Article

A Model of Factors Determining the Attitude Towards Learning Communicative Competences of The Nurses

Lucyna Iwanow [1], Mariusz Jaworski [2], Joanna Gotlib [3] and Mariusz Panczyk [4]*

[1] Department of Education and Research in Health Sciences, Faculty of Health Science, Medical University of Warsaw; lucyna.iwanow@wum.edu.pl

[2] Department of Education and Research in Health Sciences, Faculty of Health Science, Medical University of Warsaw; mariusz.jaworski@wum.edu.pl

[3] Department of Education and Research in Health Sciences, Faculty of Health Science, Medical University of Warsaw; joanna.gotlib@wum.edu.pl

[4] Department of Education and Research in Health Sciences, Faculty of Health Science, Medical University of Warsaw; mariusz.panczyk@wum.edu.pl

* Correspondence: mariusz.panczyk@wum.edu.pl; Tel.: (+48 22) 57 20 490

Abstract: The aim of study was to assess empirical model of factors determining the attitude towards learning communicative competences among nurses participating in the program of speciality training courses. A research by method a cross-sectional study. A representative group of the 1,010 Polish registered nurses that took part in the postgraduate education course answered self-report survey (three instruments: NEO-PI-R questionnaire, Communication Skills Attitude Scale (CSAS) and Empathy Understanding Questionnaire of other people (KRE II)) between beginning of March to the end of May 2018, which was evaluated using path analysis. The research results conducted confirmed the soundness of the created theoretical model ($\chi2 = 0.278$, P = 0.598, RMSEA <0.05). It was proved that learning communicative competences in nurses is determined with factors such as professional experience, emphatic tendencies and the intensity of agreeableness, whereby these factors are bound with each other creating a homogeneous network. The developed model demonstrated that the skills can be shaped most effectively on an individual attitude based on positive mentoring in work environment..

Keywords: registered nurses; social skills; interpersonal relations; communicative competences; postgraduate education; empathy; working environment

1. Introduction

Nurses' communicative skills influence the quality and efficiency of the therapeutic process as well as safety of both the patient and medical personnel in a significant way [1]. Effective communication in the nurse - patient relationship is the key to shorten the time of hospitalization, increase patient involvement in the therapeutic process and quality of care provided [2,3]. Despite important role of these skills in the clinical practice, insufficient level of these skills among nurses is still stressed in the literature, as well as a large amount of iatrogenic mistakes connected with them [4,5].

Introducing adequate teaching in the sphere of communicative competences at an early stage of nurse education i.e. during first cycle studies, remains a key problem to solve; creating positive attitudes towards learning and gaining these skills is not less problematic [2,6]. Investigating factors that may positively influence the attitude towards gaining and excelling these skills is also valid [7,8]. It should be noted that the attitude is not a constant and invariable human disposition. It may be subject to modifications under the influence of external factors (e.g. work environment). Such a modifications may be carried out both with positive and negative results. They are related with the significance and intensity of operations. It is therefore important to undertake activities aiming at boosting positive attitude. Such actions may manifest themselves in various activities, e.g. courses,

mentoring and postgraduate training. By virtue of its nature, which combines professional experience and boosts nurses' expertise, postgraduate training accounts for ideal conditions for positive reinforcement attitude towards learning communicative competence. What is more, it also accounts for a safe area of facing your doubts relating to practical applications of acquired skills, and encourages reflection. It seems that the role of postgraduate education in this area is particularly important.

Postgraduate education is diversified in both EU member countries and worldwide [9]. In the majority of countries, nurse specializations form part of this stage of education in given fields of medicine / nursing (geriatrics, surgery, anaesthesiology, paediatrics, etc.) [9-11]. The aim of postgraduate education is improvement of skills already acquired in the course of university studies, and their development in order to gain new competences. As a result of current trends, as well as alarming reports on the deficit of soft skills among medical personnel, components pertaining communication were included in the educational profile in the current programs of courses and trainings [12-14].

The Act of 15 July 2011 on the professions of nurse and midwife regulates postgraduate education of nurses and midwives in Poland. In line with the act, "A nurse and a midwife have the duty of constant update of their knowledge and professional skills and the right to exercise professional development in various kinds of postgraduate education" [15]. The Polish legislator provides various forms of postgraduate education, but one of the most important forms is speciality training. The training allows a nurse to earn the title of a specialist in a given field of nursing (e.g. paediatrics, surgery, internal medicine, oncology) or a field that has application in health care (e.g. health care of workers) [15].

Shaping positive attitude towards gaining communicative skills is a complex process, influenced by numerous factors. According to Harlak, Gemalmaz [16] one of significant factors of possibly key importance in shaping positive attitude is empathic tendency, which accounts for one of important dimensions of emotional intelligence. It is assumed that the skill of understanding and identification of one's own and others' emotions is an important factor influencing adequate decision-making in clinical practice [17], increasing the efficiency of patient engagement in the therapeutic process, improving therapeutic relation, and positively influencing the quality of medical care offered to the patient [18]. It is worth stressing that the ability to work with one's own and others' emotions may directly influence the need of excelling and gaining professional clinical skills in nurses [19], as well as constitute a significant factor in successful nursing practice [20]. In this regard it may be assumed that empathic tendency, connected with the skill of identifying and managing emotions, should influence also the shape of positive attitude towards acquiring communicative competences.

Next to empathic tendency, professional experience accounts for another important factor shaping the attitude of nurses towards acquiring interpersonal competencies, including communicative competence. Numerous studies stress the relation between professional experience or the study year and the attitude towards learning communicative competences [21-23]. The function of professional experience in shaping attitudes towards learning communicative competences is not clear. There is research indicating that professional experience influences growingly more positive attitudes [23], in others on the contrary [22]. Other publications indicate that professional experience did not play statistically significant function in creating attitudes [21]. Bearing in mind results of the studies, it must be stressed that a simple assumption of the relation between professional experience and shaping positive attitude towards communicative skills is significantly flawed. Professional experience is directly connected with work environment and the skill of dealing with it. According to Mikolajczak, Menil [24] empathic tendency, especially high levels of emotional intelligence, enable effective coping in a stressful and emotionally burdensome work environment, such as, undoubtedly, clinical work. It thereby points to the relation between professional experience and empathic tendency.

While performing the analysis of the relation between empathic tendency, professional experience and shaping positive attitude towards acquiring communicative skills,

personality traits must be taken into consideration, as they are relatively constant tendencies conditioning human behaviors in various situations. Personality traits, therefore, may constitute the foundation for shaping all attitudes and psychosocial skills. This relation has been highlighted in some studies. Ayuso-Murillo, Colomer-Sanchez [25], among others, as well as Chan and Sy [26] paid attention to this link. Some personality traits may in most likelihood also influence the attitude towards learning communicative competences. One of the most known approaches to personality in the literature is the Big Five Personality Traits devised by Costa and McCrae [27]. The Big Five presumes that all people possess five basic traits (Neuroticism, Extraversion, Openness to experience, Agreeableness and Conscientiousness), but they differ among one another with the intensity of each of the traits [27]. In the context of the work of nurses, agreeableness, which conditions human behaviour in interpersonal contacts, may be of key importance. Chan and Sy [26] presented similar stance interpreting research results of studies conducted among students of nursing. By analogy, it may be concluded that agreeableness may also be of key importance in the context of nurses' attitude towards learning communicative skills. This, however, demands empirical verification. Agreeableness is a complex personality trait and comprises several subdimensions [27]. In the context of nursing, compliance calls for special attention, as it needs to be treated as one of sub-dimensions of agreeableness. This variable should be considered as a tendency to react to interpersonal conflicts in a defined way. Persons with high level of this trait have the tendency to act aloof in the situation of conflict, tendency to forgive and forget and hamper aggression [27]. Interpersonal conflicts among multidisciplinary team members in workplaces are nothing rare in hospital wards [28]. It must be stressed that conflict management is considered an advanced skill, application of which demands not only adequate competencies but also positive attitude towards learning certain interpersonal skills [29].

The aim of study was to assess empirical model of factors determining the attitude towards learning communicative competences among nurses participating in the program of speciality training courses.

2. Materials and Methods

2.1. Design

A cross-sectional study administered to a representative group of Polish registered nurses was carried out from the beginning of March to the end of May 2018.

2.2. Sample size

The size of sample needed was calculated for the study employing structural equation modelling (SEM) [30]. The number of observed variables was assumed at the level of N = 4 and number of unobserved variables at the level of N = 3. The predicted effect size was 0.1. The statistical power (0.80) and probability (0.05) levels were assumed a priori. With such assumptions, the minimum sample size required to detect the specified effect (N = 400) was determined, and the minimum sample size required given the structural complexity of the model (N = 950). It was assessed that the final size of the required sample should total no less than 1,000 cases.

2.3. Participants

The main criterion for inclusion was participation and positive outcome of the program of speciality training held in the years 2016-2017. Additional criterion for inclusion was at least three-year documented professional experience in the profession of a nurse. Potential participants of the study were identified and recruited on the basis of database conducted by the Centre for Postgraduate Education for Nurses and Midwives in Warsaw, Poland. The sampling frame involved the register of 17,500 nurses with the title of the specialist obtained in the years 2016-2017. With the method of simple drawing (computer generated random numbers), a sample of 4,000 persons was drawn. In the study

2,030 persons (response rate 50.8%) agreed to participate in the study, and data package was received from 1,010 nurses.

2.4. Data collection

Persons randomly selected to participate in the study were informed about the aim of the study, as well as about the means of data collection and storage. Informed consent was obtained verbally from each participant from whom data was collected after filling in the questionnaire. There was no register of people who did not agree to participate in the study. The causes of refusal were not recorded. Questionnaires were anonymous and after data collection there was no possibility of identification of personal data of the participant filling in a given questionnaire.

The results of the study were collected with computer-assisted web interviewing (CAWI) method. The online questionnaire was made in a program for creating web interviews. Persons who agreed to participate in the study were provided with a link to the online questionnaire. No information was recorded about the personal data of the study participants.

2.5. Validity, reliability and rigour

The instruments used in this study were checked and tested on advanced Polish nursing population [31-33].

2.6. Instruments

In order to measure intensity of agreeableness, the subscale 'agreeableness' from the questionnaire NEO-Pi-R by Costa and McCrae [27] in the Polish adaptation by Siuta [32] was employed. The subscale is built of 8 statements, the truthfulness of which is rated on a 5-point scale by the respondent, where 1 stands for "strongly disagree", and 5 - "strongly agree". General escalation of agreeableness is the sum of points converted in accordance with a key developed by the authors. The measurement of the variable was conducted by a psychologist. NEO-PI-R is a fair and relevant tool, commonly used questionnaire for studying personality.

Standardized questionnaire Communication Skills Attitude Scale (CSAS) by Rees, Sheard [34], in the Polish adaptation by Panczyk, Iwanow [31] was used for the measurement of attitudes towards learning communicative competences. The Polish version of the questionnaire is made of 23 statements pertaining attitude towards learning communicative competences in teaching profession and in professional practice. Statements assessed on a five-degree Likert scale where 1 means "strongly disagree" and 5 – "strongly agree". The tool is divided into two subscales: positive (PAS) and negative (NAS). The positive subscale is made up of 11 statements, and the negative one of 12 statements. The evaluation of attitudes towards learning communicative competences is done on the basis of the total result of the scale, after recalculation of the score in accordance with the described key [31].

The Polish Empathy Understanding Questionnaire of other people (KRE II) by Węgliński [33] served for the measurement of empathy, understood both as the emotional and cognitive component, as well as to capture the meaning of motivational aspect in empathy. The questionnaire is made up of 33 statements, assessed on a 4-point scale. The questions are divided into ones the diagnostic measurement of which is positive "yes" and those of negative diagnostic measurement "no". The question with the power "yes" are evaluated on a four-degree scale, where 3 stands for – yes, 0 – no; while questions with the power "no", on the reverse scale, 3 stands for – no, and 0 – yes. The tool is divided into 5 subscales 1) sympathizing the pleasant and unpleasant experiences with others 2) co-feeling pleasant and unpleasant experiences with others 3) sensitivity to the experiences of others 4) readiness to sacrifice for others 5) empathizing in the conditions and experiences of others. The evaluation of empathic understanding is determined by means of total result of the scale obtained in accordance with the guidelines enclosed in the questionnaire. Points are counted from each subscale – the maximum number of subscales

which may be gained in each subscale is the product of the number 3 and the number of statements.

Data pertaining professional experience measured in the years were downloaded from the database Centre for Postgraduate Education for Nurses and Midwives in Warsaw, Poland. Consent for access to the data was obtained.

2.7. Theoretical assumptions of the model

Based on literature review, theoretical model of potential factors determining attitude towards acquiring communicative skills in nurses was developed. Agreeableness, as a personality variable, was regarded an observed exogenous variable. The discussed variable conditions relatively stable dispositions of an individual to undertake specific activities, and do not undergo modifications. It may therefore be assumed that agreeableness will influence other observed endogenous variables (attitude towards learning communication skills, empathic tendency, and seniority) (Figure 1). Agreeableness may positively influence empathic tendency, as well as seniority. It is presumed that agreeableness as a psychological variable connected with the abilities of work with others will influence the need to shape empathic tendency in nurses and condition adaptive mechanisms to work conditions, and thus professional experience in a given profession. Additionally, longer traineeships in clinical practice may be connected with shaping adequate adaptive mechanisms to work conditions (e.g. cooperation in a therapeutic team, the patient and their family), health education of the patient, increase of treatment efficiency and adherence to medical recommendations. This, in turn, may influence the need of greater insight into the patient's needs, and glance on the illness from the patient's perspective (situation in which they found themselves). In order to achieve that, empathic tendency may occur helpful.

$$\left\{ \begin{array}{l} \text{Communication} = \gamma_1\,(\text{Empathic tendency}) + \gamma_2\,(\text{Agreeableness}) + e2 \\ \text{Empathic tendency} = \gamma_2\,(\text{Agreeableness}) + \gamma_3\,(\text{Seniority}) + e1 \\ \text{Seniority} = \gamma_2\,(\text{Agreeableness}) + e3 \end{array} \right.$$

Figure 1. Formal description of the model tested ($\gamma1$, $\gamma2$, $\gamma3$ – path coefficients; e1, e2, e3 – unobserved variables).

2.8. Ethical considerations

The authors sought advice from the Bioethics Committee of Medical University of Warsaw to conduct the presented study. As the "commission does not issue opinions on the survey, retrospective and other non-invasive scientific studies", approval was not required (AKBE/37/19).

2.9. Data analysis

In order to determine causal links between three psychological variables and professional experience, the method of path analysis, i.e. SEM (Structural Equation Modelling), was employed. The aim of the analysis was to obtain answers to the questions whether casual relationships between variables presumed by the researcher in theory are confirmed in the collected empirical data. In order to do that, model parameters were assessed (path coefficient, variance and covariance) which served as a theoretical foundation for the variance–covariance matrix for variables used in the model. Estimation of the parameters of the model consists in such a selection of the parameters that the theoretical matrix of the variance-covariance was as close as possible to the observed matrix of variance-covariance. For the estimation of the structural model, maximum likelihood method was used. The difference between the theoretical and empirical matrices was estimated based on three values: discrepancy function FMIN (minimum fit function), CMIN (chi-square statistics), and CMIN/DF (normal chi-square). For the evaluation of the model, the chi-square statistics are expected to be nonsignificant. As the CMIN value is dependent on the

size of the sample and the degree of the complexity of the model, additionally also Hoelter's critical N, also called the Hoelter index was calculated. CMIN must be less than 0.5, and Hoelter's critical N must be greater than 200 to show a good fit index.

SEM has no single statistical test that best describes the strength of the model prediction. Instead, different types of measures were developed by researchers in combination to assess the results. The commonly used fit indices in the literature include the related CMIN, Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Tukey-Lewis Index (TLI), Normed Fit Index (NFI), Incremental Fit Index (IFI), and Root Mean Square Error of Approximation (RMSEA). According to Byrne [35] GFI, AGFI, CFI, TLI, NFI and IFI measures equal to or are greater than 0.95 and thus signify good fit indices. Also, RMSEA less than 0.05 displays the most acceptable fit index.

All statistical calculations were performed using the statistical package IBM® SPSS® Statistics, version 23 and Amos version 21. For all analyses, a P-level of < 0.05 was considered statistically significant.

3. Results

3.1. Participant characteristics

The average age of participants was 41.6 (SD = 8.14, Min. = 26.0, Max. = 63.0), and average years spent at work in the profession was 18.5 (SD = 9.04, Min. = 3.0, Max. = 40.0). The sample was representative of the broader Polish nurse population in terms of the title of specialist that a nurse held. Table 1 reports demographic characteristics of the participants who completed this study.

Table 1. Sociodemographic characteristics of the study sample.

	N	%
Gender		
Female	970	96.0
Male	40	4.0
Place of residence		
Countryside	254	25.1
Village (population up to 50 thousand)	211	20.9
Small town (51-200 thousand inhabitants)	224	22.2
Large town (201-500 thousand inhabitants)	144	14.3
City >500 thousand inhabitants	171	16.9
Missing data	6	0.6
Education		
Secondary medical	195	19.3
Bachelor's degree	306	30.3
Master's degree	504	49.9
Missing data	5	0.5
Specialisation		
Anaesthesiological nursing	286	28.3
Internal medicine nursing	141	14.0
Surgical nursing	123	12.2
Geriatric nursing	109	10.8
Oncological nursing	107	10.6
Operating room nursing	83	8.2

Cardiological nursing	44	4.4
Psychiatric nursing	34	3.4
Long-term care nursing	29	2.9
Palliative care nursing	11	1.1
Other	43	4.3

3.2. Descriptive statistics of variables

The score for the obtained results for particular scales (agreeableness, empathic tendency, and attitude towards learning communication skills) were recalculated to the scale, in line with the published norms for the validated tools: NEO-Pi-R, KERII, and CSAS. All the variables included in the model of structural equations were analysed for the presence of data outliers (Mahalanobis distance). It was also calculated to what degree such parameters as skewness and kurtosis deviate from the ones that are expected for normal distribution. Although multivariate of normality was not satisfied (critical area -2.54, multivariate of kurtosis -1.11), particular variables did not prove significant divergence in the scope of compliance with normal distribution, as skewness and kurtosis were in the scope from -1.5 to +1.5 (Table 2).

Table 2. Descriptive statistics parameters.

Variable	M	SD	Min	Max	Skew	Kurtosis
Attitude towards learning communication skills [1]	5.4	1.63	1.0	10.0	0.56	0.77
Empathic tendency [1]	5.5	1.89	1.0	10.0	0.03	-0.42
Agreeableness [1]	5.4	1.95	1.0	10.0	0.16	-0.34
Seniority	18.5	9.04	3.0	40.0	0.00	-1.15

M – mean, SD – standard deviation

[1] sten scores

3.3. Measurement model

Each of the calculated measures (FMIN, CMIN and CMIN/DF) indicates that the assumed theoretical model finds confirmation in the collected empirical data (Table 3). Besides, on the basis of the obtained probability test (P = 0.598) it was assumed that the hypothesis on lack of differences between theoretical and empirical variance-covariance matrices is highly probable. Also the estimated Hoelter index value (0.05 levels of significance, N = 13,940) indicates that the verification of the zero hypothesis should not be vitiated by an error stemming from the sample size and the degree of complexity of the model tested.

Table 3. Likelihood Ration Chi-Square.

Model	NPAR	CMIN	DF	P-value	CMIN/DF	FMIN
Default	9	0.278	1	0.598	0.278	0.000
Saturated	10	0.000	0			0.000
Independence	4	245.779	6	0.000	40.963	0.244

NPAR - number of parameters, CMIN - chi-square statistics, DF - degrees of freedom, CMIN.DF - normal chi-square, FMIN - minimum fit function

As the aim of testing has never been bringing its fit to empirical data coming only from the sample studied but also in relation from the whole population, both the value of the discrepancy function F0 and the value of RMSEA index adjusted for the number of

degrees of freedom were calculated (Table 4). Based on the assessed value F0 it was stated that matrices of variance-covariance are equal to the population matrix. Also RMSEA value (<0.05) indicates the equality of both matrices. The results confirm good fit of data to the expected model structure.

Table 4. Root Mean Square Error of Approximation.

Model	F0	-90% CI	+90%CI	RMSEA	-90% CI	+90%CI
Default	0.000	0.000	0.005	0.000	0.000	0.067
Saturated	0.000	0.000	0.000	-	-	-
Independence	0.238	0.190	0.292	0.199	0.178	0.221

F0 - discrepancy function, RMSEA - Root Mean Square Error of Approximation, CI - confidence interval

For a more accurate evaluation of the degree of fit of the model to data collected, two groups of indices of fit were assigned. The first group of indices was of the ones that compare the tested model with the zero model, i.e. the model whose matrix variance-covariance equals zero. The GFI value was estimated (1.000) as well as its corrected value, AGFI (0.998). The results indicate that nearly 100% variability of dependent variable is explained by the tested model.

In the other group of indices, there are ones which compare the model tested with an independent model, i.e. one in which all variables in the model are not correlated. Minimally acceptable values for the indices are 0.95 (Table 5).

Table 5. Baseline comparison.

Model	NFI	IFI	TLI	CFI
Default	0.999	0.993	1.000	1.000
Saturated	1.000	-	1.000	1.000
Independence	0.000	0.000	0.000	0.000

NFI - Normed Fit Index, IFI - Incremental Fit Index, TLI - Tukey-Lewis index, CFI - Comparative Fit Index

3.4. Assessing the measurement model

Analysis of the proposed path model demonstrated that the strongest direct effect connected with the influence of independent variable on dependent variable takes place between the variables Agreeableness and Empathy (0.274). However, the weakest direct relation was observed in the case of variables Agreeableness and Seniority (0.151). Among analysed relations, all were positive, with the exception of one, Agreeableness --> Communication (-0.202). Detailed summary presenting estimation results of model parameters of structural equations is shown in Table 6.

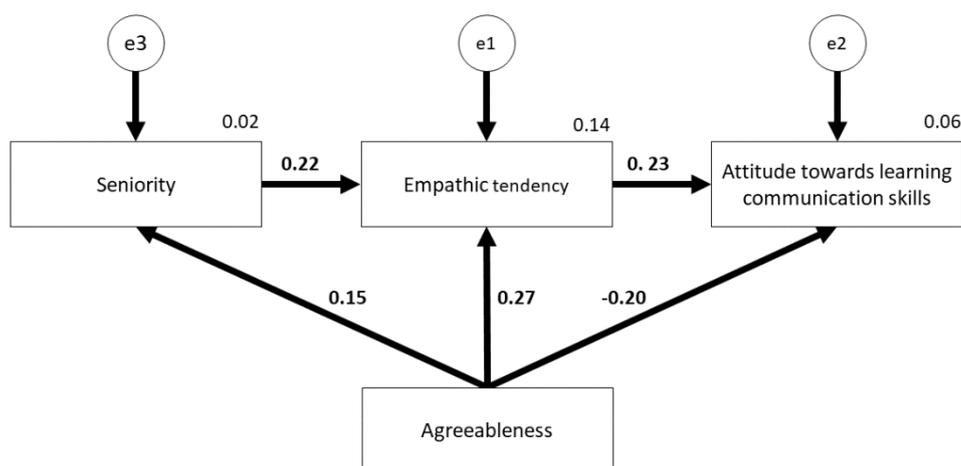**Table 6.** Standardized and unstandardized regression weights.

Construct	Standardized regression weights	Unstandardized regression weights	SE	CR	P-value
Agreeableness --> Seniority	0.151	0.701	0.144	4.855	0.000
Seniority --> Empathy	0.224	0.047	0.006	7.596	0.000
Agreeableness --> Empathy	0.271	0.264	0.029	9.198	0.000
Empathy --> Communication	0.228	0.196	0.027	7.128	0.000
Agreeableness --> Communication	-0.202	-0.169	0.027	-6.321	0.000

SE - standard error, CR - critical ratio

In the model analysis, both direct effects, and the value of indirect and total effects was calculated, for which the influence of independent variables on dependent variable is not direct. Indirect effects in the model described were implemented w in the following paths (standardized path values were provided):

-   Agreeableness --> Empathy --> Communication (0.271·0.228 = 0.062)
-   Agreeableness --> Seniority --> Empathy --> Communication (0.151·0.224·0.228 = 0.008)

The total value obtained from the effects indicates that Agreeableness indirectly influences the variable Communication (0.062+0.008 = 0.07). It means that the total influence of Agreeableness on Communication equals (-0.202+0.07 = -0.132). All correlations of the tested model, together with evaluation of path were presented on Figure 2.

Figure 2. A model of standardized regression weights and squared multiple correlations for measurement.

4. Discussion

The developed theoretical model and its empirical verification demonstrated the existence of important factors shaping the nurses' attitude towards acquiring communicative skills. Such factors as empathic tendency and professional experience may perform notably major role here. While analysing the role of emphatic tendency in shaping nurses' positive attitude towards acquiring interpersonal communicative competence, two significant factors must be identified. The first one, the notion of emphatic tendencies, is well grounded in the literature [36-39], which boosts theoretical framework of the developed model. Second, empathic tendencies may undergo modifications, and thus be reinforced by trainings in the field of improving interpersonal skills [40]. The trends discussed allow for a better cognition and understanding of the relations between medical personnel, as well as patients [41-47]. At the same time, they enable deeper insight into oneself, self-reflection and constructive criticism, which may get translated into shaping the need and positive attitude towards acquiring interpersonal competencies. This positive attitude, in turn, will condition creating safe and friendly work environment, as well as relevant responses to the patient's needs, efficiency of therapeutic process, and satisfaction with nursing care [48,49].

The results obtained suggest key role in professional experience in the context of shaping positive attitude towards acquiring communicative skills. Therefore work environment becomes highly important, as it conditions work environment. Onan et al. [50] stress in their work that the profession of a nurse is potentially highly stressful. They also noticed that the inability of stress management has behavioural, physical and mental consequences. In the work by Onan et al. [50] it was indicated that inadequate communication

leads, as a consequence, to serious stress among the nursing personnel. In this regard, improving communicative skills may be considered priority in this respect. Improving communicative skills of this kind is possible only with a nurse's earlier shaped positive attitude towards acquiring these skills, preceded by self-reflection. A nurse must therefore be aware of the cause-effect relationship in this area, e.g. with the relevance of interpersonal skills in coping with stress effectively in the workplace. Bearing in mind results obtained, it must be noted that trainings aiming at improving interpersonal skills should be preceded by self-reflection and shaping the need of acquiring new skills. Without the initial process, efficient acquiring interpersonal skills may be limited.

No self-reflection, and positive attitude towards improving one's own interpersonal skills connected with it may results in the adoption of various responses, not necessarily adaptive (e.g. flight reaction as response to patient's expectations). The flight reaction may be connected with personality trait such as agreeableness, one of elements of the Five Factor Model [27]. It is a trait presenting attitude to other people that is in what way a human perceives the feelings of others and reacts to them. In the presented model a negative correlation was observed between agreeableness and attitudes towards communicative competences.

The trait discussed is a relatively stable disposition which may influence the need of improving one's own interpersonal skills. Analysis of the trait seems justified in relation to empathic tendency and self-reflection. For example, high level of this trait with simultaneous low level of empathic tendencies and self-reflection may negatively influence shaping the attitude. In this scheme, the use of defense mechanism in the form of flight/avoidance may be promoted. The mechanism may be additionally boosted by high increase in stress, personnel exhaustion, large number of patients in hospital wards and expectation of individual approach to each patient [51]. However, high level of agreeableness with simultaneous low level of empathic tendencies and self-reflection may positively influence shaping the attitude towards gaining communicative skills. A nurse is aware of the need of improving their skills and significant role of patient care. Self-reflection of this kind may be a key factor that launches shaping positive attitude towards gaining discussed competencies. Summing up, it may be said that agreeableness and empathic tendency base on coping with emotions. It may be concluded that empathy may serve as work tools for people with high level of agreeableness and negative attitude towards learning and communicative competences. With regard to the above, it may be assumed that by boosting the study of empathic tendency, study of coping with emotions may be brought to creating positive attitude towards acquiring communicative competences. Environmental enquiry and discussion with working nursing personnel confirm this view. Nurses participating in the discussion repeatedly stressed the need of introducing courses in the scope of interpersonal skills.

In the model presented, also positive correlation between agreeableness and professional experience was recognized. It stems from the fact that agreeableness allows to acquire adaptive mechanisms, i.a. the already mentioned escape mechanism, which allows to stay in a workplace longer. It however does not influence the measures taken or attitudes presented by a nurse. There is a plethora of examples from daily life in a nurse's professional work, where persons presenting the syndromes of burnout persist in their professions, and their actions affect new nurses negatively. Based on the assumption above, the function of the mentor in a workplace may turn out to be of key importance (e.g. nurse-to-nurse mentoring [52]), i.e. a person introducing another person to the profession, who, through highly developed empathic tendency, not always backed with developed communicative skills, may shape and create a new generation of nurses in a positive manner. The nurse-to-nurse mentoring [52] may turn out an efficient method of reinforcing soft competencies in nurses, which may complement the developed model of factors determining attitudes toward acquiring communicative competences in nurses.

The model developed, which underwent empirical verification, may also constitute a practical solution for lack of adequate communicative competences among the medical personnel, including nurses, frequently stated in the literature [2,53,54]. Research has

shown that negative attitude of medical personnel towards gaining communicative skills is noticeable from patients' viewpoint. It is reflected in the quality of contact with the patient (e.g. their reluctance to talk and devote their time) [46,47,55]. The key factor in stopping this phenomenon is empowering medical personnel and people who do not yet work in the profession (students) with tools such as soft skills. However, in the case of professionally active nurses, the implementation of creating attitudes at the initial stage of education is already impossible. Therefore, in nurses with too high or too low level of agreeableness, other methods of impact need to be introduced. For instance, the introduction of activities aiming at strengthening the skills of coping with one's own emotions, and identification of own and patient's emotions and the ones of their family [17,24]. In this regard, strengthening empathic tendency and developing high levels of emotional intelligence [24] may bear high significance. The model obtained partially confirms it, as it stresses a positive correlation between agreeableness and empathic tendency and another one between empathic tendency and attitude towards learning communicative competences. What follows, as a result of reinforcement and developing the emphatic attitude in nursing personnel, positive attitude towards learning communicative skills may be obtained with time.

4.1. Limitations

Interpretation and interference based on the result obtained are subject to certain limitations which need to be taken into account in the process of evaluation. The study group consisted of persons participating in state specialization exams in the field of nursing. It needs to be assumed that these persons represent part of the nursing environment which invests in their professional development both in the areas of knowledge and competences. Therefore the respondents may prove to show more positive attitude towards learning competences and professional development than persons not participating in trainings and taking postgraduate courses.

What also must not go unnoticed is the stress factor, which was natural given the time of filling in the tool. The persons took a state exam which granted them the title of specialist in the field of nursing. The authors of the study also did not have any influence on the fact whether participant of the study had any previous training in the field of interpersonal communication or emotional intelligence. Moreover, the authors did not control the intensity of burnout or stress in the workplace. In the study, also the full personality profile of the participants was not taken into account, and only selected attributes instead.

Despite the limitations mentioned, the model developed showed an innovative approach to the issue of creating positive attitude towards learning communicative competences. It was proved that personality trait such as agreeableness, if properly trained in the field of soft skills, may positively attribute to developing empathic tendency and attitude towards learning communicative competences, as well as contributing to nurses remaining in their profession.

5. Conclusions

Shaping positive attitude towards acquiring communicative skills is a complex process dependent on numerous factors, which was confirmed in the developed model. In the practical context, the developed model is most efficiently verified in an individual attitude based on positive mentoring in a workplace. The work environment may play a key role here, as it influences professional experience, one of important factors in the presented models. Shaping positive attitude towards acquiring communicative skills should take into account empathic tendency, as well as be fit to the realities of clinical work (work environment). To be precise, shaping competences and acquiring methods of coping with difficult situations in a hospital ward (e.g. stressful or emotionally burdening situations), which influence professional experience and emphatic attitude towards patients.

Supplementary Materials: None.

References

1. Tan, T.C.; Zhou, H.; Kelly, M. Nurse-physician communication - An integrated review. J Clin Nurs 2017, 10.1111/jocn.13832, doi:10.1111/jocn.13832.
2. Baron, U.; Jaracz, K.; Górna, K.; Jacenko, A.; Gołębiewska, K. Attitudes of nursing and medicine students towards the nurse's role in therapeutic team. Pielęgniarstwo Polskie 2014, 4, 302-307.
3. Street, R.L., Jr.; De Haes, H.C. Designing a curriculum for communication skills training from a theory and evidence-based perspective. Patient education and counseling 2013, 93, 27-33, doi:10.1016/j.pec.2013.06.012.
4. Ellison, D. Communication skills. Nurs Clin North Am 2015, 50, 45-57, doi:10.1016/j.cnur.2014.10.004.
5. Quan, S.D.; Wu, R.C.; Rossos, P.G.; Arany, T.; Groe, S.; Morra, D.; Wong, B.M.; Cavalcanti, R.; Coke, W.; Lau, F.Y. It's not about pager replacement: an in-depth look at the interprofessional nature of communication in healthcare. J Hosp Med 2013, 8, 137-143, doi:10.1002/jhm.2008.
6. Rees, C.; Sheard, C. Evaluating first-year medical students' attitudes to learning communication skills before and after a communication skills course. Medical Teacher 2003, 25, 302-307.
7. Bogusz, R.; Majchrowska, A. Motywy podejmowania kształcenia podyplomowego w zawodzie pielęgniarskim. Pielęgniarstwo XXI wieku 2012, 3, 59-63.
8. Tomczak, J.; Strzelecki, W. Wybrane czynniki osobowościowe jako predyktory kształtowania się zainteresowań i pasji studentów uczenli wyższych. Pielęgniarstwo Polskie 2012, 4, 214-220.
9. Estrada-Masllorens, J.M.; Guix-Comellas, E.M.; Cabrera-Jaime, S.; Galimany-Masclans, J.; Roldán-Merino, J.; Lluch-Canut, T. Analysis of University Postgraduate Nursing Education in Spain. The Journal of nursing education 2016, 55, 615-622, doi:10.3928/01484834-20161011-03.
10. European Federation of Nurses (EFN). EFN country report on continuing professional development in nursing. Availabe online: http://www.efnweb.be/wp-content/uploads/2012/11/EFN-Report-on-CPD-June-2006-Final-rev-22-10-2012.pdf (accessed on 16-12-2020).
11. Lahtinen, P.; Leino-Kilpi, H.; Salminen, L. Nursing education in the European higher education area - variations in implementation. Nurse Educ Today 2014, 34, 1040-1047, doi:10.1016/j.nedt.2013.09.011.
12. Center of Postgraduate Education for Nurses and Midwives. Availabe online: http://www.ckppip.edu.pl/ (accessed on 16-12-2020).
13. Park, E.K.; Song, M. Communication barriers perceived by older patients and nurses. Int J Nurs Stud 2005, 42, 159-166, doi:10.1016/j.ijnurstu.2004.06.006.
14. Surmacka, J.; Motyka, M. Problemy w komunikacji klinicznej z pacjentem hospitalizowanym. Problemy Pielęgniarstwa 2015, 23, 386-391.
15. The Polish Sejm. Ustawa z dn. 15 lipca 2011 r. o zawodach pielęgniarki i położnej (Dz.U. 2011 nr 174 poz. 1039). 2011.
16. Harlak, H.; Gemalmaz, A.; Gurel, F.; Dereboy, C.; Ertekin, K. Communication skills training: effects on attitudes toward communication skills and empathic tendency. Education for Health 2008, 21, 62.
17. Watanabe, S.; Yoshida, T.; Kono, T.; Taketa, H.; Shiotsu, N.; Shirai, H.; Torii, Y. Relationship of trainee dentists' self-reported empathy and communication behaviors with simulated patients' assessment in medical interviews. PloS one 2018, 13, e0203970, doi:10.1371/journal.pone.0203970.
18. Raghubir, A.E. Emotional intelligence in professional nursing practice: A concept review using Rodgers's evolutionary analysis approach. Int J Nurs Sci 2018, 5, 126-130, doi:10.1016/j.ijnss.2018.03.004.
19. Akerjordet, K.; Severinsson, E. The state of the science of emotional intelligence related to nursing leadership: an integrative review. Journal of nursing management 2010, 18, 363-382, doi:10.1111/j.1365-2834.2010.01087.x.

20. Rochester, S.; Kilstoff, K.; Scott, G. Learning from success: improving undergraduate education through understanding the capabilities of successful nurse graduates. Nurse Educ Today 2005, 25, 181-188, doi:10.1016/j.nedt.2004.12.002.

21. Anvik, T.; Grimstad, H.; Baerheim, A.; Bernt Fasmer, O.; Gude, T.; Hjortdahl, P.; Holen, A.; Risberg, T.; Vaglum, P. Medical students' cognitive and affective attitudes towards learning and using communication skills–a nationwide cross-sectional study. Medical teacher 2008, 30, 272-279.

22. Cleland, J.; Foster, K.; Moffat, M. Undergraduate students' attitudes to communication skills learning differ depending on year of study and gender. Medical Teacher 2005, 27, 246-251.

23. Khashab, S.S. Attitudes of Alexandria Medical Students towards Communication Skills Learning. J Egypt Public Health Assoc 2006, 81, 355-372.

24. Mikolajczak, M.; Menil, C.; Luminet, O. Explaining the protective effect of trait emotional intelligence regarding occupational stress: Exploration of emotional labour processes. Journal of Research in personality 2007, 41, 1107-1117.

25. Ayuso-Murillo, D.; Colomer-Sánchez, A.; Herrera-Peco, I. Communication skills in ICU and adult hospitalisation unit nursing staff. Enferm Intensiva 2017, 28, 105-113, doi:10.1016/j.enfi.2016.10.006.

26. Chan, J.C.; Sy, P.Y. The Relationships Among Personality, Intercultural Communication, and Cultural Self-Efficacy in Nursing Students. J Nurs Res 2016, 24, 286-290, doi:10.1097/jnr.0000000000000157.

27. Costa Jr, P.T.; McCrae, R.R. The Revised NEO Personality Inventory (NEO-PI-R); Sage Publications, Inc: 2008.

28. Freedman, B.D. Risk factors and causes of interpersonal conflict in nursing workplaces: Understandings from neuroscience. Collegian (Royal College of Nursing, Australia) 2019, 26, 594-604.

29. Ang, M. Advanced communication skills: conflict management and persuasion. Acad Med 2002, 77, 1166, doi:10.1097/00001888-200211000-00034.

30. Hoyle, R.H.; Gottfredson, N.C. Sample Size Considerations in Prevention Research Applications of Multilevel Modeling and Structural Equation Modeling. Prev Sci 2015, 16, 987-996, doi:10.1007/s11121-014-0489-8.

31. Panczyk, M.; Iwanow, L.; Zarzeka, A.; Jaworski, M.; Gotlib, J. Communication skills attitude scale: a translation and validation study in asample of registered nurses in Poland. BMJ Open 2019, 9, e028691, doi:10.1136/bmjopen-2018-028691.

32. Siuta, J. Inwentarz osobowości NEO-PI-R; Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego: Warszawa, 2006.

33. Węgliński, A. Zrewidowana wersja kwestionariusza rozumienia empatycznego innych ludzi – KRE II. In Diagnostyka resocjalizacyjna - wybrane zagadnienia, Wojnarowska, A., Ed. UMCS: Lublin, 2010; pp. 65-88.

34. Rees, C.; Sheard, C.; Davies, S. The development of a scale to measure medical students' attitudes towards communication skills learning: the Communication Skills Attitude Scale (CSAS). Med Educ 2002, 36, 141-147.

35. Byrne, B.M. Structural equation modeling with AMOS: basic concepts, applications, and programming (multivariate applications series). New York: Taylor & Francis Group 2010, 396, 7384.

36. Davis, M. Empatia: o umiejętności współodczuwania; Gdańskie Wydawnictwo Pedagogiczne: Gdańsk, 1999.

37. Mazurkiewicz, J. Wstep do Psychofizjologii Normalnej (An Introduction to Normal Psychophysiology); Panstwowy Zaklad Wydawnictw Lekarskich: Warszawa, 1950.

38. Mehrabian, A.; Epstein, N. A measure of emotional empathy. J Pers 1972, 40, 525-543, doi:10.1111/j.1467-6494.1972.tb00078.x.

39. Rosenberg, M.B.; Kłobukowski, M. Porozumienie bez przemocy: o języku serca; J. Santorski & Company: Warszawa, 2003.

40. Razavi, D.; Delvaux, N.; Marchal, S.; Durieux, J.F.; Farvacques, C.; Dubus, L.; Hogenraad, R. Does training increase the use of more emotionally laden words by nurses when talking with cancer patients? A randomised study. Br J Cancer 2002, 87, 1-7, doi:10.1038/sj.bjc.6600412.

41. Thirioux, B.; Birault, F.; Jaafari, N. Empathy Is a Protective Factor of Burnout in Physicians: New Neuro-Phenomenological Hypotheses Regarding Empathy and Sympathy in Care Relationship. Front Psychol 2016, 7, 763, doi:10.3389/fpsyg.2016.00763.

42. Majchrowska, G.; Tomkiewicz, K. Stres i wypalenie zawodowe w zawodzie pielęgniarki - wyniki badań pielęgniarek z SOR ZZOZ Cieszyn. Pielęgniarstwo Polskie 2015, 3, 267-272.

43. Widstrand, T.; Göthlin, M.; Rönnström, N. Porozumienie bez przemocy czyli Język żyrafy w szkole; Centrum Metodyczne Pomocy Psychologiczno-Pedagogicznej: Warszawa, 2005.

44. Rosenberg, M.; Seils, G. Rozwiązywanie konfliktów poprzez porozumienie bez przemocy; Jacek Santorski&Co: Warszawa, 2008.

45. Kalisch, B.J. What is empathy? The American journal of nursing 1973, 73, 1548-1552.

46. Zarzycka, D.; Ślusarska, B.; Dobrowolska, B.; Deluga, A.; Trojanowska, A.; Bartoń, E. Empatia w pielęgniarstwie. Założenia, praktyka i jej empiryczne uwarunkowania. Pielęgniarstwo XXI wieku 2016, 3, 33-38, doi:10.1515/pielxxiw-2016-002.

47. Reynolds, W.J.; Scott, B. Do nurses and other professional helpers normally display much empathy? J Adv Nurs 2000, 31, 226-234, doi:10.1046/j.1365-2648.2000.01242.x.

48. Mattson, M.; Hellgren, J.; Goransson, S. Leader communication approaches and patient safety: An integrated model. Journal of safety research 2015, 53, 53-62, doi:10.1016/j.jsr.2015.03.008.

49. Norouzinia, R.; Aghabarari, M.; Shiri, M.; Karimi, M.; Samami, E. Communication Barriers Perceived by Nurses and Patients. Glob J Health Sci 2015, 8, 65-74, doi:10.5539/gjhs.v8n6p65.

50. Onan, N.; Ünsal Barlas, G.; Karaca, S.; Kocaman Yıldırım, N.; Taşkıran, Ö.; Sümeli, F. The relations between perceived stress, communication skills and psychological symptoms in oncology nurses. 2015.

51. Kędra, E.; Nowocień, M. Czynniki stresogenne a ryzyko wypalenia zawodowego w pracy pielęgniarek. Pielęgniarstwo Polskie 2015, 3, 293-306.

52.   Hale, R.L.; Phillips, C.A. Mentoring up: A grounded theory of nurse-to-nurse mentoring. J Clin Nurs 2019, 28, 159-172, doi:10.1111/jocn.14636.

53.   Adams, A.; Mannix, T.; Harrington, A. Nurses' communication with families in the intensive care unit - a literature review. Nursing in critical care 2017, 22, 70-80, doi:10.1111/nicc.12141.

54.   Başoğul, C.; Özgür, G. Role of Emotional Intelligence in Conflict Management Strategies of Nurses. Asian Nursing Research 2016, 10, 228-233, doi:http://dx.doi.org/10.1016/j.anr.2016.07.002.

55.   Bidaut-Russell, M.; Gabriel, S.E.; Scott, C.G.; Zinsmeister, A.R.; Luthra, H.S.; Yawn, B. Determinants of patient satisfaction in chronic illness. Arthritis Care Res. 2002, 47, 494-500.