SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2023
ORGANIZATION AND MANAGEMENT SERIES NO. 169

MODELLING OF PROFFESIONAL COMPETENCES IN HEALTH CARE UNITS – PRELIMINARY ASSUMPTIONS

Agnieszka KRAWCZYK-SOŁTYS[1*] , Laura PŁATKOWSKA-PROKOPCZYK[2]

[1] Opole University, Faculty of Economics; akrawczyk.soltys@uni.opole.pl, ORCID: 0000-0003-1575-3497
[2] Opole University, Faculty of Economics; lplatkowska@uni.opole.pl, ORCID: 0000-0002-8834-9615
* Correspondence author

Purpose: The aim of the article is to present the theoretical assumptions of the model of professional competencies in health care units. It was assumed that competences are a multidimensional concept and require an integrated approach that allows for the construction of a competency model that reflects their real complexity. A list of professional competencies will be presented, which will be subject to empirical verification in the course of future research by the authors in order to identify key competencies.
Design/methodology/approach: The proposed lists of professional competencies (six domains) was created and are based on the analysis of healthcare competencies models - the study of the literature - and the Authors' observations of the analyzed entities.
Findings: Presented model of professional competencies in health care units contains six domains with sub-competencies. The importance of assessing competences is undeniable. Competence recognition offers a way to develop workforce planning and career opportunities of practicing medical staff. Having an instrument that identifies existing competences and those that need to be acquired becomes significant for distinguishing the singularity of actions for a professional practice which is safe, humane and with no risk to the client, the medical staff or the health care organization.
Originality/value: An identification the professional competencies of health care units managers significantly shaping competences of such organizations especially relevant in pandemic time.

Keywords: professional competencies, modeling, health care units.

Category of the paper: Conceptual paper.

Introduction

The concept of competence became broadly known when American social psychologist David McClelland started using it at the turn of the 1960s and 1970s. He stated that knowledge contents were good predictors of academic performance, but not necessarily of job performance. According to McClelland the best predictors of outstanding on-the-job

performance were underlying, enduring personal characteristics that he called competencies. Furthermore competencies are constituted by knowledge and skills, as well as personal characteristics or self-concepts, traits and motives. His studies were oriented towards the effectiveness in reaching goals by people, employees in particular, as a result of their proper motivation (McClelland, 1973). Since then many definitions of competences have been formulated.

Currently, the role of competencies become more significant in the context of services market (Walsh, Beatty, 2007), mostly human-based services, such as health care services. Therefore there is a continuing interest in competences at organizational and at individual level. Yet the concept of competence is still difficult to be defined by researchers, theorists and managers (Sanchez, 2002). Additionaly it's hindered by the interchangeable use of the terms 'competences, competencies and competency' (Cooper et al., 1998). Table 1 presents different definitions for the term competence, according to various authors.

Table 1.
The concept of competence - background review

Author(s)	Year	Definition of competence
Boyatzis	1982	an underlying characteristic of a person' stating it could be motive, trait and skill
Prahalad and Hamel	1990	the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies
Nordhaug and Gronhaug	1994	work-related knowledge, skills and abilities
Sanchez et al.	1996	the ability to sustain the coordinated deployment of assets in ways that help a firm achieve its goals
Dooley	2004	Competency-based behavioural anchors defined as performance capabilities needed to demonstrate knowledge, skill and ability (competency) acquisition
Sturman	2005	It refers to a judgment about whether a person is able to provide informed consent
Van Der Vleuten and Schuwirth	2005	the ability to deal with a complex professional task, integrating relevant cognitive, psychomotor and affective skills
European Parliament and the Council of the European Union	2008	the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development
UK nursing practice, the Nursing & Midwifery Council	2008	the skills and ability to practice safely and effectively without the need for direct supervision
Sharpless and Barber	2009	the status or quality of being adequate or well qualified, demonstrates ability or may have a legal definition (that is, being legally qualified to take some action)

Competency may be defined in terms of underlying characteristics of people that are causally related to effective or superior performance in a job, generalizing across situations and enduring for a reasonably long period of time (Boyatzis, 1982). Therefore Boyatzis concentrated on individual domain. Some authors however consistently use 'competency' when referring to occupational competence (Sanchez et al., 1996). Definitions have become increasingly work based, vocational and applied in nature as the concept of competence has been adopted by managers and government policy makers. The idea of competence has even been removed from the individual domain and applied to 'the organization' in the form of 'core competence'. The term was coined as an important organizational resource that could be exploited to gain competitive advantage (Campbell, Sommers Luchs, 1997; Nadler, Tushman,

1999). In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy' (European Parliament Council, 2008). Given the difficulties in agreeing a definition of competence, it is perhaps surprising that the concept has been so widely adopted.

Several reviews have revealed that competence is closely related to performance, and that these concepts are associated with much confusion (Meretoja amd Isoaho, Leino-Kilpi, 2004).

This terminological confusion often reflects conflation of distinct concepts and inconsistent use of terms as much as different cultural traditions. However, some differences are attributable to different epistemological assumptions (Pate, Martin, Robertson, 2003) and the rationale for the use of competence often determines the definition. As claimed by Dooley et al competency can be considered as a subset of itself (Winterton, Delamare-Le Deist, Stringfellow, 2006). Then according to Sharpless and Barber many questions about competence remain unanswered, and these include several which are fundamental (e.g., what competence means, how best to measure it, and how it develops). This current lack of firm answers is likely due to the number of central theoretical issues that underlie the construct of competence (Sharpless, Barber, 2009). It is indeed surprising that the concept of competences has been adopted so widely given the difficulties in defining it. As the term "competence", often classified as a “fuzzy” concept, it is characterized by numerous approaches and schools dealing with this phenomenon. As a result, there is no single universally recognized definition of competence. However, among the components of competences mentioned in various terms, three are dominant: knowledge, skills and attitudes. Yet, they create 'flat' images and do not fully reflect what competence actually is. In response to contemporary challenges related to the use of competencies in everyday management practice, it becomes necessary to search for a multidimensional competence model.

Competency identification systems need to identify both – personal (professional and managerial) competencies and organizational competences (Boam, Sparrow, 1992). This article is focused on identification of the professional competencies of medical personnel and health care units managers. Healthcare systems are complex therefore, competent medical staff are essential to provide care of quality. The awareness and competences of the personnel engaged within health care organizations, including patient orientation and demands, high standards of medical services performed are becoming more and more essential.

The article assumes that professional competencies are a combination of skills, knowledge, attitude, and behavior that a person requires to be effective in a wide range of jobs, and various types of organizations, in addition, may be a source of sustained organizational performance (Abd-Elmoghith, Abd-Elhady, 2021). Basing on the analysis of competencies models – the study of the literature – and the authors of this papers observations of the analyzed entities the list of professional competencies was created, as this article focuses on the identification of those competencies of medical personnel.

The aim of the article is to present the theoretical assumptions of the model of professional competencies in health care units. It was assumed that competences are a multidimensional concept and require an integrated approach that allows for the construction of a competency model that reflects their real complexity. A list of professional competencies will be presented, which will be subject to empirical verification in the course of future research by the authors in order to identify key competencies.

Professional competences in healthcare entities - models review

The literature on competences assessment can be analyzed from different perspectives. The assessment of competences in the engineering universe is something relatively new compared to other disciplinary areas such as medicine and education (Souza, Lima, 2020).

Much change has been expected of healthcare organizations in recent years. As a result of literature studies the increase of investigations on the professional competencies considering its development, construction of profiles guided by areas of medical staff specialties, evaluations based on the expertise of specialists and the validation of the content of instruments used in health care can be observed.

Team for Research on Hospital Management "Avicenna" of the Jagiellonian University as a result of research identified 13 competencies of medical staff, which were divided into three groups of interpersonal and social competencies, i.e. threshold, desirable and expected competences: communication, resistance to stress, empathy, assertiveness, optimism, availability, responsibility, regularity, accuracy, openness, creativity, perseverance, willingness and motivation to constantly improve knowledge and skills (Kęsy, 2013). Threshold competencies include communication skills. In addition to the ability to build messages so as not to aggravate the asymmetry of information between the staff and the patient, empathy is essential for medical workers. This group also includes regularity (which is not only a basis for improvement at work, but also in the field of medical knowledge, permanent learning) and openness (allowing to shorten the distance between the patient and the staff). Competencies, usefulness and facilitating the performance of duties for medical employees include responsibility and assertiveness focused on the ability to argue, justify the diagnosis, organize the treatment process, etc. Another desirable competence is resistance to stress, optimism and accuracy. The remaining competencies are included in the expected group, which are not necessary at the positions of medical employees, but significantly improve the quality of work.

Professional competencies of medical staff have been defined by R.M. Epstein and E.M. Hundert (Epstein, Hundert, 2002) as the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served. Professional competencies build on a foundation of basic clinical skills, scientific knowledge, and moral development. They include a cognitive function (acquiring and using knowledge), an integrative function (availing biomedical and psychosocial data in clinical reasoning), and moral function (the willingness, patience, emotional awareness). Such competencies are developmental, impermanent, and context-dependent and depend on habits of mind. Such approach to competencies is similar with the detailed typology of competencies often cited in the literature proposed by G. Cheetham and G. Chivers (Cheetham, Chivers, 1996, 1998): cognitive competencies, functional competencies, personal (behavioral) competencies, ethical competencies, and meta-competencies (connected with the ability to deal with uncertainty).

In the model of professional competencies of medical staff in Polish Emergency Medical Units was adopted the proposition of Paramedic Association of Canada (Paramedic Association of Canada, 2011) with assumptions of concepts described above.

The Paramedic Association of Canada (PAC) established the National Occupational Competency Profile (NOCP) to create national standards for education programs, and to provide a tool to assist paramedic regulators establish common workplace standards and enhance labor mobility.

In proposed model there were established eight domains of professional competencies of medical staff employed in Polish Emergency Medical Units: Professional Responsibilities;

Communication; Health and Safety; Assessment and Diagnostics; Therapeutics; Integration; Transportation; Health Promotion and Public Safety.

In the first domain – Professional Responsibilities Competencies – were listed: functioning as a professional; participating in continuing education and professional development; possessing an understanding of the medicolegal aspects of the profession; recognizing and complying with relevant Polish legislation; functioning effectively in a team environment; making decisions effectively; managing scenes with actual or potential forensic implications.

The second domain – Communication Competencies – referred to: practicing effective oral and written communication skills; practicing effective non-verbal communication skills; practicing effective interpersonal relations.

In third domain – Health and Safety Competencies – were distinguished such competencies as: maintaining good physical and mental health; practicing safe lifting and moving techniques; creating and maintaining a safe work environment.

In the fourth domain – Assessment and Diagnostics Competencies – were specified: conducting triage in a multiple-patient incident, obtaining patient history, conducting complete physical assessment demonstrating appropriate use of inspection, palpation and percussion, assessing vital signs, utilizing diagnostic tests.

The fifth domain – Therapeutics Competencies – referred to: maintaining patency of upper airway and trachea, preparing oxygen delivery devices, delivering oxygen and administering manual ventilation, utilizing ventilation equipment, implementing measures to maintain hemodynamic stability, providing basic care for soft tissue injuries, immobilizing actual and suspected fractures, administering medications.

The sixth domain – Integration Competencies – raised: utilizing differential diagnosis skills, decision-making skills and psychomotor skills in providing care to patients, providing care to meet the needs of unique patient groups, conducting ongoing assessments and provide care.

The seventh domain – Transportation Competencies – referred to: preparing ambulance for service, driving ambulance or emergency response vehicle, transferring patient to air ambulance and transporting patient in air ambulance.

The last domain – Health Promotion and Public Safety Competencies – distinguished: integrating professional practice into community care; contributing to public safety through collaboration with other emergency response agencies; participating in the management of a chemical, biological, radiological, nuclear and explosive incident.

Seven domains have been identified that represent the broad categories of professional activity and concerns that occur in the general practice of dentistry (Plasschaert, Holbrook, Delap, Martinez, Walmsley, 2005). They are interdisciplinary in orientation: Professionalism, Communication and interpersonal skills, Knowledge base, information handling and critical thinking, Clinical information gathering, Diagnosis and treatment planning, Establishment and maintenance of oral health and Health promotion.

Next model of professional competencies includes interdisciplinary domains, such as (Cowpe, Plasschaert, Harzer, Vinkka-Puhakka, Walmsley, 2010): Professionalism, Interpersonal, Communication and Social Skills, Knowledge Base, Information and Information literacy, Clinical Information Gathering, Diagnosis and Treatment Planning, Therapy: Establishing and Maintaining Oral Health, Prevention and Health Promotion.

Forensic nursing is a global and relatively young profession that combines nursing care and juridical processes. Forensic nurse as a professional who liaises between the medical profession and criminal justice system, including forensic evidence collection, criminal procedures and legal testimony. There were established eight domains of their professional competencies (Koskinen, Likitalo, Aho, Vuorio, Meretoja, 2014): work role, diagnostic functions, managing situations, helping role, therapeutic intervention, teaching-coaching, ensuring quality.

Being able to intervene in the health-disease process taking responsibility for the quality of nursing care / care in its different levels of health care, with prevention, promotion, protection and rehabilitation actions to the health, in the perspective of integral care in both individual and collective levels was pointed by researchers from Brazil in validation of the competence profile proposal for the training of nurses (de Souza Cioffi, Ribeiro, Ormande Jr., 2019).

Another example of competencies model was created in Scotland. The study was aimed to produce develop and draft the competences and the clinical skills of neonatal nurses at different levels. As a result seven key factors were identified: 1. communication reports, 2. professional development; 3. health and safety; 4. development of services; 5. quality; 6. equality, diversity and rights; 7. responsibility for the patient care (Greig, Grigio, Kerr, 2006).

Very interesting research regarding evaluation of the perception of clinical competencies by nursing students in the different clinical settings was conducted. The model included factors such as: Helping Role, Teaching – Coaching, Diagnostic Functions, Managing Situations, Therapeutic Interventions and Ensuring Quality (Notanircola, Stievano, Pulimeno, Icorossi, Potrizzo, Gambalunga, Rocco, Petrucci, Lancia, 2018).

In Italy the professional competencies model of neonatal/pediatric nurse, identified 42 competencies including activities but also ability, predisposition and personal skills. It should underlined that there are different perceptions among the different professionals, but the nurses who work in close contact with newborns and their families feel that they have to answer for their actions primarily to infants and parents. This indicates a great responsibility towards the patients and family (Alfieri, Alebbi, Bedini, Boni, Foà, 2017).

In Finland other research was conducted that resulted with competencies profile of gerontological nursing students (Tohmola, Elo, Mikkonen, Kyngäs, Lotvonen, Saarnio, 2022). The matter was explored also in other countries (Bahrami, Purfarzad, Keshvari, Rafiei, 2019) and conclusions were analogous. Because it is important to ensure that nurses (especially those from the younger generations) are attached to gerontological nursing and interested in working in this field, efforts should be made to strengthen the motivation and raise the field's profile (Tohmola, Saarnio, Mikkonen, Kyngas, Elo, 2022).

The highly qualified nurses in Intensive Care Units are responsible for the management of the entire nursing process in a critical area, such as analyzing the care and the assistance needs in critical area, and planning and coordinating the development and the implementation of the care training pathway. Furthermore, the nurse has to guarantee and promote the care continuity and the integration between different areas, in a continuous interaction with the other healthcare experts (Alfieri, Mori, Barbui, Sarli, 2017).

Another specific area of professional competencies is mass casualty incidents and disaster. It also suggests a knowledge gap between different professional groups, which calls for adjusting such general training, to at least, the weakest group, while special tasks and mission can be given to other groups within the training occasion. (Goniewicz, Goniewicz, Włoszczak-Szubzda et al., 2021).

Another very interesting issue was referred by Spanish researchers. According to them (Gutiérrez-Rodríguez, García Mayor, Cuesta Lozano, Burgos-Fuentes, Rodríguez-Gómez, Sastre-Fullana, de Pedro-Gómez, Higuero-Macías, Pérez-Ardanaz, Morales-Asencio, 2019) the definition of specialization areas and advanced practice and what this may mean to the general medical nursing profession should be structured around three keystones: the level of complexity of the care to be provided (marked by level of dependence, complexity and vulnerability), the needs for care coordination (agents who simultaneously provide the services, transitions between levels, frequency of interactions, environments where care is provided) and lastly scope of practice (determined by the depth and breadth of knowledge required, the complexity of the service to be provided and the degree of autonomy in decision making).

Health authorities, which must give an immediate response to the needs of citizens in terms of improving the quality of services, ensure recognition of professionalism through the identification, description and promotion of technical knowledge and skills present in an organization. Competencies management forces the facility to consider the knowledge as the true patrimony of the organization itself: this heritage must therefore be known, promoted, spread, developed and protected. That refers to various organizational levels.

An original model of professional competences in healthcare entities

The proposed model of professional competences in health care units was created as a result of studies of the literature of the subject conducted by the Authors and many years of direct observations of Agnieszka Krawczyk-Sołtys (as a consultant) in these entities (Krawczyk-Sołtys, 2018a, 2018b, 2019, 2021, 2022, Krawczyk-Sołtys, Płatkowska-Prokopczyk, 2022).

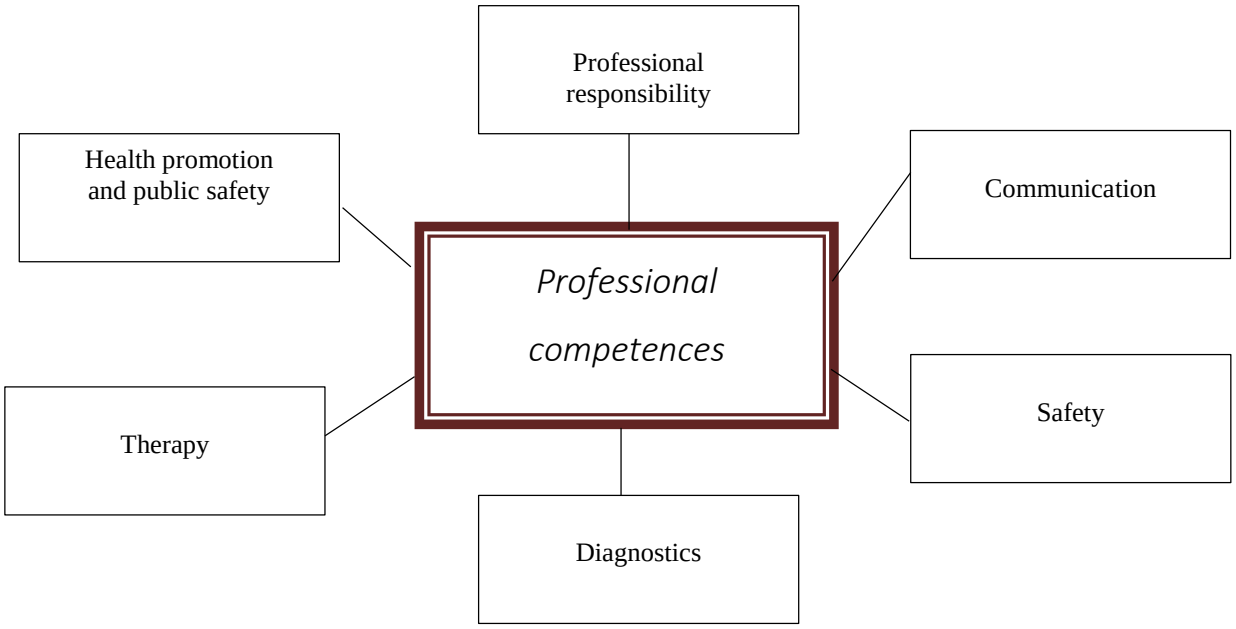

Figure 1. Model of professional competences in health care units. Source: own study.

Presented model of professional competencies in health care units (Fig. 1) was created by Authors basing on the assumptions of the models presented above. It contains six domains which capture the dynamics and complexity of health care unit's manager's role and reflect the dynamic realities in health leadership today.

Among Professional Responsibilities were distinguished such competencies as: functioning as a professional, participating in continuing education and professional development, possessing an understanding of the medicolegal aspects of the profession, recognizing and complying with relevant Polish legislation, functioning effectively in a team environment, making decisions effectively and managing scenes with actual or potential forensic implications.

First of all functioning as a professional seems to be fundamental, especially in professions where employees come into contact with people who are in difficult and stressful situations, and these are often the patients of health care units and their relatives. That's why maintaining patient dignity, reflecting professionalism through use of appropriate language, dressing appropriately, maintaining appropriate personal interaction with patients, maintaining patient

confidentiality, participating in quality assurance and enhancement programs, promoting awareness of emergency medical system and profession, behaving ethically are so important. Also participating in continuing education and professional development are considered as necessary competencies and that includes developing personal plan for continuing professional development, self-evaluating and setting goals for improvement, as related to professional practice, interpreting evidence in medical literature and assess relevance to practice. Complying with scope of practice, recognizing the rights of the patient and the implications on the role of the provider, including all pertinent and required information on reports and medical records, in other words possessing an understanding of the medicolegal aspects of the profession is another important professional responsibility.

As practicing in health care units must be carried out in accordance with the law - recognizing and complying with relevant Polish legislation, therefore functioning within relevant legislation, policies and procedures is recognized as the next professional responsibility. So is working collaboratively with partners, accepting and deliver constructive feedback (functioning effectively in a team environment), employing reasonable and prudent judgement, practicing effective problem-solving, delegating tasks appropriately (making decisions effectively) and collaborating with law enforcement agencies in the management of crime scenes, complying with ethical and legal reporting requirements for situations of abuse (managing scenes with actual or potential forensic implications).

The second domain – Communication Competencies – refers to three competencies: practicing effective oral and written communication skills, practicing effective non-verbal communication skills and practicing effective interpersonal relations. The first one manifests itself through delivering an organized, accurate and relevant report utilizing telecommunication devices, delivering an organized, accurate and relevant verbal report and patient history, providing information to patients about their situation and how they will be cared for, interacting effectively with the patient, relatives and bystanders who are in stressful situations, speaking in language appropriate to the listener, and using appropriate terminology, recording organized, accurate and relevant patient information. The second one basically means employing effective non-verbal behavior, practicing active listening techniques, establishing trust and rapport with patients and colleagues, recognizing and reacting appropriately to non-verbal behaviors. Both factors are important elements of communication necessary to develop effective interpersonal relation, which is the third component of communication, which includes treating others with respect, employing empathy and compassion while providing care, recognizing and react appropriately to persons exhibiting emotional reactions, acting in a confident manner and assertively as required, employing diplomacy, tact, discretion and conflict resolution skills.

In third domain – Health and Safety Competencies – were distinguished such competencies as: maintaining good physical and mental health (developing and maintaining an appropriate support system, managing stress, practicing effective strategies to improve physical and mental health related to career), practicing safe lifting and moving techniques (practicing safe biomechanics, transfer patient from various positions using applicable equipment and/or techniques and emergency evacuation techniques, securing patient to applicable equipment) and creating and maintaining a safe work environment (assessing scene for safety, addressing potential occupational hazards, conducting basic extrication, exhibiting defusing and self-protection behaviors appropriate for use with patients and bystanders, practicing infection control techniques, cleaning and disinfecting equipment and work environment).

The fourth domain of professional competencies is Assessment and Diagnostics Competencies and the fifth – Therapeutics Competencies. In case of these domains particular competencies are not being specified, because depending on the department, urgency of situation, ect. they are different.

The sixth domain – Health Promotion and Public Safety Competencies – raised another qualities such as: integrating professional practice into community care (participating in health promotion activities and initiatives, injury prevention and public safety activities and initiatives, working collaboratively with other members of the health care community, utilizing community support agencies as appropriate), contributing to public safety through collaboration with other emergency response agencies (working collaboratively with other emergency response agencies and within an incident management system) and participating in the management of a chemical, biological, radiological, nuclear and explosive incident.

Conclusions and Further Research

The more specific abilities could be considered subdivisions of a 'major competencies' and are termed 'supporting competencies'. Achievement of a major professional competencies requires the acquisition and demonstration of all supporting competencies related to that particular service or task. The presented above model of professional competencies might be found useful to meet all actors' needs such as: patients and their relatives, medical staff, health care units managers, health care national system.

The importance of assessing competences is undeniable. Competence recognition offers a way to develop workforce planning and career opportunities of practicing medical staff.

The literature review conducted clearly highlighted the need to create a valid, reliable and easy-to-use tool to identify the professional competencies of medical staff to support the knowledge transfer.

It is worth emphasizing that it is people and their knowledge and skills that are considered the key resource of the organization. There is also a clear shift of emphasis on the qualitative aspects of human resources as strategic element of the functioning of organizations that strive to develop the competencies of their employees. At the same time, the employees themselves acquire and improve competencies, thus increasing their value and importance on the labor market. This trend is a response to the increasing requirements for both employees and employers.

As health care units function in constantly changing environment, some of the competencies are considered to be crucial in the terms of managing those changes. G. Boak in his research (Boak, 2008) defined seven competencies important in this process: understanding complex social systems, achieving results, working collaboratively, understanding the perspectives and motivations of others, establishing systems and structures, orchestrating the team and maintaining self-belief and self-management. And it can be stated that professional competencies as much as managerial ones can be key factor in managing change as well as in every day functioning of health care units.

As much as the issue of competencies and their importance in the management of healthcare entities arouses more and more interest, yet this area is not fully developed. Therefore, it seems necessary to conduct empirical and literature research in this area, which will enrich scientific knowledge, rationalize the research methodology, as well as allow to formulate recommendations for practice.

The medical staff practicing at competent level should be able to master tasks related to their specialty area and have the knowledge, skills and evidence-based knowledge to perform daily practices capably in changing clinical situations. Health care practice on competent level should be theoretically well-grounded and autonomously well-planned and carried out. Competent medical staff is supposed to be encouraged to commit to the strategic goals and

values of the health care organization. They should: share their professional expertise as part of a multi-professional team, committed to continuous reflection and improvement of their own professional competence, motivated to guide and to support co-workers and improve the processes of patient care (Meretoja, Lindfors, Kotila, 2019).

Having an instrument that identifies existing competences and those that need to be acquired becomes significant for distinguishing the singularity of actions for a professional practice which is safe, humane and with no risk to the client, the medical staff or the health care organization. Therefore evaluating the performance by competences becomes essential for managers and training centers, since it contributes to the identification of gaps in knowledge, skills and attitudes of professionals, by promoting the elaboration and implementation of strategies for their development (Soares, Leal, Rodrigues Resck, Pedreschi Chaves, Henriques, 2019). Competency statements can also be used as a reference point in the accreditation processes.

The article highlights areas that need closer attention in the future therefore the further research will be conducted by the Authors.

References

1. Abd-Elmoghith, N.G.A., Abd-Elhady, T.R.M. (2021). Nurse Managers' Competencies and its relation to their Leadership Styles. *Assiut Scientific Nursing Journal, Vol. 9, No. 25,* pp. 79-86. Retrieved from: https://journals.ekb.eg/article_180696_034d28b705139abb78d635bd8fa59c7e.pdf, 14.09.2022.
2. Alfieri, E., Alebbi, A., Bedini, M.G., Boni, L., Foà, C. (2017). Mapping the nursing competences in neonatology: a qualitative research. *Acta Biomed., Jul. 18;88(3S),* pp. 51-58.
3. Alfieri, E., Mori, M., Barbui, V., Sarli, L. (2017). Advanced competencies mapping of critical care nursing: a qualitative research in two Intensive Care Units. *Acta Biomed.,* Jul. 18;88(3S), pp. 67-74.
4. Bahrami, M., Purfarzad, Z., Keshvari, M., Rafiei, M. (2019). The components of nursing competence in caring for older people in Iranian hospitals: A Qualitative Study. *Iranian Journal of Nursing and Midwifery Research,* 24(2), pp. 124-130.
5. Boak, G. (2008). *Competencies demonstrated by change agents in healthcare: implications for leadership and management development. Refereed paper, Ref 6.56.* Retrieved from: https://www.ufhrd.co.uk/wordpress/wp-content/uploads/2008/06/656-competencies-demonstrated-by-change-agents-in-healthcar.pdf, 2.04.2022.
6. Boam, R., Sparrow, P.R. (eds.) (1992). *Designing and Achieving Competency. A Competency Based Approach to Developing People and Organizations.* London: McGraw-Hill.
7. Boyatzis, R.E. (1982). *The Competent Manager. A Model for Effective Performance.* New York: John Wiley & Sons.
8. Campbell, A, Sommers Luchs, K. (1997) *Core Competency-Based Strategy*. London and Boston: International Thomson Business Press.
9. Cheetham, G., Chivers, G. (1996). Towards a holistic model of professional competence. *Journal of European Industrial Training, 20(5),* pp. 20-30.
10. Cheetham, G., Chivers, G. (1998). The reflective (and competent) practitioner: a model of professional competence which seeks to harmonize the reflective practitioner and competence-based approaches. *Journal of European Industrial Training, 22(7),* pp. 267-276.

11. Cowpe, J., Plasschaert, A., Harzer, W., Vinkka-Puhakka, H., Walmsley, A.D. (2010). Profile and competences for the graduating European dentist – update 2009, *European Journal of Dental Education, 14*, pp. 193-202.
12. de Souza Cioffi, A.C., Ribeiro, M.R.R., Ormande Jr J.C. (2019). Validation of the Competence Profile Proposal for the Training of Nurses. Retrieved from: https://doi.org/10.1590/1980-265X-TCE-2017-0384, 16.10.2022.
13. Dooley, K.E. et al. (2004). Behaviourally anchored competencies: evaluation tool for training via distance. *Human Resource Development International, Vol. 7, No. 3,* pp. 315-332.
14. Epstein, R.M., Hundert, E. (2002). Defining and Assessing Professional Competence. *JAMA, 287(2),* pp. 226-235.
15. Goniewicz, K., Goniewicz, M., Włoszczak-Szubzda, A. et al. (2021). The importance of pre-training gap analyses and the identification of competencies and skill requirements of medical personnel for mass casualty incidents and disaster training. *BMC Public Health,* 21, 114.
16. Green, T., Dickerson, C., Blass, E. (2010). Using competences and competence tools in workforce development projects: an evaluation in five NHS Trusts. Skills for Health NDS paper 1 – Competences final draft 12 August 2010. Retrieved from: https://uhra.herts.ac.uk/bitstream/handle/2299/5223/904350.pdf;sequence=1, 13.10.2022.
17. Greig, C., Grigio, M., Kerr, L., Wright, A. (2006). A competency framework and core clinical skills for neonatal nurses in Scotland. *Infant (INFANT), 2(4),* pp. 152-155.
18. Gutiérrez-Rodríguez, L., García Mayor, S., Cuesta Lozano, D., Burgos-Fuentes, E., Rodríguez-Gómez, S., Sastre-Fullana, P., de Pedro-Gómez, J.E., Higuero-Macías, J.C., Pérez-Ardanaz, B., Morales-Asencio, J.M. (2019). Competencias en enfermeras Especialistas y en Enfermeras de Práctica Avanzada. *Enfermería Clínica, Vol. 29, Iss. 6,* pp. 328-335.
19. Kęsy, M. (2013). *Kształtowanie kompetencji menedżerskich personelu medycznego w szpitalach.* Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.
20. Koskinen, L., Likitalo, H., Aho, J., Vuorio, O., Meretoja, R. (2014). The professional competence profile of Finnish nurses practising in a forensic setting. *Journal of Psychiatric and Mental Health Nursing, 21,* pp. 320-326.
21. Krawczyk-Sołtys, A. (2018a). Modelowanie kompetencji w jednostkach ratownictwa medycznego – założenia wstępne. In: M. Tutko, M. Wronka-Pośpiech (eds.), *Nauki o zarządzaniu w odmiennych kontekstach badawczych*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego, pp. 105-116.
22. Krawczyk-Sołtys, A. (2018b). *Personal Competencies Enhancing Organizational Competences Of Emergency Medical Units In Poland - Empirical Research.* Conference Proceedings Of The 2nd International Scientific Conference Development And Administration Of Border Areas Of The Czech Republic And Poland Support For Sustainable Development. E. Ardielli (ed.). Ostrava, pp. 125-134.
23. Krawczyk-Sołtys, A. (2019). Professional and managerial competencies enhancing organizational competences of emergency medical units. *Zeszyty Naukowe Politechniki Śląskiej, 136,* pp. 305-322.
24. Krawczyk-Sołtys, A. (2021). Professional competencies in shaping the organizational competences of Polish emergency medical units in the light of surveyresearch. *Zeszyty Naukowe Politechniki Śląskiej, 150,* pp. 99-114.
25. Krawczyk-Sołtys, A. (2022). The influence of personal competencies on organizational competences of emergency medical units. *Zeszyty Naukowe Politechniki Śląskiej, 155,* pp. 209-220.
26. Krawczyk-Sołtys, A., Płatkowska-Prokopczyk, L. (2022). Modelling of managerial competences in health care units – preliminary assumptions. *Zeszyty Naukowe Politechniki Śląskiej, 158,* pp. 317-336.

27. McClelland, D. (1973). Testing for Competence Rather Than for "Intelligence". *American Psychologist, 28,* pp. 1-14.
28. Meretoja, R., Isoaho, H., Leino-Kilpi, H. (2004). Nurse Competence Scale: development and psychometric testing. *Journal of Advanced Nursing, 47(2),* pp. 124-133.
29. Meretoja, R., Lindfors, K., Kotila, J. (2019). Professional Practice Competence Framework for the Nurse Leader. In: T.B. Hafsteinsdóttir, H. Jónsdóttir, M. Kirkevold, H. Leino-Kilpi, K. Lomborg, I. Rahm Hallberg (Eds.), *Leadership in Nursing: Experiences from the European Nordic Countries* (pp. 115-121). Springer.
30. Nadler, D.A., Tushman, M.L. (1999) The Organization of the Future: Strategic Imperatives and Core Competencies for the 21st Century. *Organizational Dynamics, 28(1),* pp. 45-60.
31. Nordhaug, O., Gronhaug, K. (1994) Competences as resources in firms. *The International Journal of Human Resource Management, 5(1),* pp. 89-106.
32. Notanircola, I., Stievano, A., Pulimeno, A.M.L., Icorossi, L., Potrizzo, A., Gambalunga, F., Rocco, G., Petrucci, C., Lancia, L. (2018). Evaluation of the perception of clinical competencies by nursing students in the different clinical settings: An observational study, *Annali di Igiene: Medicina Preventiva e di Comunità, 30(3),* pp. 200-210.
33. Official Journal of the European Union (2008). Recommendation of the European parliament and of the council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning, https://eur-lex.europa.eu/LexUriServ/ LexUriServ.do?uri=OJ:C:2008:111:0001:0007:EN:PDF, 13.10.2022.
34. Pate, J., Martin, G., Robertson, M. (2003). Accrediting competencies: a case of Scottish vocational qualifications. *Journal of European Industrial Training, Vol. 27, No. 2/3/4,* pp. 169-176.
35. Plasschaert, A.J.M., Holbrook, W.P., Delap, E., Martinez, C., Walmsley, A.D. (2005). Profile and competences for the European dentist. *Dental Education, 9,* pp. 98-107.
36. Prahalad, C.K., Hamel, G. (1990) The Core Competence of the Corporation. *Harvard Business Review, 68 (May-June),* pp. 79-91.
37. Sanchez, R., Heene, A., Thomas, H. (1996). Towards the theory and practice of competencebased competition. In: R. Sanchez, A. Heene, H. Thomas (eds.), *Dynamics of competencebased competition: theory and practice in the new strategic management*.; London: Elsevier, pp. 1-35.
38. Sharpless, B.A., Barber, J.P. (2009). A conceptual and empirical review of the meaning, measurement, development, and teaching of intervention competence in clinical psychology. *Clinical Psychology Review, 29,* pp. 47-56.
39. Soares, M.I., Leal, L.A., Rodrigues Resck, Z.M., Pedreschi Chaves, L.D., Henriques, S.H. (2019). Competence-based performance evaluation in hospital nurses. *Revista Latino-Americana Enfermagem, 27,* e3184.
40. Souza, M.C., Lima, R.M. (2020). An Overview of Assessment of Competences based on publications in journals. International Symposium on Project Approaches in Engineering Education, Bangkok - Thailand, 26-28 August 2020, Conference Paper, pp. 111-119. 2020 _conf PAEE_ALE_assessment_comptences_Mari_Lima.pdf (uminho.pt).
41. Tohmola, A., Elo, S., Mikkonen, K., Kyngäs, H., Lotvonen, S., Saarnio, R. (2022). Nursing students' competence profiles in gerontological nursing—A cross-sectional study. *NursingOpen, Vol. 9, Iss. 1,* pp. 199-209.
42. Tohmola, A., Saarnio, R., Mikkonen, K., Kyngas, H., Elo, S. (2022). Competencies relevant for gerontological nursing: Focus-group interviews with professionals in the nursing of older people. *Nordic Journal of Nursing Research, Vol. 42(3),* pp. 123-132.
43. Winterton, J., Delamare-Le Deist, F., Stringfellow, E. (2006). Typology of knowledge, skills and competences: clarification of the concept and prototype. Luxemburg: Office for Official Publications of the European Communities.