Medical and Biological Sciences, 2016, 30/4, 77-85

Marta Szara, Anna Ksykiewicz-Dorota, Jadwiga Klukow

REVIEW OF RESEARCH TOOLS FOR ASSESSMENT OF PERFORMANCE OF NURSING STAFF

PRZEGLĄD NARZĘDZI BADAWCZYCH DO OCENY WYDAJNOŚCI PRACY PIELĘGNIAREK

Chair and Department of Management in Nursing, Faculty of Health Sciences, Medical University of Lublin

Summary

Managers willingly use performance as the key element in the motivation of employees, evaluation of their work, as well as an important indicator in the bonus system. The measurement of performance allows not only the explanation of the cause of the occurrence of a deviation in the efficiency of nurses' work, but also facilitates the implementation of actions improving the quality of performance of occupational activities.

The objective of the study was analysis of literature concerning the structure and principles of the application of instruments used for the assessment of performance of nurses. The review of literature pertaining to the tools for the evaluation of efficiency of performance of nurses showed a large number of international reports; however, there is a total lack in the Polish literature. Analysis of literature allowed the formulation of the following conclusions: in Poland, there is a lack of studies concerning the measurement of performance of nurses. The performance of nurses should be measured by the tool which enables its evaluation in a multi-aspect context, and possesses a high reliability and validity.

Streszczenie

Menedżerowie chętnie stosują wydajność jako element kluczowy w motywowaniu pracowników, ocenie ich pracy, a także jako istotny wskaźnik w systemach premiowania. Pomiar wydajności pozwala nie tylko na objaśnienie przyczyny powstania odchylenia w wydajności pracy pielęgniarek, ale także ułatwia wprowadzenie działań poprawiających jakość realizacji czynności zawodowych.

Celem pracy była analiza piśmiennictwa, dotycząca struktury oraz zasad stosowania narzędzi, używanych w pomiarze wydajności pracy pielęgniarek. Przegląd piśmiennictwa dotyczącego narzędzi do oceny wydajności pracy pielęgniarek wykazał ich dużą liczbę w piśmiennictwie zagranicznym oraz zupełny brak w piśmiennictwie polskim. Analiza piśmiennictwa pozwoliła na sformułowanie następujących wniosków: w Polsce brak jest badań dotyczących pomiaru wydajności pracy pielęgniarek. Pomiar wydajności pracy należy dokonać narzędziem, które umożliwia ocenę wydajności pracy w kontekście wieloaspektowym oraz posiada wysoki współczynnik rzetelności i trafności.

Key words: performance, nursing, measurement instruments, management in nursing *Slowa kluczowe:* wydajność, pielęgniarstwo, narzędzia pomiaru, zarządzanie w pielęgniarstwie

INTRODUCTION

The development of a research tool for assessment of the clinical performance of nurses has a long history. In international literature, the authors of the presented study found mentions about instruments for the measurement of work performance developed in the 1960s [1]. Despite this, researchers worldwide are still interested in this scope of problems, and attempt to elaborate a reliable instrument for the measurement of the above-mentioned problem. Unfortunately, to-date, none of the published research instruments has been considered and commonly adopted as a 'gold standard' for assessment of the performance of nurses.

OBJECTIVE

The objective of the study was the presentation of instruments for the assessment of performance of nurses based on international literature, and the selection of the tool most appropriate for the needs of own studies.

RESULTS

While investigating nurses' performance an assessment may be made of individual employees or the entire team employed in the ward. According to the preferred form a suitable research instrument should be selected.

The research instrument with the largest number of results in the databases PubMed, Scopus and Web of Science adopted for the evaluation of nurses' performance was the Six Dimension Scale of Nursing Performance (Six-DScale, SDNS). The questionnaire was designed in the years 1974-1977 by P. Schwirian. The intention of the researcher was an assessment of the performance of nursing graduates and nurses with the period of employment up to 2 years [2]. To-date, the SDNS has been applied not only to assess performance of the graduates of nursing, but also those with long-term professional experience. Studies were performed in the form of nurses' self-reported performance, and evaluation by an observer. Formerly, the instrument Six Dimension Scale of Nursing Performance consisted of 76 detailed criteria. The final version contains 52 detailed criteria, which have been ascribed to 6 main categories [2]:

- 1) leadership (5);
- 2) intensive / critical care (7);

- 3) teaching / collaboration (11);
- 4) planning / evaluation of care (7);
- 5) interpersonal relations / communication in the team (12);
- 6) professional development (10).

The study with the use of the tool Six Dimension Scale of Nursing Performance should be performed in a two-stage way. At the first stage, analysis of performance of individual nursing activities at the place of the nurse's work is necessary. The assessment is performed using the four-point Likert scale where: 1 - means 'performance of this task during work is not anticipated', and 4 - 'most frequently performed' [2]. Each activity denoted as not performed during work is excluded from the data analysis. The second stage of the study consists in the assessment of the quality of the tasks performed. The replies are ascribed scores according to the Likert scale where: 1 - means 'the activity has been performed unsatisfactorily', while 4 performed to a very good degree' [2]. The SDNS is a standardized research tool with a high degree of reliability. The Cronbach's alpha coefficient for the whole tool was 0.97, whereas for individual detailed criteria it ranged from 0.84 - 0.90; leadership - 0.65; intensive/critical care - 0.73; teaching/collaboration -0.83; planning/evaluation of care - 0.85; interpersonal relations/communication in the team - 0.84; professional development - 0.80 [2].

P. Schwirian conducted the pilot study using the Six Dimension Scale of Nursing Performance in 151 nursing schools located in the United States. A group of 722 graduated nurses and a control group of 587 occupationally active nurses were examined [2]. Todate, the SDNS tool has been applied in studies conducted by researchers worldwide, including the USA [3], Saudi Arabia [4], Japan [5], China [6], Iran [7], and Turkey [8]. Many researchers dealing with the scope of problems of performance of nurses adapted the above-mentioned tool for their cultural and language conditions, and performed its validation. In literature, there is wide recognition that the tool Six Dimension Scale of Nursing Performance and its validated versions serve best the assessment of performance of nurses.

At the beginning of the 1990s, the researchers D. Battersby and L. Hemmings examined a modified version of the *Six Dimension Scale of Nursing Performance* among 115 graduates of nursing. The questionnaire, shortened to 24 detailed questionnaire items, was named a *Modified Version of the Scale of* *Nursing Performance* (SNP). Using this tool a pilot study was conducted and the validation process performed [9].

The subsequent research tool based on the *Six Dimension Scale of Nursing Performance* is the *Nurse Competence Scale* developed by R. Meretoj et al. This tool consists of 73 detailed items (skills) ascribed to 7 main criteria [10]:

- 1) helping role (7);
- 2) teaching coaching (16);
- 3) diagnostic functions (7);
- 4) managing situations (8);
- 5) therapeutic interventions (10);
- 6) ensuring quality (6);
- 7) work role (19).

Each detailed criterion was ascribed the VAS scale from 0 - 100, where 0 means a very low level, whereas 100 a very high level. For the assessment of performance of individual activities the four-point Likert scale was applied where: 0 – activity not performed; 1 – activity performed very rarely; 2 – activity performed sporadically; 3 – activity performed very frequently. The Cronbach's alpha coefficient for individual main criteria ranges within 0.79 – 0.91; the Cronbach's alpha coefficient for the whole *Nurse Competence Scale* was not provided [10]. The tools were used for the assessment of performance of 593 nurses employed in the university hospital in Finland [10].

In 2005, the Chinese researchers H. Yang and G. Liu developed a later adaptation of the questionnaire Six Dimension Scale of Nursing Performance. The tool contained 52 detailed items ascribed to 6 main criteria (leadership, critical care, teaching/collaboration, planning/evaluation of care, interpersonal relations/ in communication the team, professional development). The detailed criteria were ascribed a three-point descriptive scale: low, moderate, high. The Cronbach's alpha coefficient for the questionnaire subjected to the validation process was 0.81-0.93, while the Pearson's rank correlation coefficient - 0.81-0.95. The Six Dimension Scale of Nursing Performance in the Chinese language was used for the assessment of the effect of socio-economic factors on the performance of nurses [6].

The subsequent research tool which was a basis for the development of a questionnaire allowing the assessment of performance was the *Self Report* of Competence. This questionnaire was constructed based on the tool Nursing Expertise Self-Report Scale (NESRS) by P. Bernner. The author who designed the tool described 3 changes in the performance of nurse during their professional development. The first change referred to giving direction to the activities of nurses from the management in accordance with the standards in effect, to relying on the experience possessed. The second change was from the holistic perception of the clinical situation of the patient towards focusing on the most important health issues. The third change was described as a transition from an observer towards the engaged performer of individual professional activities. The unique element accompanying exclusively on an expert level was using intuition at work [11].

The questionnaire by P. Bernner consists of 20 detailed criteria. Each criterion was ascribed a fivepoint Likert scale where: 1 - means 'I definitely agree', while 5 - 'I definitely disagree'. For 10 criteria, a reverse coding was applied (a higher result meant a higher level of performance). The threshold scores allowing the assessment of performance were not specified by the author. The evaluation scale ranged from min. 20 - max. 100 scores. A low result evidenced a lower level of performance, whereas a high result – an expert level [11].

Both the tool *Self Report of Competence* and the *Nursing Expertise Self* - *Report Scale* are not recommended by their authors for conducting clinical studies of work performance. The questionnaires were designed for the preparation and adjustment of the plan of professional development for nurses [11].

The Work Limitation Questionnaire (WLQ) was designed by D. Lerner et al., in order to specify the degree to which health problems interfere with individual aspects of work performance, and result in a decrease in work efficiency. The questionnaire contains 25 detailed criteria ascribed to 4 main criteria [12]:

- 1) time management (5);
- 2) physical demands (6);
- 3) mental-interpersonal demands (9);
- 4) other demands related with performance of work (5).

The main criterion of time management refers to the difficulties with managing work time and establishing the work schedule. The criterion of physical demands covers detailed criteria related with the ability to perform job tasks that involve bodily strength, movement, endurance, coordination and flexibility. The third criterion addresses the ability to perform cognitive job tasks, and the skills of starting interpersonal relations. The last criterion refers mainly to the assessment of work performance in the qualitative and quantitative context. Each criterion was ascribed a numerical scale from 0 - 100, where 0 means 'unlimited', while 100 - 'limited all the time'. Evaluation of the detailed criteria refers to the period of the last two weeks before the study. The result obtained presents the amount of time within which the employee was limited in performance of professional duties resulting from health problems [12].

The WLQ tool was correlated with chronic diseases, such as: depression, epilepsy, degenerative joint disease, back pain, and migraine. The Cronbach's alpha coefficient for the whole tool was 0.90, while for individual main criteria it ranged from 0.88 – 0.91 [12].

The questionnaire *The Work Limitation Questionnaire* is applied worldwide. The instrument is used for evaluation of individual occupational groups, including nurses [13], employees of factories [14], as well as for the assessment of person's ill with chronic diseases, including depression[15], arthritis [15], cardiovascular diseases [16], asthma [16], cancerous diseases [17], skin diseases [18], and diseases of the musculoskeletal system [15]. More than 30 language versions are available [12].

The research tool which enables the assessment of work performance with respect to psychological load is the *Physician Mental Workload Measure*. The instrument was designed by D. Bertram in 1992. The questionnaire consists of 5 main criteria [19]:

- 1) mental effort (6);
- 2) physical effort (6);
- 3) difficulty (6);
- 4) performance (6);
- 5) psychological stress (6).

Each detailed criterion was ascribed an analogue scale from 0 - 10. The Cronbach's alpha coefficient for the whole tool *Physican Mental Workload Measure* was 0.80 [19].

Using the above-mentioned questionnaire, physicians were examined employed in the national and private health care facilities in the United States. The assessment of mental load was performed during the process of treatment of patients, considering the physician's abilities for coping with stress, emotional reactions to professional situations, as well as assistance from the members of the therapeutic team [19]. The instrument which deserves attention considering a short time of performing the study is the *Nursing Performance Instrument* (NPI). This tool was applied for physical and psychological assessment of performance of nurses. It was designed based on other standardized research tools [20]:

- Schwirian Six Dimension Scale of Nursing Performance [2];
- Modified Scale of Nursing Performance [9];
- Self Report of Competence [11];
- Physician Mental Work Load Measure [19];
- Work Limitations Questionnaire [12].

The first version of the NPI contained 29 criteria. As a result of evaluation of the usefulness of the instrument carried out by the employees and managers of the Virginia Nursing Association (VNA), the number of the criteria was shortened. Ultimately, the tool contained 9 criteria [20], from among which 4 refer to the general standards for work performance, 2 concern mental efficiency, while 3 - physical efficiency. The main criteria cover, within the general standards for work performance, the following detailed criteria: perception of changes in physical endurance, precision at work, concentration, and communication between members of the therapeutic team. With respect to mental efficiency, the detailed criteria concern motor coordination and performance of procedures related with treatment. The last criterion related with physical efficiency is: performance of nursing procedures, patient's safety, and provision of care in critical conditions [20]. Each criterion was ascribed a six-point Likert scale, where: 1 - means I definitely do not agree', and 6 - 'I definitely agree'. For the items 1, 2, 5, 7, 9, reverse coding was applied (a higher result meant higher performance) [21]. The Cronbach's alpha coefficient for the whole tool Nursing Performance Instrument (NPI) was 0.80. For individual detailed criteria the coefficient ranged within 0.77-0.80 [20]. Hence, it may be considered that the above mentioned instrument satisfied the criteria of reliability and validity.

By means of the *Nursing Performance Instrument*, 745 nurses were examined employed in hospitals in the United States. The instrument was used to determine the effect of fatigue on the performance of nurses [20], and subsequently it was applied in the study conducted in a group of 605 nurses from the USA, in order to assess the relationship between the number of sleep hours, psychological and physical fatigue, work performance, and the number of mistakes committed by nurses [21].

The subsequent instrument allowing assessment of the performance of nurses is the *Slater Nursing Competencies Rating Scale*. It was designed in the 1970s by M. Wandelt and D. Stewart. The questionnaire contains 84 detailed criteria ascribed to 6 main criteria [22]:

- 1) psychosocial independence (18);
- 2) group psychosocial relations (13);
- 3) physical (13);
- 4) general (16);
- 5) communication (7);
- 6) professional implications (7).

The Cronbach's alpha coefficient for the whole *Slater Nursing Competencies Rating Scale* was 0.80 [22]. The questionnaire *Slater Nursing Competencies Rating Scale* was applied to evaluate performance of nurses (n=42) according to the organization of nursing care, as well as to compare the nurses' self-reported performance with the evaluation provided by the patient.

The subsequent research tool is the *King's Nurse Performance Scale* designed by J. Fitzpatrick et al. The construction of this instrument results, to a great extent, from the research tool *Slater Nursing Competencies Rating Scale*, but also considers the opinions of experts in the field of nursing [22]. The researchers' idea was to compare knowledge and performance among nurses educated according to 3 educational programmes. Using the *King's Nurse Performance Scale* the researchers examined a group of 99 schoolgirls and students of the last education years in the United Kingdom [22].

The first version of the tool King's Nurse Performance Scale contained 65 detailed criteria subordinated to 7 main criteria referring to performance of nurses. The first group of the main criteria concerned the activities of nurses and focused on the physical needs of patients, and contained 14 detailed criteria. The second group of main criteria consisted of 6 detailed criteria and referred to psychosocial needs. The third group of the main criteria focused on performance of professional tasks (9 detailed criteria). The subsequent (fourth) group contained 4 criteria related with health promotion and patient education. The subsequent 6 detailed criteria verified the abilities for organizing own work and the work of subordinates, and belong to the fifth main criterion. The instrument also contained 5 detailed criteria referring to the communication taking place between nurse, and patient and nurse, and the remaining members of the therapeutic team. The last main criterion contained 21 detailed criteria verifying the planning and provision of care [22].

The final version of the tool *King's Nurse Performance Scale* consists of 53 detailed criteria, to which are ascribed responses contained in the descriptive scale. The scale contained 6 evaluations referring to the performance of individual activities. The adverbs describing the replies are: independently, under supervision, with support, in a way dependent on others, and not observed [22].

The Cronbach's alpha coefficient for the *King's Nurse Performance Scale* was 0.93. The Cronbach's alpha coefficient was also calculated for individual main criteria. For the criterion physical needs of patients = 0.74; for the criterion related with health education = 0.71; for professional care = 0.71. For the remaining main criteria Cronbach's alpha coefficient was not determined [22].

The instrument *King's Nurse Performance Scale* is not commonly used. During the review of databases PubMed, Scopus, Web of Science, no literature was found confirming the use of the tool by other researchers.

The research instrument *Behaviour Anchored Rating Scale* (BARS) was developed by P. Springer et al. in 1998. Work performance is determined by making the current assessment of an employee at the turn of the year. BARS contains 8 main criteria [23]:

- 1) judgement and decision-making;
- skills of organization and determination of priorities;
- engagement in the social environment / emotional engagement in the professional environment;
- 4) skills of behaviour in difficult situations;
- 5) engagement in the work environment;
- 6) performance of the nursing process;
- 7) reliability;
- 8) development of professional career.

To every main criterion a 5-degree visual-analogue scale was ascribed. A higher result means a higher performance of an employee in the individual main criteria. Persons performing assessment by means of the *BARS* may create individual descriptions for particular values placed on the scale. The Cronbach's alpha coefficient for the whole *Behaviour Anchored Rating Scale* was 0.89 [23]. In the pilot study conducted using the research tool *Behaviour Anchored Rating Scale*, 26 nurses participated who occupied managerial positions in home care, as well as in outpatient departments and hospitals. The BARS questionnaire was used for the assessment of work performance of 130 nurses made by their superiors [23].

For the assessment of performance of nurses the *Registered Nurse Performance Appraisal Tool* was designed by R. Hader et al. The tool consists of 33 main criteria ascribed to 3 major criteria [24]:

- 1) professional practice (12);
- 2) leadership (11);
- 3) education (5).

Each of the main criteria was ascribed a 3-degree evaluation scale. For the criterion professional practice: 0 - does not meet standards; 1 - acts in accordancewith standards; 2 - exceeds the adopted standards. For the criterion leadership: 0 - does not meet standards (does not perform basic duties, expects bearing responsibility by other employees); 1 - acts in accordance with guidelines in situations of the provision of care at critical moments, e.g. while performing cardiopulmonary resuscitation; 2 - exceeds the adopted standards, can manage the team in situations of the provision of care at critical moments. For the criterion education: 0 - does not satisfy (participates in less than 15 hours of continuous training annually); 1 - satisfies (participates in 15-25 hours of continuous training annually); 2 -exceeds (participates in more than 25 hours of continuous training annually). The scores obtained from all main criteria should then be divided by 33 (the total number of detailed criteria) [24].

The Cronbach's alpha coefficient for the whole *Registered Nurse Performance Appraisal Tool* was 0.89, whereas for individual main criteria it ranged according to the sample: the criterion professional practice - 0.87 (0.85); criterion leadership - 0.83 (0.85); criterion education - 0.79 (0.64) [24].

The study using the questionnaire *Registered Nurse Performance Appraisal Tool* was conducted by 30 nurse managers. The superiors evaluated their subordinates from the aspect of work performance twice. The subsequent study was carried out 1 month after the first study [24].

The subsequent research instrument for the assessment of performance of nurses is the *Competence Inventory for Registered Nurses* (CIRN),

developed by M. Liu et al. The questionnaire contains 80 detailed criteria ascribed to 8 main criteria [10]:

- 1) leadership (11);
- 2) clinical care (12);
- 3) interpersonal relations (13);
- practicing the profession in accordance with the law in effect /ethically (9);
- 5) teaching coaching (8);
- 6) professional development (9);
- 7) critical thinking (8);
- 8) conducting research (9).

Each detailed criterion was ascribed a 5-point Likert scale where: 1 - activity performed in an unsatisfactory way, and 5 - activity performed very well. The Cronbach's alpha coefficient for the *Competence Inventory for Registered Nurses* was 0.91, whereas for individual main criterion - 0.77 - 0.87. With this tool exclusively, a pilot study was conducted in a group of 815 nurses employed in hospitals in China [10].

The research tool which, together with the instrument *Organizational Justice Questionnaire Sheet* served the assessment of the correlation between organizational culture justice and work performance, is the *Quality Performance Questionnaires Sheet* [25]. The instrument was designed in order to investigate performance of the health care staff. The questionnaire was developed by the author of the above-mentioned study based on literature review. It contains 30 detailed criteria ascribed to 3 main criteria [25]:

- 1) informing (11);
- 2) value (10);
- 3) skills (9).

Each of the detailed criteria was ascribed 3-point Likert scale assessing the level of quality of performance of particular activities describing work performance. The higher the result obtained, the higher the level of performance. The Cronbach's alpha coefficient for the whole tool is 0.81. A pilot study using the questionnaire *Quality Performance Questionnaires Sheet* was carried out in a group of 60 nurses and 40 physicians employed in a hospital in Faynoum, Egypt [25].

DISCUSSION

The review of international literature showed various approaches of researchers to the assessment of nurses' performance. Despite many studies of this problem, none of the instruments was considered as a

'gold standard'. However, considering the importance of the scope of problems of work performance, both for the needs of managing staff resources, assessment of the quality of work, and election of factors which determine performance, this problem still remains upto-date in contemporary studies and is being constantly analyzed by researchers [4, 5,21]. It should be emphasized that the physiologists of work and specialists in ergonomics investigate work productivity defined as a biological cost of the work performed. The biological cost consists of physical effort (its dynamic and static components), psychological effort and the effect of the work environment. In this type of studies, the researchers most often use standardized research instruments, e.g. Lehman's tabular-timing method for the evaluation of the degree of physical workload, or Kirschner's tables for the assessment of static work. This also concerns psychological load [26]. In the latest reports, attention is paid to the so-called 'soft' factors of an organization (e.g. organizational culture and related with it organizational climate) which, on the one hand, are more difficult to grasp in the studies on the efficiency of work, but on the other hand are very important for the evaluation of this problem [27].

Among the presented research tools the most valuable seem to be those which may be applied for the assessment of performance of nurses who are occupationally active, employed in inpatient health services. On of the most popular instruments is the Six Dimension Scale of Nursing Performance. This instrument may be used both in the form of selfassessment performed by nurses, and the evaluation buy an observer. The advantage is also a high Cronbach's alpha coefficient determined for the whole instrument and individual detailed criteria. The detailed criteria of this tool, despite being developed in the 1970s, still reflect the majority of professional activities performed by nurses. The SDNS is still valuable for many researchers, which is confirmed by literature review in the databases PubMed, Scopus and Web of Science. This recognized research tool was a basis for the development of subsequent research instruments (Modified Version of the Scale of Nursing Performance, Nurse Competence Scale, Nursing Performance Instrument, Chinese version of Six-Dimension Scale), which have not been evaluated in such high terms as the Six Dimension Scale of Nursing Performance.

Considering easy access to many language versions and a high Cronbach's alpha coefficient, the *Work* Limitation Questionnaire deserves notice. However, similar to the Physician Mental Workload Measure, it does not allow the assessment of work performance in a holistic way. Both instruments enable assessment exclusively from the aspect of health complaints, or psychological load - which acts against them. In international literature, negative opinions were also found concerning the tool Nursing Expertise Self-Report Scale and King's Nurse Performance Scale. Both research tools - in the opinions of the authors of international reports, the authors of the presented study, as well as the authors of the above-mentioned instruments - require further efforts to improve them. Nevertheless, the above-mentioned instruments are important in the assessment of work performance. They enable the identification of weaknesses and strengths in the current evaluation of performance of nurses, and adjustment of their path of professional development to the results obtained. Similar results may be obtained using the *Behaviour Anchored Rating* Scale. This research tool allows determination of the desired and unaccepted behaviours among employees providing health services, and an assessment of an employee conducted many times within one year enables the determination of the level of the efficiency of work.

The following tools also allow a multi-directional assessment of performance of nurses: *Registered Nurse Performance Appraisal Tool, Nursing Performance Instrument, Slater Nursing Competencies Rating Scale, Quality Performance Questionnaires Sheet and Competence Inventory for Registered Nurses.* However, despite high validation coefficients, and considering them as satisfying the requirements of validity and reliability, the above-mentioned tools did not gain popularity. In the databases Skopus, PubMed and Web of Science there is a scant number of reports concerning studies conducted with the use of the above-mentioned instruments. Frequently, articles have been published describing exclusively the validation process or pilot studies.

The above-presented review of tools for the assessment of work performance showed that the majority of the research instruments are in an early phase of development. Many research tools were applied on a small study sample, which happens while constructing new instruments. A part of the research instruments possess incomplete results of validation tests and the lack of theoretical elaboration. The defining of the concept of work performance also creates problems. Many researchers evaluate work performance through the prism of, among other things, competences, physical load, or psychological load, which hinders the selection of a fully effective instrument, which would allow an overall assessment of work performance.

Literature in English contains several thorough assessing various questionnaires elements of performance of nurses. The review of databases PubMed, Scopus and Web of Science showed that todate the research tool Six Dimension Scale of Nursing Performance has been applied many times in various countries. Considering the many-year continuity of publications developed based on studies obtained with its use, it proved to be the most popular and valued; hence, the selection of this instrument by the authors of the presented study for own studies. The authors of the presented study did not find any studies carried out using the SDNS in Poland. This evidences the lack of development of a Polish language version of this research tool.

CONCLUSIONS

- Difficulties in access to research instruments, as well as the lack of psychometric data, hinder conducting of studies concerning performance of Polish nurses. The review of literature confirms that there are English language standardized instruments for the assessment of performance of nurses.
- 2. The review of the research tools performed shows that among the presented research instruments, most valuable are those which enable the assessment of performance in the multi-aspect context, and possess a high reliability and validity coefficient.
- 3. The optimum instrument for the evaluation of performance of nurses is the *Six Dimension Scale of Nursing Performance*.

REFERENCES

- Donoghue J, Pelletier SD, An empirical analysis of clinical assessment tool. Nurs Educ Today 1991; 11 (5): 354-362.
- Schwirian P.M. Evaluating the performance of nurses: a multidimensional approach. Nurs Res 1978; 27: 347-351.
- AbuAlRub RF. Job Stress, Job Performance, and Social Support Among Hospital Nurses. J Nurs Scholarship 2004; 36(1): 73-78.

- Al-Makhaita H.M, Sabra A.A, Hafez A.S. Job performance among nurses working in two different health care levels, eastern Saudi arabia: a comparative study. Int J Med Sci Public Health. 2014; 3(7): 832-837.
- Fujino Y, Tanaka M, Yonemitsu Y, et.al. The relationship between characteristics of nursing performance and years of experience in nurses with high emotional intelligence. Int J Nurs Pract 2014; 21: 876– 881.
- Yusiu P, Kunaviktikul W, Thungjaroenkul P. Job characteristics and Job Performance among Professional Nurses in the University Hospitals of People's Republic of China. CMU. J. Nat. Sci 2011; 10(2): 171-180.
- Jahromi Z.B, Kargar M, Ramezan S. Study of the Relationship Between Nurse Self-Concept and Clinical Performance Among Nursing Students. Jentashapir J Health Res. 2015; 6(5). DOI: 10.17795/jjhr-28108.
- Top M, Organizational Variables on Nurses' Job Performance in Turkey: Nursing Assessments. Iranian J Publ Health 2013; 42(3): 261-271.
- Battersby, D, & Hemmings, L. Clinical performance of university nursing graduates. The Australian Journal of Advanced Nursing 1991; 9(1), 30-34.
- Meretoja R, Isoaho H, Leino-Kilpi H. Nurse Competence Scale: development and psychometric testing. Journal of Advanced Nursing 2004; 47(2): 124-133.
- Appendix 5-A. Nursing Expertise Self-Report Scale. W: Hansten R.I, Jackson M. (red). Clinical delegation skills. A handbook for professional practice. Fourth Edition. Jones and Barlett Publishers. Sudbury. Massachussets 2009. s. 175-179.
- Munir F. The Work Limitation Questionnaire. Occupational Medicine 2008; 58: 310-311.
- Denis S, Shannon HS, Wessel J, Stratford P, Weller I. Association of lower back pain, impairment, disability and work limitations in nurses. J Occup Rehabil 2007; 17: 213–226.
- Allen HM, Slavin T, Bunn WB. Do long work hours impact health, safety and productivity at a heavy manufacturer? J Occup Environ Med 2007; 49: 148–171.
- Burton WN, Pransky, G, Conti, DJ, Chen C-Y, Edington, DW. The association of medical conditions and presenteeism. J Occup Environ Med 2004; 46: 38–45.
- Munir F, Yarker, J, Haslam C et al. Work factors related to psychological and health-related distress among employees with chronic Illnesses. J Occup Rehabil 2007; 17: 259–277.
- Feuerstein M, Hansen JA, Calvio LC, Johnson L, Ronquillo JG. Work productivity in brain tumor survivors. J Occup Environ Med 2007; 49: 803–811.
- Schmitt JM, Ford DE. Work limitation and productivity loss are associated with health-related quality of life but not with clinical severity in patients with psoriasis. Dermatology 2006; 213: 102–110.
- Bertram D, Opila D, Brown J, et.al. Measuring Physician Mental Workload: Reliability and Validity Assessment of a Brief Instrument. Medical Care. 30(2): 95-104.

- Barker, L., M., & Nussbaum, M., A. Fatigue, performance and the work environment: A survey of registered nurses. J Adv Nurs 2011; 67(6): 1370-1382.
- Ferris J. Nursing Fatigue: An Evidence-Based Practice Review for Oncology Nurses. Clin J Oncol Nurs 2015; 19(6): 662-664.
- Fitzpatrick J, While A, Roberts J. Measuring clinical nurse performance: development of the King's Nurse Performance Scale. Int. J. Nurs. Stud. 1997; 34(3): 222-230.
- Springer P, Payne K, Petermann B. Rating Nursing Performance Based on Behaviors. The Journal of Nursing Administration 1998; 28(1): 39-45.
- Header R, Sorensen E.R, Edelson W, et.al. Developing a Registered Nurse Performance Appraisal Tool. JONA 1999; 29(9): 26-32.
- Mohamed S.A. The Relationship between Organizational Justice and Quality Performance among Healthcare Workers: A Pilot Study. Sci World J 2014; DOI: http://dx.doi.org/10.1155/2014/757425.
- Ksykiewicz-Dorota A. Ergonomiczna Analiza Pracy. W: Ksykiewicz-Dorota A. (red). Zarządzanie w Pielęgniarstwie. Wydawnictwo Lekarskie PZWL. Warszawa 2015.
- Krzysztofek A, Kumańska W. Wpływ motywowania pracowników na efektywność pracy w przedsiębiorstwie. Studia i Materiały. Miscellanea Oeconomicae 2011; 15 (2):41-52.

Address for correspondence: martaszara@wp.pl ul. Staszica 4-6 20-081 Lublin tel. 814 486 820

Received: 29.09.2016 Accepted for publication: 16.12.2016