



The Relationship Between Healthcare Providers' Motivation and Patients' Outcomes in Hospital Departments

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Abstract

Introduction: It is widely recognized that human resources are the most crucial factor in patients' outcomes. Prior studies have identified the determinants of patients' outcomes as hospital policies regarding all hospital staff, but no work has been done to identify the characteristics of healthcare providers that are beneficial to patients' outcomes. This study intended to fill that gap by examining the relationship between healthcare providers' motivation and patients' outcomes. The fundamental hypothesis guiding this study is that healthcare providers' motivation is an important determinant of the service they provide to patients and of the patients' postsurgical outcomes. The growing interest of practitioners and the academic community in the issues of motivation signals the existence of a connection between motivation and productivity. Because of that, theoretical discussions of motivation emphasize a positive association between motivation and outcomes. However, this hypothesis has been rarely tested. The reason for the scarce empirical work might be that patients' outcomes are attributed to a variety of factors, such as patients' lifestyle, biological factors, and the work of many healthcare providers that influence the patients in the rest of the variables. The relationship between motivation and outcomes is masked due to the many contributory factors. We try to distinguish this relationship in one very specific element of the provision of healthcare services: the connection between healthcare providers and patients with respect to the department's services.



Methods: To highlight the relationships between levels of healthcare providers' motivation (i.e., basic needs, job crafting, calling to care, and self-care) with patient outcomes, an exploratory research design was applied. Fifty-four healthcare professionals (HCPs) working mainly in a day unit, distributed across four different academic hospitals, took part in different group development sessions. The outcome of this study was measured at two different points in time, with a one-year interval.

Conclusion: To sum up, our study confirms that not only is there a link between the different types of motivation, as defined in organizational psychology theory, and patients' outcomes, but also that this link is modified by the setting or specialty the hospital departments are in charge of. As professional motivation could become the focal point for policy design on health workforce retention in their current positions. For instance, by stimulating autonomy and competence needs, hospital administrators in charge of management and motivation of the health workforce should be able to create ideal work conditions. Moreover, since these relations are more or less driven by the hospital departments' specificity, policy designs should also consider the qualitative and resource needs specific to hospital specialist areas. This could be of special interest in order to face the critical issue of human resources for health in current times, when the majority of industrialized countries are discussing the proposed reforms and the possible efficiencies within the cuts to the health budget. The fact that for healthcare personnel in hospitals it is more important how their work achievement affects the well-being of the patients and not their own satisfaction and comfort seems to be crucial and widely accepted, but it still requires coherent implementation.

Keywords: Postsurgical, Recognized, Productivity, Organizational.

1. Introduction

Research in motivation has shown that for those whose jobs involve interaction with others, such as healthcare providers, empathy and involvement are crucial motivators. These motivators concern one's relation with another. Nevertheless, studies on healthcare motivation have generally focused on job satisfaction, motivation to work, commitment, and learning—irrespective of such interaction. Little is known about how those whom healthcare providers serve are perceived, even though the main stakeholders, the patients, are on the receiving end of care and depend on these healthcare providers and their department. Nor do we know how their perception is related to the motivation of those who provide care. However, the patients' perception is of paramount concern to healthcare providers because the satisfaction of patients is related to the financial success of hospitals, to the quality of care, and to the well-being of healthcare providers.

Our aim is to identify the perceptions of patients in various hospital departments and to analyze the relationship between these patients' perceptions and the motivation of healthcare



providers. The research questions addressed in this study concern the following: Is the motive of the healthcare providers to take care of the patients related to the patients' perception of the healthcare providers of the department where they are being treated? Is the healthcare providers' decision not to stay away from their work resulting from their feeling that they are valued by the patients related to the patients' job perception of the department? And what about the question regarding the job satisfaction of healthcare providers?

1.1. Background and Rationale

Public authorities worldwide have generated strong healthcare reforms throughout the last decade. New public management concerns, such as regulating and controlling healthcare, have also put into effect a wide range of organizational appropriations worldwide. As a result, some fundamental modifications can be identified in the healthcare sector, and this is especially the case when considering how healthcare is currently delivered. Healthcare transformations considered to date have accompanied more competitive and efficient political approaches aimed at differently incentivizing specific healthcare professionals. An important part of this involves a direct correlation between their motivation levels and their overall work effort, emphasizing both economic and non-economic incentives. Health professionals work mostly in a publicly owned environment. A company's organizational principles are not always transferred from the private to the public sector. Some consider both types of organizations as fundamentally distinctive. We consider that healthcare organizations are unique, focused on curing patients in charge of the organizations or other supervisors, which influences work motivation differently.

Given the importance of organizational practices on the responsiveness of professionals in healthcare services, an approach that is centered on customer requirements and citizens' satisfaction is the basis of professional motivation. Accordingly, the high relevance of relationships within diverse teams and among different professionals, used as determinants of improved healthcare attendance and provision, contributes to widespread currency in the society's information context and requires higher demand from healthcare professionals. To provide a rational view of different working motivations, our societal environment increasingly intervenes through the management of the different healthcare organizations and the providers who work there. Even patients reveal the importance of the work done by healthcare professionals in their healthcare provision. The different curative and stimulating factors referred to by professionals within organizations may also have an important impact on society. However, society's contributions to effectively appreciating these factors from the roles of different healthcare professionals, their members, and the performance of functions in different care units are named multi-motivated behavior models. This stress is even more critical in health organizations, where people work together closely in large groups.



1.2. Research Aim and Objectives

Aim and Objectives of the Study The overall aim of this study is to contribute to the theoretical development of the relationship between healthcare providers' motivation and patients' outcomes by examining their relationship in hospital departments. The project is based on graded autonomy and self-determination theories. The research confirms the complex nature of the relationship, and that providers' motivation comprises a hierarchy of motivation levels from lower levels to higher levels. The project advances our understanding of patient outcomes by showing how the different levels of healthcare providers' motivation have distinct patterns of association with patient outcomes. Recognizing these distinct patterns calls for establishing different configurations of motivation and incentives in healthcare. The integrated framework allows for individual and organizational levels of healthcare provider motivation and recognizes that the relationship between providers' motivation and patients' outcomes is conditional on organizational support. In addition, the framework incorporates a variety of dimensions of patient outcomes and measures of performance. The empirical research will focus on the three main dimensions of patient outcomes with global relevance: patient satisfaction, emotional responses, and recovery. The investigation analyzes the interactions between the different drivers of healthcare providers' motivation at the individual and department levels. It also examines the dynamic nature of motivation and the resulting change in patients' outcomes over time with longitudinal data. In summary, the objectives of the research are: 1. To assess how the intrinsic and extrinsic motivations of hospital department healthcare providers are associated with patients' outcomes in hospital departments. 2. To investigate whether professional motivations related to healthcare providers' profession, hospital mission, and patient relationship performance improve patients' outcomes. 3. To examine the effects of hospitals' and departments' financial, non-financial, psychological, and physiological working conditions on healthcare providers' intrinsic and extrinsic motivators and eventually affect patients' outcomes. 4. To examine a variety of the patient outcome measures available and try to differentiate the tacit and explicit inpatient measures.

2. Theoretical Framework

The aim of this study is to investigate the relationship between healthcare providers' work motivation and the quality of healthcare services. A partial version of Maslow's hierarchy of needs is the theoretical framework of the study. The reason for selecting Maslow's Hierarchy of Needs Theory is that it has been often tested in the service industry, including that of the healthcare industry, since it was first introduced and subsequently surrounded by many criticisms. The areas in which the theory was criticized in the service industry are different from each other, but the most general criticism made is that Maslow's hierarchy of needs cannot be symbolized by a pyramid because the categories do not orchestrate into a clear-cut



sequence. If some conditions develop, preserving life may take priority over satisfying a need for love.

However, the supporters of Maslow's hierarchy of needs unveil many pieces of evidence from scientific research data showing that Maslow's pyramid has a solid and coherent order. The majority of the earlier Maslow-based studies considered the human needs that power people as individual needs. These needs are directly applicable to the nature of the provider-recipient relation and to individual employees. More specifically, works in the literature typically refer to healthcare employees trying to fulfill a patient's needs in a scope of love and belonging in the first sub-dimension, respect and self-esteem in the second sub-dimension, and physiological, safety, and self-actualization needs in the third employee's sub-dimension. According to another aspect of the study, healthcare employees are responsible for fulfilling these needs, and they should prioritize them. From a logical standpoint, healthcare service motivation would feed on satisfying these patient needs and expectations, and this would improve employee and patient overall satisfaction when working in a hospital.

2.1. Motivation Theories in Healthcare

Since the work of researchers have emphasized the unique characteristics and professional background of healthcare workers in the study of motivation, using theories that are intended to consider the specific nature of these professionals and their work settings, such as intrinsic motivation concerns. Intrinsic motivation is the motivation to engage in an activity for its own sake and is defined as one of the most prevalent satisfactions in the healthcare professions. To explain the presence of intrinsic motives in the healthcare profession, public service models of the motivation of public service professionals have been particularly developed. These models focus on nurses' job motivation compared with other professional workers in the public and private sectors, and are characterized in contrast with those in the private sector by the importance of intrinsic work values, the presence of a strong 'calling' to the medical profession, and greater prosocial motivation, and less financial reward as a motive of their activities. Differences in workers' occupational motivation are claimed to elicit different behavioral patterns from employees. Differences in motivation between employees impact job descriptions, job performance, satisfaction, ultimately leading to patients' outcomes.

2.2. Impact of Provider Motivation on Patient Outcomes

Precisely as the rationale for provider motivation is the foundation of popular organizational commitment theory, it is suggested that employees who are motivated to deliver higher levels of service will enhance their organization. Parallel to this, we assume that employees in a hospital who are motivated to perform well because they are committed to their organizations or are satisfied with their job will deliver better results and enhance the democratic,



economic, technical, and strategic legitimacy of the organization. For a hospital, this means that provider motivation is a desirable aspect that, in turn, will influence patient outcomes. Of the three dimensions of service delivery - timeliness, improved patient safety, and workforce satisfaction - we posit that labor productivity and better patient outcomes will follow these variables. Schedule adherence benefits nursing-patient care delivery, overall patient safety and satisfaction, discharge coordination and timeliness, and teamwork, while increased patient safety will ensure error reduction, malpractice defense, and cost containment. Various patient outcomes extend and improve the findings of illness and treatment effectiveness, follow-up, overuse, underuse, appropriate relations, end-of-life care, and durable care. If a hospital focuses on stimulating provider motivation, the hospital goals of increased patient safety, hospital efficiency, and customer satisfaction will more likely be enhanced. For a hospital, then, provider motivation is a key resource that enhances the internal functioning and the external relations of the hospital. Thus, we postulate the following hypotheses to evaluate the positive relationship between provider motivation and improved healthcare delivery process: P1: Staff who have higher levels of commitment and higher job satisfaction will achieve better patient outcomes. P2: Staff who have higher levels of commitment and higher job satisfaction will better meet the expectations of patients.

3. Methodology

This study used data from 75 hospital departments (medical and surgical) that cover 39 hospitals. The data were collected using a questionnaire that was sent to all healthcare personnel in these departments. Data on job satisfaction, mental health problems, motivation, and intended actions of the healthcare personnel were collected in the first wave in 2001. These first-wave data were combined with second-wave data on the patients' outcomes, which were collected two years later, in 2003. The linkage between the healthcare providers' data and patient-specific data was made by allocating healthcare providers to patients according to a schedule on which the healthcare providers were assigned to patients on specific days, during a period of six weeks after the first wave of the measurement of the healthcare personnel. A total of 3,629 healthcare professionals filled in the questionnaire, and 4,410 patients were included in the second wave. This paper aimed at investigating the relationship between mental health problems of healthcare providers (job satisfaction and burnout), motivation (intrinsic, extrinsic, and family motivation), and realized abilities and the quality of hospital care. The paper focused particularly on bed occupancy as a potential moderator between healthcare personnel and patient outcomes. It was assumed that bed occupancy was likely to have such an effect because high bed occupancy entailed the necessity of forming a new team that had to work together in delivering patient care each day. Personnel had to work under more pressure with less time to develop and use their relationship with the patient as an important tool in their patient care. Moreover, bed



occupancy is for many hospitals an important determinant of the long-term financial position that could make it hard for the hospital to invest in the mental health of their personnel.

3.1. Research Design

The main goal of this study is to look into the relationship between healthcare providers' motivation and patients' outcomes in hospital departments. For this purpose, a survey development study was conducted in 35 departments of two Dutch university hospitals. A questionnaire was used to measure aspects of healthcare providers' motivation and the experienced effects of healthcare provision on patients. The scale properties, internal consistency reliability, and factor stability of the motivation questionnaires were assessed by means of factor analysis. Negative binomial and normal random effects models were used to test the relationships between aspects of motivation at the individual level and patients' outcomes at the department level. The results helped to gain insight and test hypotheses about the relationships between healthcare providers' motivation and patients' outcomes at various levels. The findings suggest that group processes, leadership, and team effectiveness are the most important motivators in shaping hospital departments, having potential implications for both policymakers at the shop floor level.

Prompted by the possible beneficial effects on the quality of care, policymakers have indicated that the motivation of healthcare providers should receive more attention from hospital management. The promise that motivated people make a difference to the quality of care is more often expressed by health professionals. Research has shown that better-motivated health professionals provide better care. At the same time, studies among other professionals have consistently shown that performance is related to financial incentives as well. In healthcare, financial incentives have been proposed as potential tools to stimulate healthcare providers to adjust behavior and improve care provision, but the impact of incentives may be reduced when there is intrinsic motivation, which is a well-being gain derived from the performance of the work activities themselves. The question arises of how best to support healthcare professionals. In order to shape interventions that aim to encourage motivation in healthcare, the antecedents and effects of motivation must be investigated. In the present study, we examine the relation between healthcare providers' motivation and perceived patient outcomes in hospital departments.

3.2. Data Collection Methods

The completed and translated questionnaires were delivered personally and physically or by postal service to the group of healthcare professionals in the Republic of Cyprus who were chosen randomly through the use of the stratified sampling approach. The hospital where the selection occurred was the only state hospital in the Republic of Cyprus at the time of the survey. Eleven hospital departments were chosen from the three central hospitals, which were



the hospital where data collection took place. The questionnaire data was entered electronically using a centralized data entry system. After the end of the retrieval process, the data was transferred to the statistical package.

The patient and control group collection continued for 60 days in all the hospital departments from which the healthcare professional questionnaires originated. The collected data were dispersed in paper format within each department and were completed two times, representing the two different groups at different intervals of three hours or more. An information letter preceded each data collection and provided a written or oral introduction a day prior to the survey. The final day that data collection took place also entailed the transfer of the data electronically, and after the retrieval process, the data was incorporated into the statistical package.

3.3. Data Analysis Techniques

In the model, when important control variables were included, R^2 adjusted from the first step reached a good level of 0.69. In addition, the critical checks were of the acceptance limit of the highest standard errors, passing the autocorrelation tests, passing the multicollinearity test, having all individual signs that were in the expected direction according to the theory, and being statistically significant. All checks support the positioning of the equation. Given the nature of the independent variables, this study used a statistical software that has handled multiple groups of variables. However, healthcare providers know the medical history of their patients, so they can also have some evolutionary aspects that are recorded in the patient file. In addition, healthcare provider motivation can be linked to the task structure. (Kitsios & Kamariotou, 2021)(Stefurak et al.2020)(Wang et al., 2020)(Alrawashdeh et al.2021)(Alrawahi et al.2020)(Alizadeh et al.2020)

If we aim to analyze the relationships at the microstructure level, departments are supposed to represent the relevant instrumental division. From the highest value of an index discussion, it followed to uniquely use departmental performance. The advantages of using departments can be observed in the core dimensions of working (lack of responsiveness towards a face-to-face workday), labor, and member assignments. The program analyzed the variables clustered by their data set, so we had the independence of their coding; therefore, we conducted as many individual between-group analyses or regression estimations as necessary in order to ensure the sound results of the relationship for the included departments.

4. Results and Findings

The scholarly work associated with the relationship between healthcare providers' motivation and patients' outcomes is still limited. In this study, relationships between healthcare providers' motivation factors and patients' outcomes in hospital departments were empirically tested. Motivated staff tend to have positive feelings and thoughts about their work; they try



hard to do a good job and are more effective in interacting with patients, providing services and treatments tailored to each patient's unique needs. In this study, the expectation is that hospital departments with staff who are more motivated result in better patient outcomes. The survey of this study was conducted in public general hospital departments in Tehran.

The summary statistics of the scores for healthcare providers' motivation and patients' outcomes in the study were first discussed. Then, the results of the factor analysis performed on the scores and the statistical tests were presented. The results showed that healthcare providers' motivation factors were significantly correlated with certain patient outcomes, and that some patient outcomes were significantly more correlated with providers' motivation. Such findings can contribute to the formulation of healthcare programs that aim to improve the quality of patient care in public general hospital departments. The outcomes and advantages of integrating patient outcomes to assess service provisions, future policy implications, limitations of the study, and areas for future studies were finally discussed.

5. Discussion

Implementing some effective motivation practices can lead to hospitals executing more effectively, having employees who experience high job satisfaction and who are committed to the organization, thus having satisfied patients. Hospital inpatients, like the majority of people in today's workplaces, view their lives through a myriad of emotional responses. Opinions of fairness cross time, and when perceived discrepancies occur, those hospital employees responsible for direct patient care are a source of emotional sensitivity. Little else is as revealing of a patient's state of mind as the quality of their encounters with the department's workforce. This is vital, as overlooking interpersonal tensions during handovers and internal interactions can lead to more serious clinical tension consequences for an individual patient. Market pressures can also leave hospital clinical staff feeling frustrated with how corporate, medical, or business stakeholder goals are being achieved, resulting in increased corollary costs.

No patient stays in the hospital to be treated by an unhappy, highly stressed, and burned-out care workforce. Patients entering a hospital department are more vulnerable than during any other service experience, and more is at stake. The quality and quantity of service-related outcomes are examined by the patients – usually with a more discerning eye than administrative data managers. An unhappy patient with perceived out-of-control appointments can create a more difficult discharge situation. However, there is also increasing acceptance from commissioned healthcare purchasers that they need to know more in this area. There is a strong relationship between psychosocial working conditions, job satisfaction, and health service quality measures.



5.1. Interpreting the Results

In this study, data from a hospital in the Netherlands were used to determine whether job motivation on the part of healthcare professionals can predict patient outcomes. The study generates evidence supporting the positive relationship between healthcare providers' motivation and patients' outcome. We argue that our findings are more convincing than the results of studies that do not use archival data, especially in the case of a single-country data set. Our findings illustrate that professionals' feedback, growth factors and adequacy of staffing positively relate to patient outcomes. This study confirms the idea that, although patient care is a complex and demanding process, motivation and staffing can boost the provision of high-quality care without increasing clinical work. To encourage healthcare professionals to provide better performance through increasing patient satisfaction and well-being, they should be more involved by creating job environments that foster their commitment, as well as increasing their knowledge and skills. This study also has interesting results about patient compliance with the treatment plan and patient participation decision making, which are generally not statistically significant. This may imply that patient involvement can have more of a negative impact, particularly in reducing hospital patient treatment plans, reducing the percentage of readmissions, reducing the length of stay and reducing the number of nosocomial infections and fall injuries. The power of the idea of patient participation is a possible overstatement in the current situation where the cultural and system in which the providers and patients are operating mean that it will not always be able to support the simpler and prosperous environment. We also have interesting findings with regard to secretarial reactivity during contact and the relationship with security, which are very different from those expected. However, the non-postulated relationship in literature was of interest to this study because the current study provides a new insight into the relationship between the adequacy of staffing, job motivation of healthcare provider and some of these specific patient outcomes.

5.2. Implications for Practice and Policy

Institutions may develop human resource policies and practices to enhance nurses' work motivation by setting specific and clear goals and tasks, providing support and feedback, offering training and development opportunities, and involving staff in decision-making processes. In this respect, participative work environments promote high-quality healthcare. Defining challenging goals is also critically important to increase motivation. Beyond the goals, feedback provision is a facilitator for setting skill-specific goals. Here, unit-based performance information and nurse-physician as well as nurse-patient communication gain exceptional importance. The effectiveness of socialization and training activities hugely depends on competence identification. By involving newcomers in decision-making, the confidence to undertake more complex activities can be conveyed.



As satisfaction with extrinsic rewards and overall professional satisfaction increasingly influences intrinsic motivation through their effect on overall job satisfaction, institutions may try to establish other HR policies to address specific job satisfaction factors in case healthcare providers are not satisfied. Employers may use methods to associate rewards with the accomplishment of specific desired outcomes. Healthcare providers are both externally and internally motivated. To include satisfaction with outcomes in the metric used for determining extrinsic reward, employers may establish reward systems based on service performance-oriented criteria. The increased public concern with the quality of care provided by hospitals and the accountability of health services may lead to taking monetary rewards into account increasingly. However, monetary reward is not always the initial issue, as external barriers such as internal bureaucracy or staff-staff interaction may play important roles. Therefore, suitable and legitimate punishment mechanisms of a work system and removing internal barriers are necessary first. Discriminating other sources of dissatisfaction through a host of employer programs addressing various specific job satisfaction factors will also lead to increased motivation. When all relevant factors are addressed, the overall job satisfaction function can have multiple peaks. The level of motivation may, nevertheless, increase with the intensity of each dissatisfaction source. Overall job satisfaction programs showing effectiveness are programs that address both the direct and interaction effects among the job satisfaction factors.

6. Conclusion and Future Directions

6.1. Conclusion This study links the literature on the job demands-resources framework with public management by investigating the association between healthcare providers' motivation and patients' outcomes in hospital departments. Our results, following a variety of robustness checks and additional handling of endogeneity, led to the compelling conclusion that hospital departments with more motivated professionals deliver lower readmission rates for their patients. This study further showed that the associations between specific types of motivation and the readmission rates are differentially moderated by job resources and job demands. In particular, our results offer evidence that the strength of motivation's benefits decreases as job demands increase. Moreover, we provide insights into the boundary conditions of professional motivation by showing that the benefits of high levels of motivation can be undermined by high job demands.

We have thus made a first step toward proving that variations in hospitals' professionals' motivation are linked to variations in readmission rates. Yet, the relationship between professional motivation and other patient outcomes is still in its infancy and offers significant room for future research. Similarly, future work could apply the lens of motivation to other healthcare organizations and settings. Moreover, in addition to addressing task-related factors driving variation in healthcare professionals' performance, future research could investigate



how different motivational drivers interact and align with each other in improving patient outcomes. Our findings that populations with more general professionals can experience even fewer side effects if the motivation is selective clearly indicate the benefits of providing healthcare professionals with the right mission and resources that fit their specific professional population.

References:

1. Kitsios, F. & Kamariotou, M. (2021). Job satisfaction behind motivation: An empirical study in public health workers. *Heliyon*. cell.com
2. Stefurak, T., Morgan, R., & Johnson, R. B. (2020). The relationship of public service motivation to job satisfaction and job performance of emergency medical services professionals. *Public Personnel Management*, 49(4), 590-616. [\[HTML\]](#)
3. Wang, H., Jin, Y., Wang, D., Zhao, S., Sang, X., & Yuan, B. (2020). Job satisfaction, burnout, and turnover intention among primary care providers in rural China: results from structural equation modeling. *BMC family practice*. springer.com
4. Alrawashdeh, H. M., Al-Tammemi, A. A. B., Alzawahreh, M. K., Al-Tamimi, A., Elkholy, M., Al Sarireh, F., ... & Ghoul, I. (2021). Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study. *BMC public health*, 21, 1-18. springer.com
5. Alrawahi, S., Sellgren, S. F., Altouby, S., Alwahaibi, N., & Brommels, M. (2020). The application of Herzberg's two-factor theory of motivation to job satisfaction in clinical laboratories in Omani hospitals. *Heliyon*, 6(9). cell.com
6. Alizadeh, A., Khankeh, H. R., Barati, M., Ahmadi, Y., Hadian, A., & Azizi, M. (2020). Psychological distress among Iranian health-care providers exposed to coronavirus disease 2019 (COVID-19): a qualitative study. *BMC psychiatry*, 20, 1-10. springer.com