The Role of Personal Knowledge Management on the Effects of Self-Leadership to Transformational Leadership: A Study on the Public Healthcare Managers

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ABSTRACT

In the present era called the information age, also known as the digital age, healthcare managers have to deal with many challenges besides trying to adapt to the rapidly changing micro and macroenvironment affected by the pandemic. Currently, digitalization and hybrid work ecosystems are on the rise requiring healthcare managers to effectively use self-knowledge management tools to lead themselves and be able to lead their staff members by inspiring, encouraging, and motivating them transforming their staff members creating value for all. However, there is insufficient research on the relationship of leadership styles and personal knowledge management. This study aims to evaluate the mediating role of personal knowledge management in the effect of self-leadership on transformational leadership. The study was carried out with scales of self-leadership, transformational leadership, and personal knowledge management. Scales were validated by factor analysis. Structural equation modeling was performed to test the relationships. The research universe consisted of public healthcare managers working in Istanbul. It was found that the validity and reliability of the research scales were high. The self-leadership and transformational leadership perceptions of healthcare managers working in public institutions are high. The results indicated a partial mediation effect of personal knowledge management on the positive impact of self-leadership on transformational leadership. The conceptual model and the findings in this study provide a new contribution to the current literature.

This study is derived from 10262972 numbered, "The Role of Personal Knowledge Management on the Effects of Self-Leadership to Transformational Leadership: A Study on the Public Healthcare Managers" titled doctorate thesis of İpek Eroğlu under the supervision of Prof. Dr. Nüket Saracel defended on 30.06.2021 in the 2020-2021 academic year at the Business Administration Department of the Graduate School of the Institute of Graduate Studies of Doğuş University.

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INTRODUCTION

In the present era called the information age, also known as the digital age, healthcare managers have to deal with many challenges besides trying to adapt to the rapidly changing micro and macro-environment affected by the pandemic. Currently, digitalization and hybrid work ecosystem are on the rise requiring healthcare managers to effectively use self knowledge management tools to lead themselves and be able to lead their staff members by inspiring, encouraging and motivating them transforming their staff members creating value for all.

Academic studies on leadership and leadership behaviors have been going on for centuries. In the past, as in today's organizations, leadership was and is a prominent concept in the organizational structure created by human communities and onwards. The characteristics of an individual play the major role in being accepted as a leader. Some of these features are innate; some are acquired and developed later. A leader can be defined as a person who can gather individuals in his reach around a goal, whose ideas and actions are followed by others, who can direct his followers, who can mobilize people, who unite and influence others. Leadership is shaped in an endless process consisting of individual work, education, learning and the accumulation of relevant experience (Bass & Riggio, 2006).

It is possible to classify the contemporary leadership theories from three perspectives: Leadership as a process; leadership as a combination of personality traits; leadership as specific behaviors or, more commonly, leadership skills. Leadership is not a "one size fits all" phenomenon. It is important to consider and adapt the most matching leadership style for the sake of organizations, situations, groups and individuals. Amongst the many leadership styles the concept of self-leadership defines the practices and development steps in the process of gaining personal vision by influencing people to control their own thoughts and actions. In its simplest definition, selfleadership is the process of influencing oneself, not the others. In the self-leadership approach, the individual manages his or her own behavior to reach the current standards and goals. Evaluating the standards, setting new standards or editing or changing the existing ones are behaviors peculiar to such leaders (Vansandt & Neck, 2003). The concept of self-leadership, which was presented as an alternative to traditional leadership styles by Manz and Sims in their article published in 1980, was developed by Charles Manz (1986) in the following years. This approach argues that although it has been shown that leadership behavior is often influenced by external forces, actions are controlled by internal rather than external forces (Manz, 1986). The selfleadership approach is defined as a process of selfinfluence in which the individual acts to perform the behavior, action or task he/she aims by providing the necessary direction and motivation on his/her own (Manz, 1986).

In today's world, where access to information is almost unlimited with the possibilities offered by advanced technology both the individuals and the institutions can achieve their self-leadership gains by making use of their ability to manage their personal or institutional knowledge in order to pave the way for change and development at the stage of strategic decision-making by the help of transformational leaders within the scope of the unpredictability that appears as an output of the current chaotic (Toduk, environment 2014). The term transformational leadership was first used by sociologist JV Downton (1973) in his book "Rebel Leadership: Commitment and Charisma in a Revolutionary Process". The definition transformational leadership with its political and ethical elements beyond Weber's (1947) charismatic leadership concept was in the book "Leadership" by political scientist James MacGregor Burns (1978). According to Burns, transformational leadership is the situation where leaders get results in a dynamic interaction process that motivates each other with their followers in line with common needs and goals. Bass (1985) put forward a measurable model based on Burns (1978)'s concept of transformational leadership and suggested the Multidimensional Leadership Scale as a measurement tool. The Multidimensional Leadership Scale is an inventory prepared to measure different leadership styles, different leadership behaviors and their results. On the measurement of transformational leadership behaviors and practices, the scales of Posner and Kouzes (1990) and Podsakoff et al. (1990) have been used in research for many years. Since it is a widely used measurement tool, the Multidimensional Leadership Scale, which was reconsidered by Bass and Avolio (1990), has also been developed in different versions with long and short forms, in which the leader evaluates himself and the followers evaluate the leader (Bass and Avolio, 1995). Transformational leadership is to inspire followers to stick to a common vision and common goals for a business or a unit, encouraging them to become innovative problem solvers through coaching and mentoring; it is also addressed in a framework that encompasses developing followers' leadership capacities through both challenge and support. It was and Avolio (1990)stated by Bass transformational leadership consists of four main dimensions: idealized influence, inspirational motivation, intellectual stimulation, and personalized attention. The Multidimensional Leadership Scale has 5 different versions containing 36, 45, 50 or 90 items used to measure leadership style and behaviors. Answering these forms requires a long time and effort. In order to overcome this difficulty, Carless, Wearing and Mann (2000) developed a new scale called Global Transformational Leadership Scale (GTL) based on the transformational leadership study of Podsakoff et al. (1990). However there are a limited number of studies using these scales in the healthcare sector although personal contribution, personal knowledge management and leadership are vital components of the tasks and duties often requiring case specific performances.

The term of "personal knowledge" was first used by Polanyi (1958) and the term "Personal Knowledge Management" (PKM) was first used by Frand and Hixon (1999) in a study. Although PKM has been in the background of knowledge management since the early days, the relationship between personal and organizational effectiveness has long been overlooked. One of the most well-known predecessors of PKM is Personal Information Management (PIM) (Jones & Teevan, 2007), which comes from research in librarianship and document management, as well as information tools and software for personal productivity. Contemporary PKM, on the other hand, focuses on how individuals can become productive knowledge workers. PKM is a general structured process for consciously managing data and transforming it into useful information (Avery et al., 2001). Personal Knowledge Management processes have been defined by many authors. Frand and Hixon (1999)search/find: naming/classification; review/evaluation; integration/association. and Efimova (2005) developed the competency model that includes three processes: ideas, individuals and communities/networks. Wright (2005) developed the PKM competencies model that includes four processes: cognitive competencies, information competencies, social competencies, and learning and development competencies. Zuber- Skerritt (2005) developed a model of PKM values and actions that includes seven processes; advancement of learning and knowledge, cooperation, trust, respect and honesty, imagination and a vision of excellence, openness, non-positivistic beliefs and success. Avery et al. (2001) introduced the PKM skills model consisting of seven basic skills: information acquisition, information evaluation. information organization. cooperation around information. information analysis, information presentation, and information security.

Thus the quality of the public healthcare services are closely related to the professional knowledge workers

in each and every organization. Public health services have a multi-stakeholder structure that includes preventive health services, curative health services, rehabilitative health services and health promotion services critical for human life. In this multistakeholder structure, many public and private institutions and organizations play a role in the production and delivery of services in the health system. In our country the umbrella organization of this structure is the Ministry of Health. The main task planning, organization, direction and supervision of health services in Turkey belongs to the Ministry of Health. Ministry of Health is also the most comprehensive health services provider in our country. The Ministry of Health fulfills its administrative duty at the provincial level through Provincial Health Directorates. Provincial Health Directorates are responsible for the effective and efficient execution of the Ministry's provincial level services. Provincial Health Directorates and District Health Directorates operating under the Provincial Health Directorate in each province are responsible for ensuring that all public and private health institutions and organizations provide and supervise the delivery of health services in line with the plans of the Ministry, and the execution of health-related works and procedures. Thus, as each healthcare professional has strategic importance for the ongoing healthcare activities at all levels each individual healthcare knowledge worker has to lead oneself and gain the knowledge to lead others.

Although there has been an increasing interest in leadership and knowledge management in the academic community in recent years, the studies conducted are on the dimensions of leader, follower and organizational relationship. As a result of the literature review done in academic databases, it has found that the relationship between self-leadership and transformational leadership or personal knowledge management was researched in separate studies and there was no publication in the field of healthcare services. Thus, this study being the first research on the topic will set an example and contribute to further research.

The research was carried out with the aim of determining the relationship between self-leadership perceptions and transformational leadership perceptions of employees working in managerial positions in the public healthcare sector and to reveal the mediator role of personal knowledge management in the effect of self-leadership on transformational leadership.

MATERIALS AND METHODS

2.1. Study Design

This research is a relational survey model to examine the mediating role of personal knowledge management in the relationship between selfleadership and transformational leadership perceptions in healthcare professionals. Relational screening model is a model that describes and determines the pattern or the relationship between two or more variables shows the degree of relationship between the variables and the effect of the variables on each other (Creswell, 2018; Karasar, 2018). In the study, transformational leadership was determined as the dependent variable, self-leadership as the independent variable and personal knowledge management as the mediator variable. Structural equation modeling (SEM) is used to test the relationships between variables defined as dependent, independent and mediator and the accuracy of the model created based on the theoretical framework.

The Ethics Committee of Doğuş University has granted 02.09.2019 dated and 22716164-050.06/15 numbered ethical approval for this research study.

2.2. Study Population

The universe of the research consisted of managers working in the public healthcare sector within the borders of Istanbul between the years 2019 and 2021. This study was carried out with the executive staff of 39 District Health Directorates, 11 Presidency and 75 Public Hospitals affiliated to the Istanbul Provincial Health Directorate who gave consent to participate in the study. Since it was possible to reach the entire population, a sample population was not selected.

The population of the research consisted of the managers of public health institutions in Istanbul. The Research Ethics Committees of each public health institution in İstanbul evaluated the proposal of this research study and reported back to the Provincial Health Directorate of İstanbul. The Provincial Health Directorate of İstanbul has granted 17.12.2019 dated and E.1964 numbered approval for this research study. It was assumed that the main population to be contacted in line with the research is suitable for the research universe and that the submitted data collection forms are answered honestly and impartially.

2.3. Data Collection

Research data were collected from the primary data source through a questionnaire as a quantitative data collection tool. Three parts of the questionnaire used in the research include the scale statements created with the inventories adapted into Turkish, and the fourth part includes questions for collecting demographic information. The sections of the questionnaire are categorized as follows: demographic information form, self-leadership inventory,

transformational leadership inventory, and personal knowledge management inventory.

On the demographic information form, there are eleven statements that the participants were expected to answer which are gender, age, marital status, education status, total length of service in the current position, working years with present colleagues, service time in the health sector, total length of employment, profession, position title and the number of people managed.

In this study, Abbreviated Self-Leadership Scale (ASLQ) is used to determine the self-leadership perception levels of healthcare managers. Houghton and Neck (2002) carried out confirmatory studies of the Self-Leadership Scale (SLQ), developed by Anderson and Prussia (1997), and the Revised Self-Leadership Scale (RSLQ) version was created. The scale, which was originally in English, was translated and adapted into Turkish by Tabak (2013). Houghton et al. (2012) developed a short version of the RSLQ, which includes 35 statements, called the Abbreviated Self-Leadership Scale (ASLQ), which consists of 9 statements, for ease of application. Cronbach's alpha coefficient of ASLQ indicates the reliability level of the scale as 0.73 (Houghton et al., 2012). The scale, which was originally in English, was translated and adapted into Turkish by Şahin (2015). Likert-type scaled inventory which is a one to five point scale prepared for this study was used. Based on the transformational leadership study of Podsakoff et al. in 1990, the Transformational Leadership Scale named Global Transformational Leadership Scale (GTL) prepared by Carless et al. (2000) as a short form consisting of 7 statements is used. Cronbach's alpha coefficient of GTL indicates the reliability level of the scale of 0.93 (Carless et al., 2000). Likert-type scaled inventory which is a one to five point scale prepared for this study was used. A Personal Knowledge Management Inventory Scale developed from the studies and scales of Muhammed et al. (2011) and Tseng and Fan (2011) is used. The Cronbach's alpha coefficients of the dimensions of both scales are above 0.80, indicating the level of reliability of the scale (Muhammed et al., 2011; Tseng & Fan, 2011). The scale developed for the study includes information information gathering, sharing, information production, information application and information storage dimensions of Personal Knowledge Management. In order to evaluate the 5 subdimensions of Personal Knowledge Management with 9 statements, the Likert-type scaled inventory, which is a one to five point scale prepared for this study, was used.

2.4. Data Analysis

After obtaining permission from the researchers who developed the Self-Leadership Scale and Transformational Leadership Scale, language, content

and construct validity studies were carried out by creating Turkish versions. The Personal Knowledge Management Scale was newly created for this study, using two different external studies in English. After the necessary permissions obtained from the researchers who developed the original scales the Turkish version of PKM Scale has developed.

The original Transformational Leadership scale, which was in the structure of the evaluation of others scale, was converted into a self-assessment format and validated. The original Self-Leadership and Personal Knowledge Management scales, which were in the forms of self-evaluation scales, were converted into an assessment format for others and validated.

Validation studies of scale language compatibility, content validity, time consistency and self-other evaluation scales of this research were carried out successfully. The analysis of the research data was made with the SPSS 26 program and it was studied with a confidence level of 95%. Frequency (n) and percentage (%) for categorical (qualitative) variables, mean (x), standard deviation (ss), minimum and

maximum statistics for numerical (quantitative) variables are given. For the validity of the scales, exploratory and confirmatory factor analyzes were performed and their reliabilities calculated. Pearson correlation (Spearman correlation test-retest analysis), independent groups t test, one-way ANOVA, Wilcoxon test, Kendall W coefficient were used in the study. In addition, Structural Equation Modeling was used to test the model.

This study is limited to the questionnaire form prepared to collect information and the literature related to the subject available to the researcher. The findings obtained from the research are limited to the public healthcare professionals of the province of Istanbul. Research data is limited to the time frame of the study. Research data is limited to the data obtained from employees in public healthcare institutions during the study period. The data of the research is limited to the opinions of the research participants. The findings of the research are limited to the scope of the scales used in the research.

RESULTS

The findings of the study are presented below in the form of tables, figures and interpretations.

57.3% of the respondents are female, 76.0% are married, 43.5% are 40-50 years old, 65.9% are graduate students, 98% of them are managers of 1-20 people. 47.2% of the respondents have been working with their colleagues for 2-5 years, 78.2% have been working for 0-10 years, 52.9% have been working for 0-10 years in total, 47.1% have been working with their colleagues for 0-10 years. In the distribution of occupations and job status it is seen that most of the respondents are physicians with 32.8% and nurses with 18.7% as the second largest occupational group. Employees who were in charge of the units participated in the survey at the highest rate (78.7%). Self-evaluation of Self-Leadership, Transformational Leadership scales are found to be highly reliable, Personal Knowledge Management scale is very reliable. Evaluating the managers' Self-Leadership, Transformational Leadership, Personal Knowledge Management scales are highly reliable. In total, selfevaluation and manager-evaluation total scales are highly reliable. Descriptive statistics of the scores calculated from the scales are given in Table 1.

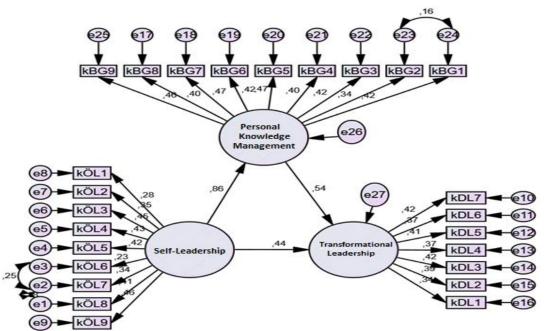
 Table 1. Reliability Analysis Results

DIMENSION	Number of Items	Cronbach Alfa
Self-Leadership (Self)	9	0,655
Self-Leadership (Manager)	9	0,818
Transformational Leadership (Self)	7	0,683
Transformational Leadership (Manager)	7	0,858
Personal Knowledge Management (Self)	9	0,855
Personal Knowledge Management (Manager)	9	0,910
Self Evaluation (Total)	25	0,857
Evaluation of the Manager (Total)	25	0,935

The skewness and kurtosis coefficients provided the reference range (+3:-3). There is a positive and statistically significant relationship between Self-(Self) score and Self-Leadership Leadership Transformational Leadership (Self), (Manager), Transformational Leadership (Manager), Personal Knowledge Management (Self), Personal Knowledge Management (Manager) scores (p<0.05). There is a positive, statistically significant relationship between Self-Leadership (Manager) score and Transformational Leadership (Self), Transformational Leadership (Manager), Personal Knowledge Management (Self), Personal Knowledge Management (Manager) scores (p<0.05). There is a positive, statistically significant relationship between Transformational Leadership (Self) scores and Transformational Leadership (Manager), Personal Knowledge Management (Self), Personal Knowledge Management (Manager) scores (p<0.05). There is a positive, statistically significant relationship between the Transformational Leadership (Manager) score and Personal Knowledge Management (Self) and Personal Knowledge Management (Manager) scores (p<0.05). There is a positive, statistically significant relationship between Personal Knowledge Management (Self) score and Personal Knowledge Management (Manager) scores (p<0.05).

In the study, the mediation analysis was done with Bootsrap analysis on SEM. Indirect, direct and total effects were examined. For the mediation effect, the indirect effect must be significant. The working model was tested with AMOS 21.0. According to the results of the SEM analysis, all of the acceptable fit criteria of the model established in self-evaluation and the manager were met. No items were removed from the scales. Research Model found to be compatible with data.

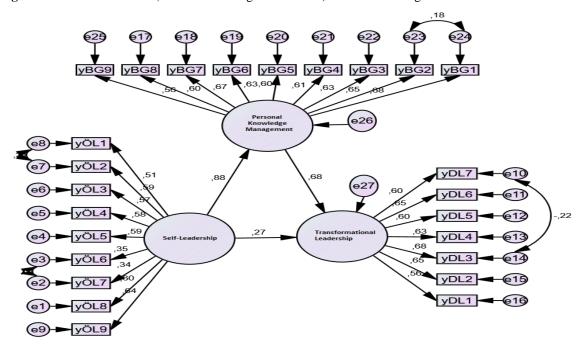
Figure 1. Self-Assessment Model Path Diagram



Self-Leadership in self-evaluation (β =0.856) affects Personal Knowledge Management positively and is statistically significant (p<0.05). Personal Knowledge Management (β =0,542) has a positive and statistically significant effect on Transformational Leadership (p<0.05). The indirect effect of Self-Leadership (β =0.464) on Transformational Leadership is positive and statistically significant (p<0.05). One of the methods used for a mediation effect is the VAF (Variance Accounted For) value. This value is

expressed as VAF<0.20 no mediation, 0.20 \leq VAF \leq 0.80 partial mediation, and VAF \leq 0.80 full mediation (Chang, et al., 2019; Yang, et al., 2019; Sarstedt , et al., 2014; Klarner, et al., 2013). Accordingly, the calculated VAF value for the model is 0.512. According to this result, Personal Knowledge Management partially mediates the effect of Self-Leadership on Transformational Leadership as shown on the Self-Assessment Model Path Diagram in Figure 1.

Figure 2. Other-Assessment (executive /manager evaluation) Model Path Diagram



Self-Leadership $(\beta=0.879)$ Personal affects Knowledge Management positively and is statistically significant (p<0.05). Personal Knowledge Management (β =0.694) has a positive and statistically significant effect on Transformational Leadership (p<0.05). The indirect effect of Self-Leadership (β=0.598) on Transformational Leadership is positive and statistically significant (p<0.05). One of the methods used to talk about a mediation effect is the VAF (Variance Accounted For) value. This value is expressed as VAF<0.20 no mediation, 0.20≤VAF≤0.80 partial mediation, and VAF≥0.80 full mediation (Chang, et al., 2019; Yang, et al., 2019; Sarstedt, et al., 2014; Klarner, et al., 2013). Accordingly, the calculated VAF value for the model is 0.690. According to this result, Personal Knowledge Management partially mediates the effect of Self-Leadership on Transformational Leadership as shown on the Other-Assessment (executive /manager evaluation) Model Path Diagram in Figure 2.

DISCUSSION

In this study, it was set out with the foresight that personal knowledge management might have the power to activate transformational leadership, a leadership style built on the need to give meaning to people's lives. From this point of view, the determination of self-leadership of the healthcare professionals in Istanbul, the determination of the effect of self-leadership transformational on leadership, exploring the partial mediator role of personal knowledge management in the managers who shape the future of the health sector, which is one of the leading sectors of strategic importance for the sustainability of human life have been a remarkable discovery.

In this research study, it was determined that the self-leadership and transformational leadership perceptions

of healthcare managers working in public institutions are high and that personal knowledge management has a partial mediator effect on the positive effect of selfleadership on transformational leadership. The data obtained from this study is important because it provides inferences as source information for the future training plans of managers who have the potential to show high performance in the management levels of healthcare institutions. Thus it is anticipated that positive reflections of selfleadership on transformational leadership through personal knowledge management will also have positive reflections on corporate organizational climate. work motivation and individual and organizational productivity.

CONCLUSION AND RECOMMENDATIONS

According to the results of this study, it has been shown to have a positive relationship between the leadership styles of managers in public healthcare their personal institutions and knowledge management. For this reason, this study will be a basis for further studies to be conducted in the future, in which the relationship between leadership, personal and organizational knowledge management and performance will be evaluated. The research is also important because it empirically proves the existence of the theoretical relationship between personal knowledge management and self-leadership and transformational leadership, and provides a general applicable model that has not been addressed in previous studies for public and private sector managers who want to improve themselves in the healthcare management.

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Conflict of Interest:

The authors declare that they have no conflict of interest.

Ethical Approval:

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