up

Table 5 clarifies the total degree employees' estimations of work continuous follow-up dimension as well as the degrees of items as evaluated by means and standard deviations.

Table 5

Means and standard deviations of work continuous follow-up

| No. | Dimensions | Means | SDs | Rank | Degree |
|-----|--|-------------|-------------|------|-----------------|
| 6 | Recording urgent needs and following up implementation | 2.87 | 0.63 | 1 | Moderate |
| 2 | Follow-up mechanisms to spread the culture of excellence | 2.86 | 0.58 | 2 | Moderate |
| 3 | Continuous assessment of employee's performance | 2.83 | 0.54 | 3 | Moderate |
| 7 | Follow-up of the preparation of emergency plans | 2.82 | 0.67 | 4 | Moderate |
| 5 | Follow-up procedures to achieve quality of service | 2.78 | 0.49 | 5 | Moderate |
| 1 | Procedural guides to follow up the implementation of | 2.74 | 0.66 | 6 | Moderate |
| 4 | Field follow-up of departments achievements | 2.69 | 0.61 | 7 | Moderate |
| 10 | Daily Follow up of complaints of citizens in various media | 2.58 | 0.74 | 8 | Low |
| 9 | always Follow up of sudden accidents | 2.50 | 0.73 | 9 | Low |
| 8 | Follow up of instructions implementation | 2.44 | 0.89 | 10 | Low |
| - | Total | 2.71 | 0.88 | - | Moderate |

The results in Table 5 indicate that the total degree of employee performance in light of visual management in terms of work continuous follow-up is moderate ($M = 2.71$, $SD = 0.88$). Item no. 6 “recording urgent needs and following up implementation” in the first rank ($M = 2.87$, $SD = 0.63$) and this may be due to the lack of a system to follow the administrative and technical needs of the hospital and to follow up spreading the culture of excellence in the working environment of the hospital. Most of the items were moderate except three items related to daily follow up of complaints of citizens in various media, always follow up of sudden accidents and follow up of instructions implementation. Consequently, there is a need to implement visual management to improve performance via continuous follow-up, learn from errors and correct work conditions.

4.2 Results and discussion of question 2

One-way ANOVA was used to answer question 2 “are there any statistical differences in respondents' estimations of their performance in view of visual management that can be attributed to their work experience and number of training courses?”

Work experience

Table 6 shows the results of ANOVA test that used to identify if there are any differences between respondents' estimations of their performance level due to work experience.

Table 6

Results of ANOVA for difference in employee responses due to work experience

| Dimension | Source | Sum of squares | df | Mean square | F | Sig.* |
|-----------------------------------|----------------|----------------|-----|-------------|--------|-------|
| Work rules and regulations | between groups | 18.516 | 3 | 6.172 | 120.07 | 0.000 |
| | within groups | 25.598 | 498 | 0.051 | | |
| | Total | 44.114 | 501 | | | |
| Chang, improvement and innovation | between groups | 44.037 | 3 | 14.679 | 251.95 | 0.000 |
| | within groups | 29.014 | 498 | 0.058 | | |
| | Total | 73.051 | 501 | | | |
| Work continuous follow-up | between groups | 43.709 | 3 | 14.570 | 304.01 | 0.000 |
| | within groups | 23.867 | 498 | 0.048 | | |
| | Total | 67.576 | 501 | | | |
| Total | between groups | 40.868 | 3 | 13.623 | 644.24 | 0.000 |
| | within groups | 10.530 | 498 | 0.021 | | |
| | Total | 51.398 | 501 | | | |

* significant at $\alpha \leq 0.05$

The results in Table 6 indicate that there are statistically significant differences between the means of employees' responses on their performance considering visual management ($F = 644.24$, $P\text{-value} = 0.000$). Particularly, there are statistically significant differences

between the means of employees' responses in terms of work rules and regulations ($F = 120.07$, $P\text{-value} = 0.000$), change, improvement and innovation ($F = 251.95$, $P\text{-value} = 0.000$), and work continuous follow-up ($F = 304.01$, $P\text{-value} = 0.000$).

The Scheffe test was used to conduct post-hoc comparisons to identify which pairs of means are significant. The results in Table 6 indicate that there are statistically significant differences between employees' estimations of their performance due to work experience in favor of employee with long experiences, 15 – more than 15 years and 10 – less than 15 years in comparison with employees who have less than 5 years of experience and 5 – less than 10 years. Further, there are statistically significant differences between employees with less than 5 years and employees with 5 – less than 10 years of experience in favor of those with 5 – less than 10 years. This result may be explained by the fact that the employees who have higher experience acquired more knowledge on the methods, techniques and strategies of continuous improvement and application of visual management approach, unlike employees who have less experience on this side. This result is inconsistent with the results of the Ibrahim (2014) who found no differences due to years of experience.

Table 7
Results of Scheffe test

| Dimension | Experience | Mean | Less than 5 years | 5 – less than 10 years |
|-----------------------------------|-------------------------|-------|-------------------|------------------------|
| Work rules and regulations | Less than 5 years | 2.449 | - | - |
| | 5 – 10 years | 2.284 | 0.37* | - |
| | 10 – less than 15 years | 2.918 | 0.047* | 0.09* |
| | 15 – more than 15 years | 2.979 | 0.53* | 0.15* |
| Chang, improvement and innovation | Less than 5 years | 2.144 | - | - |
| | 5 – 10 years | 2.701 | 0.55* | - |
| | 10 – less than 15 years | 2.856 | 0.71* | 0.16* |
| | 15 – more than 15 years | 2.962 | 0.82* | 0.26* |
| Work continuous follow-up | Less than 5 years | 2.187 | - | - |
| | 5 – 10 years | 2.803 | 0.62* | - |
| | 10 – less than 15 years | 2.950 | 0.76* | 0.015* |
| | 15 – more than 15 years | 2.992 | 0.80* | 0.19* |
| Total | Less than 5 years | 2.200 | - | - |
| | 5 – 10 years | 2.735 | 0.53* | - |
| | 10 – less than 15 years | 2.908 | 0.71* | 0.17* |
| | 15 – more than 15 years | 2.984 | 0.78* | 0.25* |

* significant at $\alpha \leq 0.05$

Training courses

Table 8 shows the results of ANOVA test that is used to identify if there are any differences between respondents' estimations of their performance level due to training courses. It was noted that there are no significant differences between employees' responses on their performance considering visual management ($F = 1.144$, $P\text{-value} = 0.320$), which is greater than the significance level 0.05. As well, the results show that there are no significant differences due to training courses in terms of work rules and regulations, change, improvement and innovation, in addition to work continuous follow-up. The reason for this can be explained by the similarity of circumstances among respondents regardless of the training courses they attend, and some of them are participants and have training courses in quality, and therefore their performance according to visual management is similar because they are influenced by the same factors that regulate the work. This result agrees with Ibrahim (2014) who found no significant results due to training courses.

Table 8
Results of ANOVA for difference in employee responses due to training courses

| Dimension | Source | Sum of squares | df | Mean square | F | Sig.* |
|-----------------------------------|----------------|----------------|-----|-------------|-------|-------|
| Work rules and regulations | between groups | 0.107 | 2 | 0.054 | 2.979 | 0.053 |
| | within groups | 6.238 | 347 | 0.018 | | |
| | Total | 6.345 | 349 | | | |
| Chang, improvement and innovation | between groups | 0.024 | 2 | 0.012 | 0.454 | 0.635 |
| | within groups | 9.111 | 347 | 0.026 | | |
| | Total | 9.135 | 349 | | | |
| Work continuous follow-up | between groups | 0.105 | 2 | 0.053 | 2.156 | 0.117 |
| | within groups | 8.472 | 347 | 0.024 | | |
| | Total | 8.577 | 349 | | | |
| Total | between groups | 0.040 | 2 | 0.020 | 1.144 | 0.320 |
| | within groups | 6.034 | 347 | 0.017 | | |
| | Total | 0.074 | 349 | | | |

* significant at $\alpha \leq 0.05$

5. Policy implications and imitation

The aim of this study was to explore the degree of employees' performance in light of visual management and to identify difference between employees' estimations on their performance due to work experience and training. The results have shown that the total degree of employee performance was moderate. Particularly, the results indicated that employee performance was moderate on the three dimensions under study; work rules and regulations, change, improvement and innovation, and work continuous follow-up.

On the other hand, the result revealed significant differences between respondents' in terms of their work experience but not in their training courses. Based on these results, managers of the hospital are required to adopt new strategies like visual management to improve employees' performance. They are also requested to train their employees on preparing preventive and alternative plans to face problems and to be able apply these plans from the site of the event. Additionally, managers of the hospital should develop continuous follow-up methods among the leaders in the hospitals through activating the technology in follow-up and implementation of the actual situations that occur in the hospital. This study is limited by its cross-sectional design and by its sample that selected from Jeddah National Hospital. Therefore, future studies are required to conduct an analysis of the performance of employees at the Jeddah National Hospital and other hospitals according to the latest administrative trends such as visual management.

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