

Physiotherapist Knowledge of Key Performance Indicators (KPIs) in Saudi Arabian Center

Lujain Mushabbab Saad AlQahtani¹, Sharifah Hassan Yahya Ghazwani¹, Nawaf Soliman Hamad Alrabiah², Saud Mohammad Saud Alrabiah², Abdulrahman Saud Hadhrawi³, Khalid Mohammed Alotaibi⁴, Sami Ali Gubran Sahli⁵, Bandar Saleh Hamed Alwadaï⁶, Majed Mohammed Saleh Alyamani⁷, Mohammed Ibrahim Ali Rajhi⁸

¹Physiotherapist, Ahad Rufaidah General Hospital, Saudi Arabia.

²Therapy and Rehabilitation, PHC nukhaylan, Saudi Arabia.

³Specialist Physiotherapy, King Abdulaziz Hospital Jeddah, Saudi Arabia.

⁴Physiotherapist, Medical Rehabilitation Hospital- Madinah, Saudi Arabia.

⁵Physical therapy Technician, Ahad Rufaidah General Hospital, Saudi Arabia.

⁶Physiotherapist, Al Manhal Primary Health Care Center, Saudi Arabia.

⁷Technician-Physiotherapy, Medical supply management, Saudi Arabia.

⁸Technician-Physiotherapy, Samtah General Hospital, Saudi Arabia.

Received: 17.08.2024

Revised: 10.09.2024

Accepted: 24.10.2024

ABSTRACT

Background: Understanding Key Performance Indicators (KPIs) is important for physiotherapists since it makes their ability to identify the impact of their treatments on patient outcomes and to understand regions that need improvement. Al. Physiotherapists generally acknowledge KPIs as useful instruments for improving patient outcomes, many practitioners do not possess the necessary knowledge and skills. in order to successfully incorporate them into their clinical work.

The research objectives of this study are: To assess the knowledge of physiotherapists about KPIs at center in Saudi Arabia.

Research Design Cross-sectional descriptive research design was utilized to conduct this research

Participants: In this study, the 580 physiotherapists who operate in Saudi Arabia's public and private facilities are the target demographic. The study included 300 physiotherapists from Saudi . Physiotherapist Knowledge of Key Performance Indicators (KPIs) in Saudi Arabian . After proper information given to the participants, written informed consent was taken. Right to withdraw from participating in the research was assured. Confidentiality of data, and the privacy, anonymity of study subjects was maintained. Data collection was conducted through distributing the questionnaire to the study subjects at the study settings. Time needed to fill the previously mentioned questionnaire was about 45 minutes.

Results : most participants agreed with the KPIs statements . This indicates that the idea of KPIs at the Centre was known to 65% of the participants. In addition, 37% of participants strongly agreed that they were aware of the KPIs, compared to 4% who disagreed and 2% who disagreed. The majority of physiotherapists are adequately aware of the Key Performance Indicators, according to the results overall.

Conclusion: The outcomes of the current work found that the majority of physiotherapists have awareness regarding the utility of the KPIs in their physiotherapist services. The findings of this research work showed that the utility of the KPIs in the physiotherapist's departments improved the quality of physiotherapists' services, enhanced patient outcomes, and increased the level of job satisfaction of the physiotherapists. Moreover, the outcomes of this research work also indicated that in Saudi Arabia, the majority of the physiotherapists employed the KPIs and effectively evaluated their performance, ultimately improving the performance of the physiotherapists.

Keywords: performance, ultimately, outcomes, participants.

INTRODUCTION

Medical professionals and center are obliged to treat patients with excellence in compliance with a number of standards and directives. To guarantee that patients receive safe and efficient care, these standards and recommendations may be established by government agencies, regulatory bodies, or professional associations [Henker et al., (2018)]. They might also be expected to monitor and report on specific patient care components, such patient outcomes, to make sure they are fulfilling these requirements. Along with adhering to care

standards, center and physicians are also obliged to observe ethical principles, which include giving patients their informed consent before beginning treatment and respecting their autonomy and confidentiality [Housawiet al., (2020)].

Saudi Arabian physiotherapists, sometimes referred to as physical therapists, are medical specialists who help people move better and manage their discomfort. They employ a range of methods, including manual therapy, stretches, and exercises, to assist patients in their recovery from illnesses that impair movement or cause discomfort, as well as injuries and surgeries. From young children to elderly people, they may cure a variety of ailments, including arthritis, back pain, stroke, and sports injuries [Fanaei ,Zareiyan , Mirzaei (2022)].

Department, organization, or individual's performance can be measured and assessed using kpis. These indicators are picked in accordance with the organization's aims and objectives, and they are employed to monitor the advancement of those goals. In addition to being applicable at various levels, such as departmental, individual, or company-wide, kpis can be used in a number of contexts, including business, healthcare, and government [Grypdonck, L et al., (2014).]. They can also be used for employee motivation and reward, as well as for setting goals and standards [Dolatabadet al., (2022)].

Center may better understand their strengths and weaknesses, pinpoint areas for improvement, and make well-informed decisions to help them reach their objectives and give their patients high-quality treatment by establishing and monitoring KPIs. As part of their duties, physiotherapists may be required in some contexts to monitor and report on particular KPIs. For example, they can be expected to monitor patients' functional mobility, pain thresholds, or involvement in everyday activities. Physiotherapists can spot trends and patterns by monitoring these parameters and modifying their treatment regimens accordingly [Driver ,et al., . (2016)].

Understanding the perspectives of healthcare professionals in various departments regarding the creation of key performance indicators was emphasised by Lai et al. Since the KPIs depend on the organization's characteristics, each healthcare sector determines the KPIs based on their applicability and significance in measuring several factors. The KPIs of the healthcare organisation are unknown to the majority of healthcare providers [Gartner ,&Lemaire . (2022)]. Thus, this study emphasises the need for healthcare organisations to include doctors in the creation and implementation of hospital KPIs in order to improve their perception and comprehension and achieve better results.

Physiotherapists may be engaged in setting KPIs in addition to monitoring them. This entails collaborating with hospital managers and other healthcare team members to choose the most pertinent and significant indicators to monitor. Establishing goals and standards as well as creating mechanisms for monitoring and reporting on these metrics may also be part of it [DiCostanzo, et al. (2022))].

According to Burlea-Schiopoiu& Ferhati, ongoing KPI monitoring and analysis in healthcare organisations promotes a culture of continuous improvement. This culture makes it possible for healthcare professionals to identify issues quickly and develop plans to continuously improve patient care and overall healthcare delivery performance. KPIs are crucial metrics that help healthcare workers achieve their objectives and enhance their performance, to put it briefly. Urimubenshi et al. conducted another investigation. Research on stroke treatment has definitely demonstrated a strong correlation between KPIs and patient outcomes [Burlea-Schiopoiu , Ferhati . (2020)].

Physiotherapists should generally be aware of KPIs since they aid in understanding how their therapies affect patient outcomes and pinpointing areas that require improvement [Bird , Thompson , Williams (2016)]. Many physiotherapists lack the knowledge and abilities necessary to successfully apply KPIs in practice, despite the fact that the majority of them are aware of their significance and ability to enhance patient outcomes [Blanchette et al., . (2022)].

According to the study by Driver et al., physiotherapists understand the importance of using KPIs in their practice. They believed that monitoring the effects of their medicines, promoting evidence-based practice, and improving patient care all depended on the use of KPIs. The many types of KPIs utilized in physiotherapy practice were likewise well-known to the physiotherapists. Clinical, financial, and patient satisfaction KPIs are among these.

Furthermore, the study conducted by Driver et al. also identified a number of barriers that prevent the effective application of KPIs in physiotherapy practice. In addition to a lack of training and guidance on how to utilize KPIs effectively, these challenges included a lack of time, funds, and managerial support. Physiotherapists also reported that it was difficult to use KPIs effectively because they were frequently too complex and irrelevant to their work. The study also found that opinions among physiotherapists on the application of KPIs in physiotherapy practice varied. Some physiotherapists believed that KPIs were a useful tool for improving patient care and encouraging evidence-based practice.(Carini , et al., (2020))

Problem Statement

KPIs are crucial instruments for tracking and enhancing the caliber of healthcare services because they offer a way to gauge an organization's performance and pinpoint areas in need of development. To what degree Saudi Arabian physiotherapists are aware of these signs and their application in the hospital context is unclear, though.

This ignorance could make it more difficult for physiotherapists to support ongoing enhancements to patient outcomes and healthcare services. Additionally, the usage of KPIs is being pushed more and more as a way to improve openness and accountability in the healthcare industry.

The creation of a National Quality Council and the creation of a national indicator framework are two of the measures the Saudi Ministry of Health has implemented to encourage the use of KPIs in the healthcare system. It is unknown how well these activities have been carried out or whether they have been successful in raising physiotherapists' understanding and usage of KPIs. By investigating the present degree of awareness among physiotherapists regarding KPIs at Saudi Arabian center, this study seeks to close this knowledge gap. Along with identifying potential obstacles or enablers to the practical application of these measures, the report offers suggestions for raising the nation's physiotherapists' understanding and usage of KPIs.

Policymakers and medical professionals looking to improve patient outcomes and the quality of healthcare services in Saudi Arabia will find this information useful [10].

Research Questions

1. What is the level of knowledge of physiotherapists about KPIs at center in Saudi Arabia?

Research Objectives

The research objectives of this study are:

1. To assess the knowledge of physiotherapists about KPIs at center in Saudi Arabia.

METHODOLOGY

Research Design

Cross-sectional descriptive research design was utilized to conduct this research

Participants

In this study, the 580 physiotherapists who operate in Saudi Arabia's public and private facilities are the target demographic. The study included 300 physiotherapists from Saudi Arabia's private and public centers as a convenience sample. Targeting participants for the data gathering process involved the use of convenient sampling.

Inclusion Criteria

They currently working physiotherapists in private and public center in Saudi Arabia. Saudi and non-Saudi physiotherapists.

Study Tools

It consisted of the following parts:

1. Socio-demographic Characteristics: Socio-demographic characteristics refer to the individual attributes and characteristics of a population, such as age, gender, race/ethnicity, education level, income, occupation, and marital status. These factors can be used to describe and understand a population's social and economic status and can play a role in shaping attitudes, behavior, and health outcomes. Socio-demographic information is commonly used in research and policy analysis, as well as in marketing and demographics.

Physiotherapist Knowledge of Key Performance Indicators (KPIs) in Saudi Arabian it was developed based on the literature review.....It assess knowledge of Physiotherapists about KPIs from the perspectives of physiotherapist at Saudi Arabia responses were used five point Likert scale

Data collection

After proper information given to the participants, written informed consent was taken. Right to withdraw from participating in the research was assured. Confidentiality of data, and the privacy, anonymity of study subjects was maintained. Data collection was conducted through distributing the questionnaire to the study subjects at the study settings. Time needed to fill the previously mentioned questionnaire was about 45 minutes.

Data Analysis

Data is assessed by employing statistical software, including SPSS V 24. The data cleaning and coding were done, which is used to change the data from qualitative to quantitative form. Data coding aids in transforming judgment-based data into a numerical and more coherent form. The data was cleaned, which aided in eliminating the outliers and extraneous data from the gathered data set. Data

RESULTS

This research work is related to finding the awareness of physiotherapists about KPIs at center in Saudi Arabia. According to Table 1, 27.3% of the participants were younger than 29 years old, with a mean (SD) of 35.18±07.29, whereas one-third of the study participants were in the 29–39 age range. Males make up over half (52%) of the participants. In relation to position, the findings show that 47% of participants were junior physiotherapists, 22% were department leaders for physiotherapists, and 24% were senior physiotherapists. 40

percent of participants have between one and five years of experience, 32 percent have between six and ten years, 14 percent have less than a year, 14 percent have more than ten years, and 1 percent did not answer this question, according to the results.

Table 1: Frequency distribution personal professional work related data

Socio demographic data	No (300)	Frequency (%)
Age (In Years)		
Less than 30 Years	82	27.3
30-39 Years	107	36
40-50 Years	75	25
More than 50 Years	35	11.7
Mean ± SD		35.18±07.29
Gender		
Female	152	50.3
Male	148	49.7
Current Job Position		
Head of Physiotherapy Department	67	22.3
Senior Physiotherapist	75	24
Junior Physiotherapist	160	46.7
Experience		
1-5 years	124	40.3
6-10 years	97	32.3
Less than 1 year	41	13.7
More than 10 years	39	13

Table 2: Frequency distribution of studied physiotherapist of their knowledge of KPIs

According to Table 2's data, most participants agreed with the claims. This indicates that the idea of KPIs at the Centre was known to 65% of the participants. In addition, 37% of participants strongly agreed that they were aware of the KPIs, compared to 4% who disagreed and 2% who disagreed. The majority of physiotherapists are adequately aware of the Key Performance Indicators, according to the results overall.

Awareness of Physiotherapists about KPIs						
1. I am Familiar with the Concept of KPIs at Center.	4 (1.3)	8 (2.7)	10 (3.3)	164 (54.7)	111 (37.0)	3 (1.0)
2. KPIs are used Effectively in Evaluating the Performance of Physiotherapy Departments in Center.	2 (0.7)	4 (1.3)	19 (6.3)	176 (58.7)	98 (32.7)	1 (0.3)
3. KPIs can be used to Improve the Quality of physiotherapy Services in Center.	1 (0.3)	3 (1.0)	9 (3.0)	170 (56.7)	117 (39.0)	0 (0.0)
4. KPIs can be Used to Improve Communication and Collaboration between Physiotherapy Departments and other Departments in Center.	1 (0.3)	7 (2.3)	15 (5.0)	151 (50.3)	126 (50.3)	0 (0.0)
5. I believe that the use of KPIs can lead to better patient outcomes.	1 (0.3)	4 (1.3)	10 (3.3)	149 (49.7)	135 (45.0)	1 (0.3)
6. I find it Easy to Access and Understand the KPIs Used in my Workplace.	4 (1.3)	15 (5.0)	21 (7.0)	142 (47.3)	114 (38.0)	4 (1.3)
7. I have Regular Access to the Data and Reports Associated with the KPIs used in my Workplace.	4 (1.3)	17 (5.7)	25 (8.3)	142 (47.3)	110 (36.7)	2 (0.7)
8. I believe that the KPIs used in my workplace accurately reflect the performance of the Physiotherapy Department.	0 (0.0)	9 (3.0)	17 (5.7)	135 (45.0)	139 (46.3)	0 (0.0)
9. It is important for physiotherapists to be aware of and use KPIs in their Practice.	0 (0.0)	4 (1.3)	7 (2.3)	161 (53.7)	124 (41.3)	4 (1.3)
10. I believe that the use of KPIs can lead to improved job satisfaction among physiotherapists.	0 (0.0)	4 (1.3)	16 (5.3)	154 (51.3)	124 (41.3)	2 (0.7)

11. I believe that the KPIs used in my workplace are relevant to the physiotherapy practice.	0(0.0)	5(1.7)	16(5.3)	139(46.3)	136(45.3)	3(1.0)
13. I believe that the use of KPIs leads to improved efficiency in the physiotherapy department.	0(0.0)	2(0.7)	15(5.0)	158(52.7)	122(40.7)	3(1.0)
14. I am aware of the specific KPIs currently used to assess the performance of physiotherapy departments in center.	1(0.3)	10(3.3)	16(5.3)	160(53.3)	113(37.7)	0(0.0)
Total KPIs Weighted Mean \pm SD	4.57\pm0.80					

Table 3:Relation between personal work related data and physiotherapist knowledge of KPIs

Table 3 pointed that there were significant difference regarding age(F= 0.554 , P=0.002*)and position(F= 0.113 P=0.002) while there were not significant difference regarding sex (T= 9.784)and marital status (F= 3.117, P=0.065)

F= ANOVA Test T= Student T Test * Statistically significant at ≤ 0.05

Socio-demographic characteristics	Mean score percentage of physiotherapist knowledge of KPIs	Test of significance
	Mean% \pm S. D	
Sex		
▪ Male	70.71 \pm 9.85	T= 9.784
▪ Female	58.65 \pm 8.46	P= 0.052
Age		
▪ 25-	58.20 \pm 9.98	F= 0.554 P=0.002*
▪ 35-	60.25 \pm 7.15	
▪ 45-	60.21 \pm 6.98	
▪ 55-	59.09 \pm 6.22	
▪ 65+	61.50 \pm 4.61	
Position		
▪ Head of physiotherapist department	59.03 \pm 10.02	F= 0.113 P=0.002
▪ Senor physiotherapist	59.57 \pm 9.66	
▪ junior physiotherapist	58.70 \pm 6.88	
Place of residence		
▪ 1-5 years	59.14 \pm 8.41	T= 0.356 P=0.701
▪ 6-10 years	59.40 \pm 10.72	
▪ Less than 1 year	57.38 \pm 7.23	
▪ More than 10 years	55.38 \pm 7.76	
Marital status		
▪ Single	59.19 \pm 10.74	F= 3.117 P=0.065
▪ Married	60.15 \pm 7.38	
▪ Widowed	66.25 \pm 1.76	
▪ Divorced	62.50 \pm 0.00	

DISCUSSION

Quality-based care is a hallmark of physical therapy. Treatment effectiveness must be evident to patients, managers, employers, and funders. Quality indicators (QIs) are tools that specify the minimum acceptable standard of practice. They are used to measure health care processes, organizational structures, and outcomes that relate to aspects of high-quality care of patients. Physical therapists can use QIs to guide clinical decision making, implement guideline recommendations, and evaluate and report treatment effectiveness to key stakeholders, including third-party payers and patients.

The purpose of this study was to determine how well-informed Saudi Arabian physiotherapists were regarding KPIs. According to the current study's findings, most physiotherapists are aware of the value of KPIs in their practice. The research's conclusions demonstrated that the use of KPIs in physiotherapist departments raised employee job satisfaction, improved patient outcomes, and raised the calibre of services provided by physiotherapists. Furthermore, the research findings also showed that most Saudi Arabian physiotherapists used KPIs and successfully assessed their own performance, which eventually enhanced the physiotherapists' performance.

According to the findings of the earlier study conducted by Driver et al., physiotherapists are sufficiently aware of the need of using KPIs in their practice [24]. They believed that monitoring the effects of their medicines, promoting evidence-based practice, and improving patient care all depended on the use of KPIs.

On the other hand, Henker et al.'s study revealed that doctors at hospitals in underdeveloped countries are also becoming more conscious of quality assurance [28].

Furthermore, physiotherapists can assess the effectiveness of therapy measures with KPIs, according to Pishnamazzadeh et al. [19]. Similarly, the results of Ishak's study showed that the hospital had good patient outcomes, with the majority of patients saying that receiving physiotherapy had improved their functional level and decreased their discomfort [18]. This illustrates the effectiveness of the hospital's physiotherapy facilities in aiding stroke victims' recovery.

On the other hand, Driver et al.'s study also identified a number of barriers that prevent the effective application of KPIs in physiotherapy practice [24]. In addition to a lack of training and guidance on how to utilise KPIs effectively, these challenges included a lack of time, funds, and managerial support. Physiotherapists also reported that it was difficult to use KPIs effectively because they were frequently too complex and irrelevant to their work. On the other hand, Westby et al. showed that the use of QIs leads to improved patient health outcomes and increased access to healthcare [25].

One of the primary purposes of quality indicators in physical therapy, according to Abdel-Razik et al., is to ensure that patients receive care that is both evidence-based and tailored to their specific requirements [13]. Quality indicators are used to evaluate the appropriateness of physical therapy treatments, analyse patient outcomes, and monitor adherence to clinical practice guidelines. In a similar vein, Bird et al. conducted a study, and the results showed that the implementation of primary access physiotherapy services significantly reduced the wait times for individuals seeking treatment for musculoskeletal conditions [23].

CONCLUSION

The outcomes of the current work found that the majority of physiotherapists have awareness regarding the utility of the KPIs in their physiotherapist services. The findings of this research work showed that the utility of the KPIs in the physiotherapist's departments improved the quality of physiotherapists' services, enhanced patient outcomes, and increased the level of job satisfaction of the physiotherapists. Moreover, the outcomes of this research work also indicated that in Saudi Arabia, the majority of the physiotherapists employed the KPIs and effectively evaluated their performance, ultimately improving the performance of the physiotherapists.

According to the current study's findings, most physiotherapists are aware of the value of KPIs in their practice. The research's conclusions demonstrated that the use of KPIs in physiotherapist departments raised employee job satisfaction, improved patient outcomes, and raised the calibre of services provided by physiotherapists. Additionally, the study's findings showed that most Saudi Arabian physiotherapists used KPIs to assess their performance, which helped them perform better overall.

Practical implications

Physical therapists must comprehend the importance and function of QIs in the provision of healthcare, as well as the techniques used to create or identify, gather, report, and apply QIs, in order to participate in both discipline-specific and team-based QI initiatives. It is recommended that physical therapists help identify and apply QIs in their clinical settings or healthcare organizations.

REFERENCES

1. Abdel-Razik MSM, Rizk HI, Zein MM, Abdel-Megeid SMES, Abd El Fatah SAM. (2023) Promoting the culture of KPIs (KPIs) among primary health care staff at health district level: An intervention study. *Eval Program Plann.* 96:102188.
2. Ahmed MA, Ahmed U, Rizwan N, Tauqeer S. (2020) Assessing The Services Quality: Expectations and Perceptions of Patients Receiving Physiotherapy Services at Teaching Hospitals in Lahore, Pakistan. *Khy Med Uni Jou.* 12(2):143-8
3. Almana RS, Alharbi A. (2022) Door to Disposition Key Performance Indicator in Three Saudi Arabian Hospitals' Emergency Departments during COVID-19 Pandemic. *Healthcare*, 10(11):2193. Alasmari S, Williams S, Rich N, Rea D. (2021) Sustainability of Quality Improvement Initiatives within the Saudi Ministry of Health Hospitals: An Institutional Overview. *Saudi Journal of Health Systems Research*, 1(1):3-10.
4. Bird S, Thompson C, Williams KE. (2016) Primary contact physiotherapy services reduce waiting and treatment times for patients presenting with musculoskeletal conditions in Australian emergency departments: an observational study. *J Physiother.* 62(4):209-14
5. Blanchette MA, Mior S, Thistle S, Stuber K. (2022) Developing KPIs for the Canadian chiropractic profession: a modified Delphi study. *Chiropr Man Therap.* 30(1):31.

6. Burlea-Schiopoiu A, Ferhati K. (2020) The Managerial Implications of the KPIs in the Healthcare Sector: A Cluster Analysis. *Healthcare* 9(1):19.
7. Carini E, Gabutti I, Frisicale EM, Di Pilla A, Pezzullo AM, et al. (2020) Assessing hospital performance indicators. What dimensions? Evidence from an umbrella review. *BMC Health Serv Res.* 20:1-3.
8. DiCostanzo DJ, Kumaraswamy LK, Shuman J, Pavord DC, Hu Y, et al. (2022) An introduction to KPIs for medical physicists. *J Appl Clin Med Phys.* 23(8):e13718.
9. Dolatabad AH, Mahdiraji HA, Babgohari AZ, Garza-Reyes JA, Ai A. (2022) Analyzing the KPIs of circular supply chains by hybrid fuzzy cognitive mapping and Fuzzy DEMATEL: evidence from the healthcare sector. *Environment, Development, and Sustainability.*
10. Driver C, Kean B, Oprescu F, Lovell GP. (2016) Knowledge, behaviors, attitudes, and beliefs of physiotherapists towards the use of psychological interventions in physiotherapy practice: a systematic review. *DisabilRehabil.* 39(22):2237-49.
11. Gartner J, Lemaire C. (2022) Dimensions of performance and related KPIs addressed in healthcare organizations: A literature review. *Int J Health Plann Manage.* 37(4):1941-52.
12. Hochberg, M. C., Altman, R. D., April, K. T., Benkhalti, M., Guyatt, G., McGowan, J., ... & Tugwell, P. (2012). American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. *Arthritis care & research, 64(4)*, 465-474.
13. Fanaei S, Zareiyani A, Mirzaei SA. (2022) Determining the KPIs of Human Resource Management of Military Hospital Managers; A TOPSIS Study. *BMC Prim Care.* 24(1):47.
14. Grypdonck, L., Aertgeerts, B., Luyten, F., Wollersheim, H., Bellemans, J., Peers, K., ... & Hermens, R. (2014). Development of quality indicators for an integrated approach of knee osteoarthritis. *The Journal of rheumatology, 41(6)*, 1155-1162.
15. Housawi A, Al-Amoudi A, Alsaywid B, Lytras M, bin Moreba YH, et al. (2020) Evaluation of KPIs (KPIs) for Sustainable Postgraduate Medical Training: An Opportunity for Implementing an Innovative Approach to Advance the Quality of Training Programs at the Saudi Commission for Health Specialties (SCFHS). *Sustainability, 12(19)*:8030.
16. Henker H, Fox-Lewis S, Tep N, Vanna D, Pol S, et al. (2018) Healthcare workers' perceptions of an organizational quality assurance program implemented in a resource-limited setting: a qualitative study. *Health PromotPerspect.* 8(3):179-186.
17. Ishak MH. (2022) Assessment of Facilities Key Performance Indicator (KPI) of Physiotherapy Spaces Toward the Stroke Patients' Recovery in Putrajaya Hospital. *RMTB.* 3(1):797-808.
18. Locatelli P, Faccini R, Moser R, Gastaldi L, Corso M, et al. (2014) Effectively Introducing Mobile Solutions in Hospitals: The Importance of Process Perspective and KPIs. *IEEE Xplore.*
19. Lai JHK, Hou H, Chiu BWY, Edwards D, Yuen PL, et al. (2022) Importance of hospital facilities management performance indicators: Building practitioners' perspectives. *Journal of Building Engineering.* 45:103428.
20. Meenu J. (2018) Role of Physiotherapist in Critical Care Situations: Recent Perspective. *Journal of Cardiac Critical Care TSS.* 2(1).
21. Mousavi SF, Apornak A, Pourhassan MR, Raissi S. (2021) Key performance indicators of HSE in the hospital management system during corona virus pandemic. *Jou Ind Sys Eng.* 14(1), 279-91.
22. M, Neeleman-van der Steen CWM, Hendriks EJM, Nijhuis-van der Sanden MWG, Braspenning J. (2014) Evaluating quality indicators for physical therapy in primary care. *Int J Qual Health Care.* 26(3):261-70.
23. Pang J, Xu H, Ren J, Yang J, Li M, et al. (2021) Process mining framework with time perspective for understanding acute care: a case study of AIS in hospitals. *BMC Med Inform Decis Mak.* 21(1):354.
24. Pishnamazzadeh M, Sepehri MM, Ostadi B. (2020) An Assessment Model for Hospital Resilience According to the Simultaneous Consideration of Key Performance Indicators: A System Dynamics Approach. *Perioperative Care and Operating Room Management.* 20:100118.
25. Peter, W. F., Van der Wees, P. J., Hendriks, E. J. M., de Bie, R. A., Verhoef, J., De Jong, Z., ... & Vliet Vlieland, T. P. M. (2013). Quality indicators for physiotherapy care in hip and knee osteoarthritis: development and clinimetric properties. *Musculoskeletal care, 11(4)*, 193-202.
26. Westby MD, Klemm A, Li LC, Jones CA. (2015) Emerging Role of Quality Indicators in Physical Therapist Practice and Health Service Delivery. *Phys Ther.* 96(1):90-100. 27.