



Rethinking the Impact of Hospital Strategy and Market Competition on the Use of Performance Measurement Dimensions in Private Healthcare Organizations: Evidence from Jordan

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ABSTRACT

With the ever-evolving waves of healthcare, these advanced synergies occur between Hospital Strategy (HS) and Market Competition (MC), and they significantly impact the use of Performance Measurement Dimensions (PMDs). The research would rather focus on the newly arising questions regarding hospital strategy, market competition, and the use of PMDs in the Jordanian private hospitals. Established empirically on a sample of 187 managers from 69 private hospitals in Jordan, in this article, PLS-SEM is utilized to extensively test the inherent relationships. The findings of this article conclusively demonstrate that market competition and hospital strategy both possess statistically significant impacts on the use of PMDs. These results ensure the reality of market competition and hospital strategic choices in healthcare organization operating performance, financial performance, and overall performance in the health sector in Jordan. The article then suggests creating more attention towards developing and coming up with the use of PMDs with a positive relationship with overall healthcare performance.

Keywords: Hospital Strategy; Market Competition; Performance Measurement Dimensions; PLS-SEM

JEL Classifications: I11; M41; L1; C38

1. BACKGROUND OF THE ARTICLE

The use of PMDs has generated significant interest due to their critical role in organizational growth, facilitating well-informed decisions, and accomplishing exceptional performance across different fields. The increased interest is echoed in researchers' and practitioners' interest, as indicated by citations of Menhat et al. (2023) and Van Elten et al. (2021). The emphasis on the critical role recreated by PMD in the actuality of organizational transformation and effective decision-making has placed more emphasis and research on such systems to enable better outcomes (Otley, 2016; Pires and Alves, 2022).

In healthcare organizations, the use of PMDs gains some salience (Lachmann et al., 2016; Nuti et al., 2018). The health care sectors are dynamic environments with complicated processes, shifting patient needs, and regulatory requirements in constant motion (Rosen et al., 2018). Based on this, there has been great concern by both practitioners and academicians in the healthcare field to develop PMDs that reflect the diverse faces of healthcare, from clinical outcomes and satisfaction of patients to cost-effectiveness as well as overall quality of care (DeGroff et al., 2010; Gu and Itoh, 2016; Smith, 2009).

The healthcare facility in developing nations tends to lag far behind others in more developed nations and is usually overwhelmed with tremendous challenges (World Health Report, 2019; Drechsler and

Jutting, 2007). This affects the quality of care given to all parties directly. There are various explanations for the relatively sluggish growth and functioning of the hospital sector in developing countries, poor performance of the hospital, absence of finance, inappropriate infrastructure, and shortage of expert physicians are major hindrances to development (Alolayyan et al., 2011; Al-Saa'da et al., 2013; Hamdan et al., 2022). Also, developing countries are plagued by political and economic instability (El-Jardali & Fadlallah, 2017; Hillbom, 2012), thus deterring the growth and expansion of the hospital sector.

In perceiving the reason behind the poor performance of healthcare organizations, it is clear that amongst the primary reasons is the absence of the correct PMDs (Van Elten et al., 2019). Lack of proper use of PMDs comes from the common problem of the lack of a standard and agreed-upon PMD framework to evaluate hospital achievement (Arah et al., 2006; Gu & Itoh, 2016; Smith, 2009). To surmount this barrier, a uniform framework for the different PMDs of healthcare performance should be established. This will consolidate healthcare PMDs and improve the provision of healthcare and results (Aburumman et al., 2023). For accomplishing this purpose, a group of PMDs can be proposed on a multi-dimensional level, such as financial, effectiveness, flexibility, sustainability, and efficiency (Aburumman et al., 2023).

Quality of care provision and organizational goal achievement greatly depend on the performance measurement dimensions of a private healthcare organization (Giannini, 2015; Shazali et al., 2013; Smith, 2009). Through the inclusion of performance measure dimensions, meaningful information on how effective and efficient the healthcare operations are can be obtained (Cinaroglu and Baser, 2018; McDermott and Stock, 2007). Internal factors do not entirely shape adoption and implementation of such dimensions. Rather, they are contingent upon various situational contingencies (Lee and Yang, 2011). According to the contingency theory, the use of PMDs can be determined not solely by exogenous factors but also by higher-level organizational attributes (Langfield-Smith, 1997; Chenhall, 2003). The objective of this article is to explore contingency factors that differ in accordance with circumstances, for instance, hospital strategy and market competition, that impact the use of PMDs in private healthcare institutions in Jordan.

2. LITERATURE REVIEW

2.1. Hospital Strategy

The identification of hospital strategy as a significant contingent variable in the implementation of the use of PMDs in management accounting is predicated on the fact that various organizational strategies necessitate specific performance measures to effectively monitor and measure performance (Abernethy and Lillis, 2001; Ferreira and Otley, 2009; Otley, 2016; Tuomela, 2005). The strategy entails the overall direction and goals of an organization, for instance, its value proposition, target market, and competitive position (Dubelaar et al., 2005; Morris et al., 2005).

PMDs are also utilized as a means of establishing the degree to which an institution meets its strategic goals (Wongrassamee et al., 2005; Mashovic, 2018). It is, nevertheless, required that the

choice of PMDs must be consistent with the unique objectives and priorities set by the strategy of the organization (Henri, 2006; Smith and Smith, 2007; Glykas, 2013). Therefore, if a company is adopting a cost leadership, it will give top priority to such controls that measure cost-effectiveness as well as the efficiency of operations. But when an organization is pursuing a differentiation strategy, it will take particular interest in product innovation and customer satisfaction measures (Agyapong et al., 2020; Elahi et al., 2014; Hallgren and Olhager, 2009). But previous research calls this assumption into question by disclosing circumstances in which hospital strategy and performance measurement dimensions don't align (Braam and Nijssen, 2004; Micheli et al., 2011).

2.2. Market Competition

Market competition puts a lot of pressure on private hospitals to perform and stand out from the crowd (Barik and Rout, 2021; Hamdan, 2017). Although greater competition makes hospital services more efficient if it is successful, hospitals located in more competitive markets are able to gain greater control over cost inflation in addition to being profitable (Carey et al., 2011). Contingency theory-based research highlights that competition has a strong influence on the use of PMDs within organizations, and that organizations need to adapt their strategies and practices to the particular contextual variables with which they are faced (Chenhall, 2003; Haldma and Lääts, 2002; Lee and Yang, 2011).

PMDs are vital in imparting the kind of behavior that leads to ongoing improvement in areas of competitiveness like flexibility, customer satisfaction, and productivity. For developing appropriate culture towards continuous improvement in areas of priority such as these, setting clear alignment, providing routine monitoring, quantifying goals, carrying out big-scale data analysis, and spearheading knowledge sharing are necessary (Lynch and Cross, 1995; Scott and Tiessen, 199).

They are key to enabling firms to achieve a very high degree of competitiveness by offering an appropriately designed framework for measuring and monitoring performance in relation to strategy. Through PMDs, organisations can make informed and evidence-based decisions, identify areas for improvement, and manage their interventions to achieve competitive objectives (Chenhall, 2005; Kaplan and Norton, 1992; Mohamed et al., 2008).

Hoque et al. (2001), Zaman and Yoon (2016) indicated that organizations in competitive markets like to designate a range of PMDs as a way of ensuring their competitive standing. Designating a range of PMDs, organizations that function in competitive markets are in a position to have complete and total insight of their performance (Hoque et al., 2001; Hussain and Hoque, 2002; Lynch and Koshland, 1991).

Chong and Rundus (2004) argue that widely presumed that heightened market competition leads to greater focus on financial measures. Firms competing in highly competitive markets have learned to realize the importance of enhancing financial measures and implementing sufficient PMDs. Financial success pursuit, comparison with competitors, stakeholders' satisfaction, strategic resource allocation, cost efficiency, promoting accountability,

and decision-making based on facts are all factors that make financial measures a priority (Hussain and Hoque, 2002; Lee and Yang, 2011).

Nevertheless, recent research offers a counter to this view because it enlightens us with situations when non-financial measures gain greater prominence under the situation of high competition (Hoque, 2005; Hussain and Gunasekaran, 2002; Ittner and Larcker, 1998). These writings are contrary to the general view and present the case that firms operating under the situation of high competition can afford to assign greater, or at least equal, significance to non-financial performance as to financial performance to effectively measure their performance and retain their competitive advantage.

The application of the use of PMDs extend a sustainable framework of feedback to organizations so that they can efficiently handle external competition, using both measures, organizations can have a complete view of competitive position and enhance the areas where they specialize in order to be one step ahead in the marketplace (Chapman, 1997; Otley, 1999; Kaplan and Norton, 1996a; Zhang et al., 2013). This coming together allows businesses to obtain insightful information regarding their performance, make sound decisions, and undertake actions that enhance their competitive edge.

2.3. Multidimensional Performance Measurement Dimensions

The concept of PMDs relies on the utilization of multiple instruments, methodologies, and protocols in collecting, assessing, and ascertaining data that pertains to an organization's effectiveness (Munir and Baird, 2016; Santos et al., 2002). By following a structured approach, organizations are able to assess their performance, establish areas of improvement, and make knowledgeable decisions to enhance ongoing improvement along with strategic goals.

Empirical research by management accounting researchers has validated the use of both financial and non-financial measures of PMDs. Franco-Santos et al. (2012) particularly stress the use of both measures to gain an integrated view of organisational performance. The experience data in Hoque (2014), Ittner et al. (1997), and Lee and Yang (2011) attest to a mirror of the importance of integration of financial as well as non-financial measures. With an integrated approach, organizations can develop a comprehensive performance management system that aligns with their strategic vision, guides decision-making, and facilitates continuous improvement.

Renowned writers such as Kaplan and Norton (1992) and Ittner and Larcker (1998) have stressed the increasing importance of the use of financial measures in PMDs. Financial measures enable firms to measure their financial success, profitability and cash flows, as well as their financial stability and growth trends over time. Although financial metrics are widely regarded as a primary indicator of performance in most nations (Upadhaya et al., 2014), there is a growing awareness of the necessity to incorporate non-financial metrics to more comprehensively measure organizational performance (Franco-Santos et al., 2012). The application of

financial and non-financial metrics allows organizations to not just assess their finance but also the key non-financial drivers of long-term success and competitiveness (Kaplan and Norton, 1992).

In order to accommodate their overall strategic objectives, private healthcare institutions ought to encompass financial and non-financial measures. The balanced method should comprise dimensions such as fiscal effectiveness, operating effectiveness, flexibility, and viability (Aburumman et al., 2023).

3. RESEARCH DESIGN, MATERIALS AND METHODS

3.1. Research Design

The article utilized a quantitative approach in investigating the relationship and impact of hospital strategy and market competition on the use of PMDs in private hospitals in Jordan. A field test was executed in the survey questionnaire that provided demographic information about the respondents and variables to represent the degree to which contingency variables influence the use of PMDs. The literature available was adapted and placed within the research setting.

3.2. Data Collection Procedure

In accomplishing our article goals, we gathered data using personally administered questionnaires. The researcher made personal visits to all 69 private hospitals and met with the financial departments/accounting departments' managers and administration departments (or their deputies) to request approval to distribute the questionnaires to the respondents. Jordan's private hospitals were more than willing to cooperate.

The questionnaires of the surveys were sent to each private hospital department head or manager (or his/her deputy) to distribute according to pre-determined numbers (three managers per hospital, including department heads of accounting, financial managers, and administration managers) who are familiar with the use of PMDs. Moreover, the respondents were demand to come back and complete the survey questionnaires within a specified time frame, and follow-up procedures were conducted by the researcher to remind them to complete the questionnaires within a certain time frame.

This procedure provided a very large number of participants and allowed them to garner the responses within a specific time duration. Thus, we sent three questionnaires to every private hospital ($3 \times 69 = 207$) and received 187 completed ones, which provided us with a 90.3% response rate. This rate has been deemed acceptable, providing more than sufficient data for further analysis (Williams et al., 2004).

3.3. Measurement of Variables

- **Hospital Strategy:** The construct consists of 6 items that are designed to assess various hospital strategy aspects. This dimension was measured using a scale developed from Al Sawalqa et al. (2011) and guided by Porter's (1980) strategy design. The respondents were directed to agree or disagree with the extent they filled the space provided in a five-point

Likert scale.

- **Market Competition:** The construct consists of 4 items representing various dimensions of market competition. The market competition construct measured in this article was borrowed from the scales of Al Sawalqa et al. (2011) and Hoque (2004). Participants were demand to respond utilizing a five-point Likert scale.
- **Use of Performance measurement dimensions:** This article operates on several items, including financial measures, efficiency, effectiveness, flexibility, and sustainability measures. The scale contains 25 instruments as discussed below:

Financial measures dimensions (5 instruments): Measured through the indicators formulated by Buathong and Bangchokdee (2017) and Grigoroudis et al. (2012). Efficiency measures dimensions (5 instruments): Tested based on the measures formulated by Gu and Itoh (2016), Khalifa and Khalid (2015), and Scotti and Stinerock (2002). Effectiveness measures dimensions (5 instruments): Measured through the measures formulated by Al-Hawary (2012), Gu and Itoh (2016), and Scotti and Dolinsky (1997). Flexibility is measured along dimensions (5 instruments): Rated on the scale of Chahal et al. (2018). Sustainability is measured along dimensions (5 instruments): Measured along parameters by Zhou et al. (2013).

4. VALIDITY AND RELIABILITY INSTRUMENT

4.1. Validity

The validity is commonly agreed upon in literature (Bryman and Bell, 2015). To try to achieve the content validity of the instrument applied in this article, four experts were contacted. The experts included two university academics and two practitioners working in Jordanian private hospitals. The specialists were requested to provide the appearance, vocabulary, structure, and type of items to be used in measuring the constructs under study. To provide content validity, the literature was reviewed carefully so that the measurement scale captured the relevant features of the construct in full detail.

To establish the validity of the measurement model, Hair et al. (2016) advise two critical aspects: loadings and (AVE). In accordance with these suggestions, as evident in this paper's Table 1, all the items have a loading score of more than 0.82. This illustrates the preservation of all the items while ensuring the convergent validity of the measurement model, as also recommended by Hair et al. (2016). Further, Table 1 illustrates that the AVE values of this paper are 0.753-0.863, higher than 0.50 recommended by scholars like Henseler et al. (2009) and Hair et al. (2016). Therefore, the AVE values obtained in this paper validate the measurement sufficiently.

4.2. Reliability

According to a detailed definition by Hair et al. (2010), reliability means the consistency of measurements of a particular construct across different events and time intervals. It means that, if used multiple times, the instrument will give the same scores. The

reliability of the instrument in this current research was proved through the Cronbach's alpha coefficient method. This is a measure of the internal consistency and reliability of the measures of the instrument.

As Hair et al. (2006) assert, a Cronbach's alpha coefficient of reliability of 0.60 or more is reasonable. Reliability of measures employed in the current article is provided in Table 2. For this

Table 1: Validity scores of variables

Variable	Items	Loadings	AVE
HSA			
Differentiation strategy	DS1	0.901	0.811
	DS2	0.885	
	DS3	0.916	
Cost Leadership	CL1	0.939	0.863
	CL2	0.904	
	CL3	0.943	
Market competition	MC1	0.840	0.753
	MC2	0.884	
	MC3	0.846	
	MC4	0.899	
PMDs			
Financial	FI1	0.894	0.829
	FI2	0.898	
	FI3	0.930	
	FI4	0.932	
	FI5	0.899	
Efficiency	EI1	0.892	0.782
	EI2	0.911	
	EI3	0.887	
	EI4	0.905	
	EI5	0.824	
Effectiveness	EE1	0.898	0.786
	EE2	0.910	
	EE3	0.862	
	EE4	0.910	
	EE5	0.849	
Flexibility	FL1	0.919	0.817
	FL2	0.917	
	FL3	0.912	
	FL4	0.903	
	FL5	0.868	
Sustainability	SU1	0.918	0.831
	SU2	0.868	
	SU3	0.949	
	SU4	0.920	
	SU5	0.901	

Table 2: Reliability scores of variables

Variable	No. of items	Cronbach's alpha
Differentiation	3	0.884
Cost Leadership	3	0.920
Market Competition	4	0.891
Environmental Uncertainty	5	0.948
Financial	5	0.930
Efficiency	5	0.932
Effectiveness	5	0.944
Flexibility	5	0.949

current article, Cronbach's alpha coefficients were between 0.844 to 0.939 for all variables, which meant that the instrument utilized was consistent and reliable.

5. DATA ANALYSIS AND RESULTS

Data analysis entails the analysis of data with the aid of analytical and statistical methods in a bid to respond to questions and make the research aims more robust (Sekaran and Bougie, 2016). In the scenario of the current article, the most popular (SPSS) version 25, and SmartPLS version 3.2.9 were utilized for the data analysis (Ringle et al., 2005).

5.1. Demographic Background of the Respondents

The demographic variables researched in this article provide significant information about the distinctive traits of the participants. These variables encompass a list of features that provide significant information about the participants' background and profile. Table 3 presents the demographic characteristics of the respondents, including gender, age, marital status, years of experience, beds, academic qualifications, and job titles. Some of the demographic variables researched are gender, age, marital status, years of experience, beds, academic qualifications, and job titles. By analyzing these demographic factors, it is possible to form a holistic picture of the respondents for there to be a good appreciation of their diverse nature within the perimeters of the article.

5.2. Descriptive Statistical

By employing descriptive statistics, which include simple data tendencies such as mean, mode, and median, as well as measures of dispersion like variance, standard deviation, and range (Creswell, 2012), end-to-end visibility of the interaction between respondents and questionnaire items is gained (Sekaran and Bougie, 2016). Hence, the current article employed descriptive analysis in reporting a description and summary of notable dataset features from the participants' point of view, across variables ranging from Differentiation Strategy (DS) to Cost Leadership (CL), Market Competition (MC), Financial (FI), Efficiency (EI), Effectiveness (EE), Flexibility (FL), and Sustainability (SU). The constructs' mean, standard deviations, maximum and minimum are presented in Table 4.

Table 4 shows the mean and standard deviation significances captured for the constructs. All variables were rated on a five-point scale. A scrutiny of the ratings indicates that differentiation strategy leads the pack with a highest mean value of 3.78 and a standard deviation value of 1.22. This is closely observed by cost leadership with a mean value of 3.64 and a standard deviation value of 1.33. The second is efficiency with a mean of 3.452, observed by a standard deviation value of 1.11, then flexibility with a value of 3.45 and a standard deviation value of 1.25. Sustainability has a mean of 3.37 and a standard deviation value of 1.33, whereas effectiveness has a mean of 3.35 and a standard deviation value of 1.16. In contrast, the financial has a mean of 3.25 and a standard deviation value of 1.23. Perhaps as an interesting twist, the lowest mean is that of market competition at a relatively low 3.22, with a standard deviation value of 1.17.

Table 3: Characteristics of respondents

Variable	Category	Frequency	Percent (100%)
Gender	Male	126	67.4
	Female	61	32.6
Age category	31-35	24	12.8
	36-40	63	33.7
	41-45	48	25.7
	46-50	32	17.1
	More than 51 years	20	10.7
	Single	51	27.3
Status	Married	128	68.4
	Divorce	5	2.7
	Widow/Widower	3	1.6
	More than 31 years	17	9.1
Number of previous working years	6-10 years	13	7.0
	11-15 years	23	12.3
	16-20 years	58	31.0
	21-25 years	45	24.1
	26-30 years	31	16.6
	More than 31 years	17	9.1
Academic qualifications	Diploma	22	11.8
	Bachelor	92	49.2
	Higher diploma	19	10.2
	Master	50	26.7
	Ph.D.	4	2.1
	Head of Accounting Department	67	35.83
	Finance Managers	49	26.20
	Administrative Managers	49	26.20

Table 4: Descriptive statistics for the dimensions

Variable	Minimum	Maximum	Mean	Standard Deviation
Differentiation	1	5	3.7825	1.10673
Cost Leadership	1	5	3.6435	1.33649
Market Competition	1	5	3.2299	1.17200
Environmental Uncertainty	1	5	3.2588	1.23835
Financial	1	5	3.4524	1.11704
Efficiency	1	5	3.3594	1.16419
Effectiveness	1	5	3.4503	1.25048
Flexibility	1	5	3.3743	1.33577

Table 5: Structural model

Constructs	R ²	Adj.R ²	f ²	Q ²
Use of PMDs	0.263	0.247	-	0.202
Hospital strategy	-	-	0.043	-
Market competition	-	-	0.101	-

The conclusions show that the cost leadership and differentiation strategies were the dominant ones employed by Jordanian private hospitals, while applying a cost leadership strategy was not dominant. Among the surveyed Jordanian private hospitals, the application of dimensions for measuring performance was widespread, as shown by the high mean values achieved in all items. This illustrates the core role played by these dimensions for private hospitals.

From the viewpoint of the respondents, it is evident that nearly all the variables have gone beyond the optimal implementation

Table 6: Assessment structural model path coefficient

No.	Hypotheses	Path coefficient	Standard error	T-value	P-value	Confidence interval		Decision
						LL	UL	
H ₁	HS→PMDs	0.197	0.077	2.560	0.005**	0.071	0.321	Supported
H ₂	MC→PMDs	0.319	0.081	3.934	0.000***	0.181	0.448	Supported

HSA: Hospital Strategy, MC: Market Competition, PMD: Performance Measurement Dimensions. ***P<0.001; **P<0.01; *P<0.05; One tailed Hypothesis; 5,000 bootstrap samples

level. Surprisingly, the majority of them have even gone beyond the satisfactory level, reflecting the positive understanding of the current implementation level by the respondents.

5.3. Structural Model

Only after the validity and reliability of construct outcomes are established should the outcomes for structural models be confirmed next, as suggested by Hair et al. (2021). Testing of a structural model in this research reflects establishing its predictability and checking if variables correspond as suggested by Hair et al. (2016).

This article provided an assessment of the inner model by observing key indicators, which consist of R-squared (R²), Q-squared (Q²), and effect size (f²). To prove the sufficiency of the model, the blindfolding procedure was used in combination with cross-validated redundancy, in a way that all the Q² values were above 0. The outcome, as Table 5 illustrates, is an R² equal to 0.263 for the use of PMD constructs, and a Q² equal to 0.202 for the same constructs. Additionally, when considering Cohen's effect size f² (Cohen, 1988), all of the values in Table 5 for significant pathways were well above the recommended cut-off value, indicating large effect sizes.

Following the guidance of Hair et al. (2016), bootstrapping was applied in the study in order to establish the path coefficients' significance. This was done by taking 5000 bootstrap samples and running the 187 cases in the article. There was no sign change, as might be expected, and this also provides additional credibility to the stability and reliability of the results obtained. Table 6: Prepare an overview of the values of the path coefficients, t-values, p-values, and bootstrap confidence intervals.

The results collected through the study indicated an effective and positive relationship between hospital strategy and the use of PMDs. Specifically, the estimated path coefficient of the hypothesized link was 0.197 with a T-value of 2.560 and a P-value of 0.005. This clearly shows confirmation of the proposed hypothesis, confirming the statistically significant and positive association between hospital strategy and the use of PMDs. Similarly, the analysis also reflected a significant impact of market competition on the use of PMD in the workplace environment. The estimated path coefficient of this hypothesis was 0.319, its T-value was 3.934, and its P-value was 0.000. The results exhibit robust support for the hypothesized theory of a statistically important relationship between market competition and the use of PMDs.

6. CONCLUSION

The use of PMDs in private healthcare organizations is subject

to the influence of a myriad of variables, including hospital strategy and the competitive market. Recent literature contradicts traditional assumptions and emphasizes the need to understand the complex relationship between these variables and their influence on the use of PMDs. Private healthcare organizations must adopt various perspectives and aim for the multidimensionality of performance measures to advance their decision-making and across-the-board performance improvement. By doing so, they would be in a position to match the dynamic nature of the healthcare context satisfactorily and align their PMDs with strategic goals and competitive realities.

The findings indicate that organizations that possess a clear and defined hospital strategy and a perfect understanding of market competition are likely to adopt a balanced and holistic PMDs. Through performance measures combined, hospitals are capable of efficiently measuring various elements of their performance, like financial, efficiency, effectiveness, flexibility, and sustainability. This wide range of evaluation enables them to improve their performance continuously, resulting in continuous improvement and efficiently attaining strategic objectives.

Overall, the article emphasizes that Jordanian private hospitals should put effort into developing healthy and strong hospital strategies with an emphasis on addressing market competition in an attempt to successfully tap into the use of PMDs. The article adds appropriate assistance to the understanding in the form of insights into the determinants that shape practices of measuring performance in the healthcare sector. Apart from that, it offers policymakers and hospital managers real-world implications for making informed choices to deliver maximum use of PMDs within their organizations. Private hospitals can enhance their competitiveness, patient outcomes, and make their PMDs more responsive to the evolving healthcare scenario by adopting the recommendations of this article.

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