

READINESS FOR CHANGE AND EFFECTIVENESS IN POLISH HOSPITALS

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Purpose: The aim of this paper is to attempt to analyze how readiness for change affects effectiveness in the Polish health sector. Theoretical and practical aspects of readiness for change, effectiveness, and determinants of the hospital system will be presented and research results will be published.

Design/methodology/approach: The survey study Likert scale-based with a telephone-assisted was conducted in a group of 100 Polish hospitals. Factor analysis, summary scales and regression calculations were performed.

Findings: The level of readiness to change positively influences hospital effectiveness. The level of readiness for change and effectiveness are independent of the level in the hospital network.

Research limitations/implications: Questions were provided by heads of medical administration, medical managers, and independent administrative specialists answered questions. The subjective opinions of medical and administrative staff may differ.

Originality/value: The article is addressed to researchers interested in the health care sector, as well as those interested in the relationship between readiness for change and effectiveness. For practitioners, hospital management may provide management guidance regarding organizational support.

Keywords: effectiveness, readiness for change, hospital, health care.

Category of the paper: Research paper.

1. Introduction

The healthcare sector is subject to many changes, ranging from regulatory, structural, technological and funding changes to the dramatic functioning of a pandemic or workforce crisis. Changes in healthcare are often rapid and implemented overnight without adequate implementation. Progressive crises, such as the shortage and ageing of medical staff, the impact of Covid-19 on the health of the population and the trauma of medical staff due to overwork, and the uncertainty of the system can create considerable resistance to change in the health care

system. It is therefore important to understand both personal and organizational readiness for change. This article presents the results of empirical research on the impact of readiness for change on effectiveness in Polish hospitals and examines how the level of the hospital network affects the level of readiness to change. The research is designed to answer 3 research hypotheses developed from the literature review. The aim of the article is to investigate whether there is a positive relationship between readiness for change and effectiveness and between level of hospital network, readiness for change and effectiveness in Polish hospitals.

The article is aimed at health care researchers and practitioners, as well as those interested in the relationship between readiness for change and effectiveness. The results of the conducted research are a contribution of management and quality science, but may also be of interest to health sciences due to the sector in which the research was conducted. To date, no similar research has been conducted in Poland and the results may shape further research into hospital network eligibility and readiness for change.

2. Hospitals in Poland

A hospital is a medical entity defined in Ustawa o działalności leczniczej, whose task is to provide medical services, health promotion, teaching and research. However, most often it provides hospital services consisting in providing 24/7 and comprehensive health services, i.e. diagnosis, treatment, care and rehabilitation (Ustawa..., 2011). Most hospitals are public, highly politicized institutions, and the rules of their operation are strictly defined by laws, regulations and orders of the President of the Narodowy Fundusz Zdrowia. Hospitals perform a social function by securing the health needs of the population, which often results in their lack of profitability (Raczyńska, 2023). Hospitality is the most cost-intensive element of the public health care sector - in the assumptions for 2023, expenses in this area are to constitute 50% of the National Health Fund's budget (NFZ Plan Finansowy, 2022). In response to many problems in the hospital system, the so-called hospital network reform was introduced, dividing them into first-, second- and third-degree hospitals, pediatric hospitals, pulmonology hospitals, oncology hospitals, nationwide hospitals and non-network hospitals (Ustawa..., 2017). First-level hospitals in simple terms correspond to district, second-level provincial, third-level clinical hospitals and institutes - it is assumed that the higher the level, the more extensive and specialized the structure and the more complex the procedures (Rabiej, 2020). In 2022, the qualifications of hospitals were revised, but without major changes for facilities. This reform was the last systemic change in the health care sector.

3. Effectiveness

Effectiveness is a difficult concept to define, although colloquially it is easy to understand its essence. It is worth quoting here a simple definition by E. Głodziński, who defines effectiveness as the relation of achieved results to used inputs. As M. Kulikowska-Pawlak points out, effectiveness can be analyzed in quantitative terms that are reflected in the relation of effects to satisfied needs in a given period, taking into account the relation of resources to effects (Kulikowska-Pawlak, 2010). P.A. Samuelson and W.D. Nordhaus also point to a soft factor relevant to the level of effectiveness which is satisfaction (Samuelson, Nordhaus, 2012). Relating efficiency strictly to the health care sector, it can be defined as a set of coordinated activities taking place at different levels of reference bringing about an improvement in the health of patients through the provision of medical and preventive services (Raczynska, 2020). Effectiveness in health care is a perplexing concept because it will be understood differently by the doctor, differently by the patient, for whom the medical effect is the most important (medical case effectiveness), and for hospital managers, the micro effectiveness (of the treatment entity) will be crucial, while globally the whole system is assessed (macro level). These levels interpenetrate and are strongly dependent on each other (Rudawska, 2011). Methods of measuring effectiveness in the health sector can be divided into indicative, parametric and non-parametric (Sekula, Julkowski, 2017). A common method of assessing the effectiveness of healthcare entities is to use only financial measures, but it is very important here to also consider indicators specific to hospitality such as average length of stay, occupancy of hospital beds, operating theatre, stock of medicines, excess workload, etc. (Kujawska, 2017). Based on a study in the Netherlands, entities should use between five and ten key performance measurement indicators in order for the measurement itself to be effective (Dyduch, Kozłowska, 2011). On the other hand, there are multi-criteria evaluation methods available, for example, the model proposed by K. Dubas based on M. Bielski's multi-criteria evaluation of effectiveness, which contains five dimensions of effectiveness and nine criteria, taking into account financial, technical, qualitative, behavioral and developmental dimensions (Dubas, 2011). Parametric methods for the health sector usually distinguish between SFA (stochastic frontier analysis) and DEA (data envelopment analysis). SFA analyses are usually applied to economic aspects, while DEA is linked to operational research (Lampe, Hilgers, 2015). Assessing system efficiency dedicated measures are QALYs, DALYs and CEAs - these measures are translated from medical cases to the system and allow for macro-level comparisons (Feng et al., 2020). So many effectiveness measurement methods provide a full range of options for managers making it impossible to identify a universal tool. The choice of performance measurement method should be tailored to the entity being evaluated, as well as the purpose of the analysis being performed.

4. Readiness for change

Change is common in the turbulent environment the health sector is no doubt. Change sometimes occurs too quickly and adaptation is required within an unrealistic timeframe (Beasley et al., 2021). Properly managing the change process requires treating it as an opportunity, not just a threat (Walas-Trębacz, 2009). Organizational change is defined as the transition of an organization from one state to another that is different from the previous one. It means making adjustments and modifications between goals, objectives and resources over a period of time. Change can be a consequence of an internal or external situation. A well-conducted change process should bring benefits to the organization and its stakeholders (Szeliga-Rudzka, Mazurkiewicz, 2018). Change can involve a range of issues from external circumstances (e.g. legal changes) to internal (equipment, work organization, etc.), but it always involves people. The capacity for organizational change depends on the individual attitudes of the employees involved in the change, their individual behavior, group behavior, resistance and commitment (Nowak, 2013). High readiness for change is possessed by organisations with a unique organizational culture created by top management that is open to continuous change, accepts risk and sees it as an opportunity for success, uses appropriate management methods and concepts, supports and works together with the rest of the team (Skalik, 2018). Among the factors cited as significantly influencing change readiness in the health sector are transparent communication, resource availability, lack of skill and training, reward system, recent trends in health care, top management and decision making, state of affairs, clarity of organizational mission and goals, interdependence among departments, technology advancement, organizational culture, and stress level and job security (Vaishnavi et al., 2019). Extremely important in terms of the above factors is leadership, with transformational leadership playing a key role (Shannon, 2021) and a supportive organizational culture characterised by trust, collaboration, safety, teamwork, supportive and motivating leadership, and employee participation in decision-making (Ellis et al., 2023). The properly managed change will be effective change with the potential to increase organizational effectiveness (Gilley et al., 2009). A high level of change readiness should therefore potentially result in higher efficiency for an organization operating in a changing environment. This hypothesis will be verified by the author's empirical research.

5. Research methods

The research questionnaire was developed on the base of the Hospital Change Readiness (HCR) Questionnaire tool (Pomare et al, 2020) and the effectiveness scale proposed by Jones and Van de Ven (Jones, Van de Ven, 2016) was modified for the Polish conditions. The questionnaire contained 10 questions about readiness for change and 5 questions about effectiveness, in addition to a metric. The questions in the metric related to qualification for the hospital network. The research sample was hospitals in Poland with a contract with the NFZ. According to the Główny Urząd Statystyczny, there were 899 general hospitals in Poland in 2021. The survey, the results of which will be discussed, was conducted from October 2022 to February 2023 and a sample of 100 hospitals was obtained. The survey was preceded by a pilot in 2021, where the number of hospitals surveyed was 11. The research was conducted in order to prepare a dissertation. The research method was a telephone-assisted survey addressed to hospitals, random sampling. The respondents were heads of medical units (so-called heads of departments), heads of administrative units and employees in independent non-medical positions. Level I hospitals accounted for 37% of the respondents, level II 27%, level III 13%, non-network hospitals 8%, and nationwide, oncology, pulmonology and paediatric hospitals a total of 15%. 94% of the hospitals surveyed were accredited representing a large over-representation to reality. 73% were ISO 9001 certified. 47% of the surveyed population was financially loss-making. The following research hypotheses were adopted:

H1: The higher the level of readiness for change the higher the level of performance.

H2: The higher the place in the hospital network the higher the level of readiness for change.

H3: The higher the place in the hospital network the higher the level of effectiveness.

The traditional approach, factor analysis, summed scales and regression (Ferguson, Takane, 2009) were used to verify the hypotheses. This approach allowed the assessment of relationships between variables.

6. Findings

Factor analysis indicates that both the constructs of readiness for change and effectiveness are consistent. Cronbach's alpha in readiness for change has a high reliability on the summative scale, while effectiveness has an acceptable level. Table 2 indicates test values where eigenvalue >1 and cumulative proportion >0.6 indicating 2 factors. LR test: independent vs. saturated: $\chi^2(45) = 540.00$ Prob $>\chi^2 = 0.0000$ Table 3 reports that factor loadings for Factor 1 are always greater in absolute value than Factor 2, meaning that all questions form a single construct. Tables 4 and 5 refer to the effectiveness construct. LR test: independent vs. saturated: $\chi^2(10) = 134.59$ Prob $>\chi^2 = 0.0000$

Table 1.*Measures to assess the quality of the measurement part of the model*

Item	Index	
	Readiness for change	Effectiveness
Cronbach alpha	0,889	0,745

Source: own development.

Table 2.*Principal-component factors for readiness for change*

Factor	Factors			
	Eigenvalue	Difference	Proportion	Cumulative
1	5.07788	3.61560	0.5078	0.5078
2	1.46228	0.64763	0.1462	0.6540
3	0.81465	0.22274	0.0815	0.7355
4	0.59191	0.04096	0.0592	0.7947
5	0.55095	0.11182	0.0551	0.8498
6	0.43914	0.08773	0.0439	0.8937
7	0.35141	0.02555	0.0351	0.9288
8	0.32586	0.09782	0.0326	0.9614
9	0.22804	0.07016	0.0228	0.9842
10	0.15788	.	0.0158	1.0000

Source: own development.

Table 3.*Factor loadings (pattern matrix) and unique variances for readiness for change*

What about	Factors		
	Factor1	Factor2	Uniqueness
Hospital will benefit from change	0.7225	-0.4886	0.2393
Legitimate reason for change	0.6637	-0.5706	0.2339
Change will improve	0.7957	-0.4436	0.1701
After change will be better	0.7883	-0.1350	0.3603
Adaptation after	0.7073	0.1165	0.4861
Will handle	0.6434	0.5422	0.2920
Personal relationships in work	0.6975	0.1036	0.5027
Long run	0.7435	0.2583	0.3805
After easier	0.7313	0.2934	0.3792
Better communication	0.6103	0.4604	0.4156

Source: own development.

Table 4.*Principal-component factors for effectiveness*

Factor	Factors			
	Eigenvalue	Difference	Proportion	Cumulative
1	2.69058	1.88659	0.5381	0.5381
2	0.80399	0.14089	0.1608	0.6989
3	0.66310	0.19637	0.1326	0.8315
4	0.46672	0.09111	0.0933	0.9249
5	0.37562	.	0.0751	1.0000

Source: own development.

Table 5.*Factor loadings (pattern matrix) and unique variances for effectiveness*

What about	Factors	
	Factor1	Uniqueness
quality	0.8137	0.3379
quantity	0.5359	0.7129
costs	0.7240	0.4758
health	0.7722	0.4036
competition	0.7878	0.3793

Source: own development.

To verify the relationship between readiness for change and effectiveness, regression calculations were applied. Based on its results, there is a positive significant relationship (***) $p < 0.01$) between readiness for change and effectiveness thus confirming hypothesis H1. The control variables were hospital types and other metric questions - in most cases the relationships are not statistically significant.

Table 6.*Regression*

VARIABLES	Ef_summ
Rfch_summ	0.291*** (0.110)

Note. The resistant standard error is indicated in brackets.

Source: own development.

To verify hypotheses H2 and H3, a T-Score was used. Table 8 compares the p-values and t-values - their results for the study conducted indicate that no pair has a significant difference, which means no significant relationship. Thus, the calculations allow us to refute H2 and H3 - the level in the hospital network does not affect either readiness for change or effectiveness.

Table 6.*Descriptive statistics*

variable	RfCh			EF		
	N	średnia	odch. St.	N	średnia	odch. St.
I level	37	4.762	0.980	37	4.919	0.791
II level	27	4.548	0.786	27	5.067	0.642
III level	13	4.808	0.717	13	5.385	1.139
pediatric	5	4.580	1.307	5	5.040	1.389
pulmonology	3	4.600	0.608	3	5.467	0.462
oncology	2	5.050	2.333	2	5.600	0.849
nationwide	5	4.220	0.622	5	5.400	0.283
no network	8	5.275	1.050	8	5.375	0.910
Together	100	4.716	0.922	100	5.116	0.829

Source: own development.

Table 7.
T-Score

Tests	RfCh		EF	
	t	p	t	p
I vs II	0.969	0.336	-0.824	0.413
I vs III	-0.178	0.860	-1.364	0.191
II vs III	-1.001	0.321	-0.938	0.363

Source: own development.

The results of the study allow H1 to be confirmed, while H2 and H3 were refuted. The assumptions of readiness for change that resulted from the literature studies were confirmed in the policy conditions. In contrast, the assumptions derived from the hospital network are not reflected in the light of the study. The place in the network does not influence either the effectiveness or the readiness for change of the surveyed group of Polish hospitals.

7. Discussion

Referring to H1 the higher the level of readiness to change the higher the efficiency, the results of the study can be considered to be in line with similar studies in the literature (Negm et al., 2021). Here, however, one should look for articles that understand the concept of effectiveness broadly, i.e. referring to productivity, outputs, outcomes rather than strictly efficiency. While there is not always a straightforward translation of the type the higher the level of readiness for change the better the effect, according to some researchers this is U-shaped (Helfrich et al., 2018). Readiness for change is often referred mainly to employee attitudes (Hameed et al., 2017), especially research in this area was conducted in health care during the covid-19 pandemic (Roemer et al., 2021). Readiness for change in research is often used as a mediator of the relationship between a given construct and effectiveness (Hariadi, Muafi, 2022). It is often associated with psychological research and the translation of readiness to change into organisational effectiveness is rarely reported in the literature, although the theoretical literature suggests the above conclusion. The hospital network is dedicated to the Polish health care system and its evaluation is carried out by the Ministry of Health. In the literature, it is usually assessed in terms of ensuring access to services (Mikos, Urbaniak, 2017) or funding (Sierocka et al., 2020). Similar results to the relationship between hospital location in the network and readiness for change were also obtained when comparing the level of maturity for change depending on the location in the hospital network. Process maturity and placement in a hospital network are not related (Raczynska, 2023). The study shows that readiness to change influences the effectiveness of Polish hospitals, while the level in the network is not significant for readiness for change. On this basis, it can be concluded that it should be important for hospital managers to maintain a high readiness for change. At the same time, this is an option available to all hospitals regardless of their location in the system,

as it does not affect the level of readiness for change or efficiency. It is therefore possible to universally apply tools to strengthen readiness for change regardless of the type of hospital. It is also a basis for further research, i.e. how to influence the level of change readiness in hospitals and how to keep it high. The research was limited by the number of hospitals and the limited number of respondents. These research can be repeated after a new classification into the network or a change in the system.

8. Final conclusions

The article highlights the importance of readiness to change in hospital efficiency indicating a positive relationship between readiness to change and efficiency. The research provides guidance for management practitioners as the findings may have practical application. The conducted research fits into the research gap being a basis for further research in the field of readiness for change in the health sector also at lower referral levels. The research on hospital networks can be further used for evaluation of the healthcare system.

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