Communication competence and the intensity of anxiety and stress in medical staff – a preliminary report

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Summary

Communication competencies are crucial in healthcare. Medical staff is exposed to increased emotional stress. It is still unclear, whether the level of communication competencies correlates with stress associated with professional work in healthcare providers. The aim of this study was to determine this relationship and investigate the models of coping with stress among different professional groups in the hospital wards.

Methods: The study involved interviewing medical personnel (N=93, 69 female, doctors, nurses, psychologists) to collect the psychological parameters including stress, anxiety, coping strategies and communication skills.

Results: Nurses use less often task oriented coping with stress than doctors, while psychologists have higher level of avoidance-oriented style than doctors and nurses. Important associations between readiness for cooperation and the stress levels in doctors (positive) and psychologists (negative) were detected. The level of communication barriers correlated strongly negatively with the level of stress in psychologists. There are important relationships between cooperation and stress levels, individual communication style and anxiety levels.

Conclusions: Healthcare professionals use various coping strategies when exposed to stressful situations which depend partly on their profession. The coping strategies used correlate with the communication strategies. Moreover, the level of anxiety is associated with communication competence.

communication competences, coping strategies, stress, anxiety, medical stuff

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INTRODUCTION

Medical personnel is a specific professional group of people requiring a special set of competences. Every day the hospital employees experience contact with illness, suffering, crises of individual and family life concerning the patients, who uprooted from their everyday life find themselves in a health or life threatening situation [1]. For many patients and their family members the situation of hospitalization is a moment of emotional crisis and the resultant

emotions are transferred upon the medical staff [2, 3]. Moreover, medical professionals are subject to high demands regarding professional and moral standards and these expectations are often contradictory. They are expected to be highly qualified, trained and skilled but sensitive, well organized and stress-resistant though empathetic, open-minded but focused, ready to act and hard-working but willing to spend time with the patient. At the same time, they have to deal with everyday hospital life, such as the organization of the wards, self-development, didactics, financial challenges, and group cooperation [4, 5, 6, 7]. On the one hand they need to have individual competencies concerning the tasks they are to perform in the group, on the other hand they should be able to cooperate in the group, being ready to find their place and role in the ward medical team, having its own dynamics and hierarchy. Altogether this creates a very challenging and demanding psychological environment. It can be very creative and stimulating for development, but it may also be highly stressful, if not properly dealt with, causing many adverse effect, such as the burnout syndrome broadly described in literature [8, 9, 10]. Extensive research indicates that communication is one of the most important elements influencing social group functioning. Communication competences are vital in many aspects of medicine: doctor–patient communication is central to clinical practice, effective communication is essential for high – quality medicine; it improves patient satisfaction, recall, understanding, adherence and outcomes of care. Communication is a core clinical skill also for nurses, psychologists and other members of the medical team, thus an essential component of clinical competence [11, 12]. Effective communication significantly improves accuracy, efficiency and supportiveness, health outcomes for patients, satisfaction for patients and doctors, the therapeutic relationship. Communication bridges the gap between evidence – based medicine and working with individual patients. Communication can also improve outcomes for the workers of the ward teams [13]. Bearing that in mind it seems essential to explore the relationship between communication competences and the stress and anxiety experienced by medical stuff. Although there is a growing awareness of the importance of efficient communica-

tion in our country, and various workshop for medical stuff and students are introduced, there has been no scientific analysis in our country so far, also worldwide there is still scarce of such exploration.

BACKGROUND AND AIMS:

The aim of the study was to explore the relationship between communication competences and the selected psychological parameters: anxiety, the level of stress and coping with stress strategies in medical staff.

Studied group

Data was collected from March to May 2019. The study included 93 employees (64 females, 29 males).

Inclusion criteria:

- Informed consent to participate in the study
- Doctors, nurses and psychologists employed at the wards of the University Hospital in Krakow or working in wards under the contract with the University Hospital in Krakow

Exclusion criteria:

- Employment at the University Hospital for a period of <6 months

The mean time of employment was 10.5 years (min. 0.5 years, max 36 years); the mean age of the participants was 36 (min 24). The population included three professional groups: medical doctors (n = 64), nurses (n = 18), psychologists (11). The study was conducted in 13 departments of the University Hospital: Angiology and Cardiology (5), Surgery (11), Internal Diseases (11), Dialectology (7), Endocrinology (2), Gynecology (5), Hematology (6), Neurology (10), Anesthesiology and Intensive Treatment (9), Oncology (5), Rheumatology (1), Psychiatry (15), Urology (6).

The research was carried out anonymously, after giving written information on the research

objectives to the respondents. It was approved by the Bioethical Committee.

METHODS

The study involved interviewing for personal data: age, gender, education, workplace, seniority. To collect the measured psychological parameters the following tools were used: CISS – Coping Inventory For Stressful Situations, Mini-COPE – Brief Coping Orientation to Problems Experienced Inventory, STAI – State-Trait Anxiety, Inventory, PSS-10 – Perceived Stress Scale, GSES – General Self-Efficacy Scale. To assess communication a Communication Competency Test (CCT) by Maria Nowina Konopka was used. The CCT test includes 16 items that compose 4 subscales: Communication Barriers, Communication Tactics, Individual Communication Styles, Readiness for Cooperation. For this publication we decided to analyze selected psychological parameters: anxiety, the level of stress and coping with stress strategies. Also, at this stage, we decided to present the results referring to the whole group and to three subgroups (doctors, nurses, psychologists), without division in terms of gender or specialization.

Statistical analyzes were carried out using the IBM SPSS Statistics 23 package. Descriptive statistics analysis, Kolmogorow-Smirnow test, one-way ANOVA for independent samples, Brown – Forsythe tests, Pearson's r correlation and Z Fisher tests were performed.

In case of non-Gaussian distribution of the data level of the skewness of these distributions was assessed. Values within the – 2 to +2 range suggested that the distributions are not significantly asymmetrical, and it was possible to perform statistical analyzes using parametric tests [14]. For this reason, parametric tests were used in the work.

The level of significance $\alpha = 0.05$ was considered. Test probability results of $0.05 < p < 0.1$ were interpreted as significant at the statistical trend level.

RESULTS

Basic descriptive statistics of the measured quantitative variables

Only task-oriented style and avoidance-oriented style including distraction seeking and social diversion as well as state anxiety of the respondents had normal distributions (Table 1). Non-Gaussian distribution was detected for other variables.

Table 1. Basic descriptive statistics of quantitative variables tested

	M	Me	SD	Sk.	Kurt.	Min.	Max.	K-S	p
Communication barriers	8.85	9	2.20	-0.31	-0.06	3	13	.11	.005
Communication tactics	6.53	6	1.54	-0.12	-0.47	3	9	.16	<.001
Individual communication styles	10.03	10	2.07	-0.13	-0.73	5	14	.12	.002
Readiness for cooperation	6.72	7	1.47	-0.26	-0.52	3	9	.15	<.001
Level of stress	17.92	17	5.97	0.48	-0.04	5	34	.12	.002
Task-oriented style	61.01	61	7.66	0.23	0.79	44	87	.08	.200
Emotion-oriented style	39.83	38	10.83	0.46	-0.10	17	68	.12	.001
Avoidance-oriented style	42.32	42	7.99	-0.04	-0.76	27	60	.09	.083
Distraction seeking	17.51	17	5.09	0.22	-0.15	8	31	.07	.200
Social diversion	17.57	18	3.97	0.04	-0.33	7	25	.07	.200
State anxiety	61.92	61	9.34	-0.67	1.53	28	79	.09	.056
Trait anxiety	60.48	63	9.26	-0.78	0.37	28	74	.14	<.001
Active coping	2.43	2.50	0.51	-0.36	-0.49	1	3	.24	<.001
Planning	2.34	2.50	0.53	-0.11	-1.00	1	3	.23	<.001

Positive reevaluation	1.65	1.50	0.61	0.28	-0.08	.50	3	.17	<.001
Acceptance	1.87	2	0.58	-0.84	1.55	0	3	.28	<.001
Sense of humor	0.85	1	0.51	0.39	0.15	0	2.50	.20	<.001
Turning to religion	0.93	1	0.95	0.69	-0.65	0	3	.22	<.001
Seeking emotional support	2.01	2	0.71	-0.63	0.53	0	3	.21	<.001
Seeking instrumental support	2.09	2	0.63	-0.63	0.70	0	3	.22	<.001
Doing something else	1.45	1.50	0.76	-0.04	-0.55	0	3	.15	<.001
Denial	0.46	0.50	0.57	1.17	0.37	0	2	.26	<.001
Discharge	1.46	1.50	0.67	0.06	0.06	0	3	.14	<.001
Use of psychoactive substances	0.45	0	0.73	1.80	2.71	0	3	.34	<.001
Cessation of activities	0.66	0.50	0.56	0.27	-0.95	0	2	.20	<.001
Blaming onself	1.44	1.50	0.79	0.29	-0.35	0	3	.16	<.001

M – mean; Me – median; SD – standard deviation; Sk. – skewness; Kurt. – kurtosis; Min and Max – the lowest and highest distribution value; K-S – Kolmogorov-Smirnov test result; p – significance

Level of anxiety and the profession of the examined persons

Next, it was verified whether the profession of the surveyed people differentiated their level of anxiety. One-way analyzes of variance were performed. No statistically significant differences were recorded even at the level of statistical tendency (Table 2). However, the mean level of anxiety was higher than observed in general population (STAI).

Table 2. The level of anxiety and the profession of the examined persons.

		M	SD	
State anxiety	Doctor	61.86	10.38	$F_{(2, 90)} = 0.08$
	Nurse	61.56	5.63	$p = .928$
	Psychologist	62.91	8.30	
Trait anxiety	Doctor	61.03	9.67	$F_{(2, 90)} = 0.37$
	Nurse	59.00	8.74	$p = .689$
	Psychologist	59.73	7.99	

Stress level and the profession of the examined population

Next, it was verified whether the occupation of the examined people differentiated their stress level. One-way analyzes of variance were performed. Again, no statistically significant results were observed even at the level of statistical tendency but the general level of stress was higher than in general population (PPS-10) (Table 3).

Table 3. Stress level and the profession of the examined persons

		M	SD	
Level of stress	Doctor	18.00	6.33	$F_{(2, 90)} = 1.46$
	Nurse	19.22	5.19	$p = .239$
	Psychologist	15.36	4.48	

Level of coping styles and the occupation of the examined persons

In the next step of the analyses it was verified whether the profession of the respondents differentiated their level of coping styles. One-way analyzes of variance were performed, or strong tests of Brown-Forsyth equality in case of failure to meet homogeneity of variance. Two statistically significant results were noted – in task-oriented style and avoidance-oriented style (social diversion subscale) (Table 4). To explore the results, Sidak post-hoc tests were performed. In terms of task-oriented style, one statistically significant difference was noted. Nurses had a significantly lower level of this style of coping with stress than doctors (p = 0.017). Psychologists did not differ from the other groups even at the level of statistical tendency. In terms of the level of avoidance-oriented style (social diversion) two statistically significant differences were noted. Psychologists were characterized by a statistically higher level of this type of coping than doctors (p = 0.026) and nurses (p = 0.005). The latter two groups did not differ even at the level of statistical tendency.

Table 4. The level of stress management styles and the occupation of the respondents. Different letter indices mean differences at the level of statistical significance p <0.05. Sidak post-hoc tests

		M	SD	
Task-oriented style	Doctor	62.16a	7.64	$F(2, 90) = 4.05$ $p = .021$
	Nurse	56.56b	5.23	
	Psychologist	61.64ab	8.99	
Emotion-oriented style	Doctor	38.53	11.42	$F(2, 90) = 1.88$ $p = .158$
	Nurse	44.06	9.21	
	Psychologist	40.45	8.37	
Avoidance-oriented style	Doctor	42.94	8.39	$F(2, 90) = 2.01$ $p = .140$
	Nurse	39.06	7.32	
	Psychologist	44.09	5.30	
Distraction seeking	Doctor	17.73	5.49	$F(2, 45.12) = 1.07$ $p = .349$
	Nurse	16.28	4.79	
	Psychologist	18.18	2.40	
Social diversion	Doctor	17.78a	3.85	$F(2, 90) = 3.88$ $p = .024$
	Nurse	15.61a	3.35	
	Psychologist	19.55b	4.59	

Level of communication competences and the profession of the examined persons

In the next step, it was checked whether the profession of the respondents differentiated their level of communication competence. One-way analyzes of variance or strong tests of Brown-Forsyth equality in case of failure to meet homogeneity of variance were performed. Two results close to statistical significance were noted – in terms of communication barriers and communication tactics (Table 5). Such a result, however, did not allow for post-hoc analyzes to verify differences between specific groups.

Table 5. Level of communication competences and the profession of the examined persons

		M	SD	
Communication barriers	Doctor	8.56	2.29	$F_{(2, 90)} = 3.03$
	Nurse	9.00	1.61	$p = .054$
	Psychologist	10.27	2.00	
Communication tactics	Doctor	6.36	1.64	$F_{(2, 28.21)} = 3.20$
	Nurse	6.56	0.92	$p = .056$
	Psychologist	7.45	1.51	
Individual communication styles	Doctor	9.98	2.06	$F_{(2, 90)} = 1.30$
	Nurse	9.67	1.78	$p = .278$
	Psychologist	10.91	2.47	
Readiness for cooperation	Doctor	6.91	1.33	$F_{(2, 90)} = 0.20$
	Nurse	6.39	1.72	$p = .819$
	Psychologist	6.18	1.72	

Relationship between the level of communication competences and the stress level of the examined persons

In the next step, it was verified whether the level of communication competences was related to the stress level of the subjects. A series of analyzes of correlations with the Pearson r coefficient were performed. However, no relationships were found even at the level of statistical tendency (Table 6)

Table 6. Relationship between the level of communication competences and the stress level of the examined persons

		Communication barriers	Communication tactics	Individual communication styles	Readiness for cooperation
Level of stress	Pearson's r	.012	.022	-.029	.119
	p-value	.906	.833	.784	.256

It was also verified whether there are relationships between the variables studied when they are analyzed separately in the group of doctors, nurses and psychologists. As seen in Table 7, three statistically significant relationships were noted. The level of individual communication styles correlated negatively with the stress level in the group of psychologists. The strength of this relationship was very high. The correlations between readiness for cooperation and the stress levels in doctors (weak positive) and psychologists (strong negative) were detected. Moreover The level of communication barriers correlated strongly negatively with the level of stress in psychologists at the level of statistical tendency.

The differences between the strength of individual correlations in professional groups were analyzed with the Fisher's Z test. A statistically significant difference was noted in the relationship between cooperation and stress levels between groups of doctors and psychologists ($Z = 2.71$; $p = 0.007$) and relationships between individual communication style and anxiety levels between the groups of doctors and psychologists ($Z = 3.34$; $p < .001$) and nurses and psychologists ($Z = 3.69$; $p < .001$). There was also a difference at the level of statistical tendency between groups of doctors and psychologists in the relationship between communication barriers and the level of stress ($Z = 1.87$; $p = .062$).

Table 7. Relationship between the level of communication competences and the stress level of the doctors, nurses and psychologists studied

			Communication barriers	Communication tactics	Individual communication styles	Readiness for cooperation
Level of stress	Doctor	Pearson's r	.122	.058	.041	.266
		p-value	.335	.648	.745	.034
	Nurse	Pearson's r	-.085	.256	.378	-.030
		p-value	.739	.306	.122	.906
	Psychologist	Pearson's r	-.525	-.205	-.838	-.632
		p-value	.098	.546	.001	.037

Relationship between the level of communication competences and the level of styles of coping with stress

Another analysis verified whether the level of communication competences was associated with styles of coping with stress of the examined population. A series of analyzes of correlations with the Pearson r coefficient was performed. As seen in Table 8, six statistically significant relationships were noted. The level of task-oriented style positively correlated with the level of individual communication styles and the readiness for cooperation. Moreover, the avoidance-oriented style (social diversion) correlated positively with all four scales of communication competences. The strength of the correlation between the social diversion scale and readiness for cooperation was low, while the other three correlations were moderately strong. In addition, four correlations were noted at the statistical trend level. The level of emotion-focused style negatively correlated with the level of individual communication style, the level of avoidance style positively correlated with the level of communication barriers and individual communication style, while the distraction seeking scale negatively correlated with the level of readiness for cooperation. However, the strength of all these correlations was low. Other correlations were not even close to statistical significance.

Table 8. Relationship between the level of communication competences and the level of styles of coping with stress of the examined persons.

		Communication barriers	Communication tactics	Individual communication styles	Readiness for cooperation
Task-oriented style	Pearson's r	.169	.160	.276	.226
	p-value	.106	.125	.007	.029
Emotion-oriented style	Pearson's r	-.150	.118	-.174	-.056
	p-value	.151	.258	.096	.592
Avoidance-oriented style	Pearson's r	.191	.161	.180	-.019
	p-value	.067	.122	.084	.856
Distraction seeking	Pearson's r	.062	-.008	.042	-.193
	p-value	.553	.939	.690	.064
Social diversion	Pearson's r	.335	.382	.308	.248
	p-value	.001	<.001	.003	.017

Occurrence of the relationships between the variables analyzed separately in the group of doctors, nurses and psychologists was verified. Due to the large number of analyzes presented collectively in Table 9, as well as the Z-Fisher tests performed in the next step, the relationships between successive styles of coping with stress communication styles are discussed in blocks.

The task – oriented style statistically significantly correlated with the level of individual communication style and readiness for cooperation only in a group of psychologists. Both of these correlations were positive and strong. In addition, two correlations were noted at the level of statistical tendency: between the task-oriented style and the communication tactics of nurses and the communication barriers of psychologists. Both of these correlations were positive with the first of them being moderately strong, and the second very strong. Other relationships were not even close to statistical significance.

The Fisher tests performed revealed the following differences:
- in terms of the strength of correlation of the task-focused style and readiness for cooperation between the group of doctors and psychologists (Z = – 4.61; p <.001) and nurses and psychologists (Z = – 4.12; p <.001);
- in terms of the strength of correlation of the task-focused style and individual communication styles between the group of doctors and psychologists (Z = – 2.66; p = .007) and nurses and psychologists (Z = – 2.81; p = .005).

The emotion-oriented style statistically correlated significantly with the level of individual communication style in the group of nurses and psychologists and with readiness for cooperation only in the group of psychologists. These correlations were very strong – the first positive, while the other two negative. In addition, there was one correlation at the level of statistical tendency – between the emotion-oriented style and the communication barriers in psychologists – negative and very strong. Other relationships were not even close to statistical significance.

The Fisher tests performed revealed the following differences:

- in terms of the strength of correlation of the emotion-oriented style and Readiness for cooperation between the group of doctors and psychologists (Z = 3.36; p <.001) and nurses and psychologists (Z = 2.39; p = .017);
- in terms of the strength of correlation of emotion-oriented style and Individual communication style between a group of doctors and psychologists (Z = 5.08; p <.001); nurses and psychologists (Z = 6.22; p <.001) and nurses and doctors (Z = – 2.82; p = .005).

The avoidance-oriented style correlated statistically significantly with readiness for cooperation only in the group of nurses – it was negative and moderately strong. In addition, there were three correlations at the level of statistical tendency: between an avoidance-oriented style and communication barriers, individual communication styles and a readiness for cooperation in psychologists. All these correlations were positive and very strong. Other relationships were not even close to statistical significance.

The Fisher tests performed showed the following differences:

- in terms of the strength of correlation of avoidance-oriented style and readiness for cooperation between a group of doctors and psychologists (Z = – 1.66; p = .097), nurses and psychologists (Z = – 2.69; p = .007) and nurses and doctors (Z = 1.93; p = .054)
- in terms of the strength of correlation of avoidance-oriented style and individual communication styles between the group of nurses and psychologists (Z = – 1.80; p = .072)

The distraction coping subscale statistically correlated significantly with the readiness for cooperation only in the group of nurses. This correlation was negative and very strong. Other relationships were not even close to statistical significance.

The Fisher tests carried out showed no differences in the strength of correlation between the examined groups.

The social diversion subscale correlated statistically significantly with all four scales of com-

munication competences in the group of doctors and psychologists, and only with the scale of individual communication styles in the group of nurses. In the group of doctors, these correlations were characterized by a positive sign and moderately high strength, in the group of nurses the correlation noted was negative and characterized by high strength, while in the group of psychologists these correlations were positive and very strong. Additionally, a correlation between the social diversion and communication tactics in nurses was noted for close statistical significance. This correlation was negative and moderately strong. Other relationships were not even close to statistical significance.

The Fisher tests performed revealed the following differences:

– in terms of the strength of correlation of social diversion and communication barriers between groups of doctors and psychologists (Z = – 2.14; p = .032) and nurses and psychologists (Z = – 2.51; p = .012);
– in terms of the strength of correlation of social diversion and communication tactics between groups of nurses and psychologists (Z = – 3.33; p <.001) as well as nurses and doctors (Z = – 3.21; p = .007);
– in terms of the strength of correlation of social diversion and individual communication styles between groups of nurses and psychologists (Z = – 3.36; p <.001) as well as nurses and doctors (Z = – 3.35; p <.001);
– in terms of the strength of correlation of social diversion and Readiness for cooperation between groups of nurses and psychologists (Z = – 2.18; p = .029) and nurses and doctors (Z = – 2.07; p = .039).

Table 9. Relationship between the level of communication competences and the level of styles of coping with stress of the examined doctors, nurses and psychologists

			Communication barriers	Communication tactics	Individual communication styles	Readiness for cooperation
Task-oriented style	Doctors	Pearson's r	.123	.173	.193	.078
		p-value	.334	.171	.127	.540
	Nurse	Pearson's r	.287	.421	-.036	.007
		p-value	.249	.082	.888	.977
	Psychologist	Pearson's r	.600	.080	.832	.948
		p-value	.051	.816	.001	<.001
Emotion-oriented style	Doctor	Pearson's r	-.150	.109	-.197	.112
		p-value	.238	.390	.119	.378
	Nurse	Pearson's r	-.151	.370	.546	-.102
		p-value	.550	.130	.019	.688
	Psychologist	Pearson's r	-.527	-.184	-.971	-.818
		p-value	.096	.587	<.001	.002
Avoidance-oriented style	Doctor	Pearson's r	.206	.191	.173	.022
		p-value	.102	.130	.172	.862
	Nurse	Pearson's r	-.035	-.223	-.120	-.488
		p-value	.890	.374	.635	.040
	Psychologist	Pearson's r	.543	.407	.582	.568
		p-value	.084	.214	.060	.068

Distraction seeking	Doctor	Pearson's r	.124	.020	.038	-.121
		p-value	.328	.878	.768	.341
	Nurse	Pearson's r	-.107	-.037	.122	-.514
		p-value	.673	.884	.630	.029
	Psychologist	Pearson's r	-.489	-.495	-.301	-.275
		p-value	.127	.122	.369	.413
Social diversion	Doctor	Pearson's r	.307	.424	.352	.331
		p-value	.014	<.001	.004	.008
	Nurse	Pearson's r	.022	-.441	-.536	-.248
		p-value	.931	.067	.022	.321
	Psychologist	Pearson's r	.808	.755	.702	.606
		p-value	.003	.007	.016	.048

The relationship between the level of communication competences and the level of anxiety in the entire study population

In the last step, the correlation between the level of communication competences and the level of anxiety of the respondents was verified (Tab. 10). A series of analyzes of correlations with the Pearson r coefficient were performed. Only three correlations were noted at the level of statistical tendency: the level of state anxiety negatively correlated with the level of communication tactics, while the level of trait anxiety positively correlated with the level of individual communication styles and the readiness for cooperation. However, the strength of these relationships was very low. Other relationships were not even close to statistical significance.

Table 10. Relationship between the level of communication competences and the level of anxiety of the examined persons

		Communication barriers	Communication tactics	Individual communication styles	Readiness for cooperation
State anxiety	Pearson's r	-.159	-.175	.108	.045
	p-value	.127	.093	.304	.667
Trait anxiety	Pearson's r	.107	-.081	.195	.173
	p-value	.306	.437	.061	.097

The relationships between the variables analyzed separately in the group of doctors, nurses and psychologists were verified (Tab. 11). State anxiety correlated negatively with the level of communication barriers in doctors, and positively with individual communication styles and readiness for cooperation in psychologists. The strength of the first of these correlations was low, the second one was very high, and the third one was high. Trait anxiety correlated statistically significantly with the level of communication barriers, individual communication styles and readiness for cooperation in psychologists. All these correlations were positive, the first was strong, the other two very strong. Moreover, four correlations were noted at the level of statistical tendency: State anxiety negatively correlated with the level of communication tactics of doctors and nurses, and positively with the readiness for cooperation of nurses. The strength of the first was low, while the other two were moderately high. In turn, trait anxiety positively correlated with the individual communication styles of doctors. However, the strength of this relationship was low. Other relationships were not even close to statistical significance.

The differences in strength and / or sign between particular correlations in the occupational

groups were analyzed using the Fisher's Z-test. The following differences were noted:

– in terms of the strength of correlation of state anxiety and communication barriers between groups of doctors and psychologists ($Z = -2.14$; $p = .032$);
– in terms of the strength of correlation of state anxiety and individual styles of communication between groups of doctors and psychologists ($Z = -2.81$; $p = .005$) and nurses and psychologists ($Z = -3.05$; $p = .002$);
– in terms of the strength of correlation of state anxiety and readiness for cooperation between groups of doctors and psychologists ($Z = -2.49$; $p = .013$);
– in terms of the strength of correlation of trait anxiety and communication barriers between groups of doctors and psychologists ($Z = -1.93$; $p = .054$);
– in terms of the strength of correlation of trait anxiety and individual styles of communication between groups of doctors and psychologists ($Z = -2.94$; $p = .003$), nurses and psychologists ($Z = -3.83$; $p <.001$) and doctors and nurses ($Z = 2.00$; $p = .046$);
– in terms of the strength of correlation of trait anxiety and attitude towards cooperation between groups of doctors and psychologists ($Z = -3.01$; $p = .003$) and nurses and psychologists ($Z = -1.99$; $p = .047$).

Table 11 Relationship between the level of communication competences and the level of anxiety of the examined doctors, nurses and psychologist

			Communication barriers	Communication tactics	Individual communication styles	Readiness for cooperation
State anxiety	Doctor	Pearson's r	-.247	-.208	.041	-.119
		p-value	.049	.099	.749	.347
	Nurse	Pearson's r	-.169	-.449	-.233	.420
		p-value	.503	.062	.353	.083
	Psychologist	Pearson's r	.482	.163	.800	.673
		p-value	.133	.631	.003	.023
Trait anxiety	Doctor	Pearson's r	.044	-.102	.210	.018
		p-value	.733	.423	.095	.891
	Nurse	Pearson's r	.276	-.095	-.347	.274
		p-value	.268	.708	.158	.272
	Psychologist	Pearson's r	.623	.186	.866	.818
		p-value	.040	.585	.001	.002

DISCUSSION

The medical staff of hospital wards – irrespective of the profession – need to deal with the variety of specific challenges associated with team work, high professional demands and responsibility, patients suffering, expectations of the family – to mention just a few [15, 16, 17, 18]. Our study brings many important observations concerning the level of anxiety, coping with stress and communication styles in the workers of hospital wards. There are important differences between the groups of doctors, nurses and psychologists, requiring individual consideration, psychoeducation and support, when needed. Confronted with work emotional challenges, the medical personnel are trying to find ways of coping. We have indicated that the chosen coping strategies vary depending on the medical profession. Task oriented style turned out to be

typical for medical doctors and is significantly less used by nurses. Psychologists more often use the avoidance style, trying to deal with emotions by searching contact with people rather than directly confronting with the stressful situation. Perhaps paradoxically psychologists are able to be more focused on solving communication problems while being motivated by a stressful, challenging situation. Interestingly, we found that higher level of stress makes psychologists also less willing to cooperate contrary to the doctors who seem to be more ready to cooperate when they experience higher level of stress. This may be explained inter alia by the fact, that the doctors, as indicated, tend to be task oriented. The higher level of stress motivates them even more to take some action and find solution, also by means of greater readiness for cooperation. However this evokes a question about their emotional state in such situations [19-21]. We can hypothesize that while being ready to act and cooperate they tend to suppress their, which later on translates to the burn out syndrome, as described by many researchers [22-26].

In depth analysis with the use of Fisher's test allowed to observe significant differences between the professions referring to the correlations between psychological parameters and communication competences. A tendency to use the avoiding strategies while confronted with stressful situation and to search for group support when dealing with difficulties were observed in the group of nurses. When referring to the correlation between communication competences and psychological parameters, we indicated many important observations: when psychologists find themselves in a stressful situation, their individual communication abilities deteriorate. This observation is in line with the findings of Cushway D, Tyler P [27] who explored the consequences of stress for clinical psychologists, whose main tool of work is communication. Our results suggest that especially in the group of nurses careful attention should be paid to boarding their competences in dealing with stress by active actions and by regaining the feeling of self-effectiveness. In turn, the emotional burden of psychologists and doctors should be taken into account by organizing, for instance, Balint groups [28, 29]. The supervision and network support for nurses, taking into consideration their needs and role in the group could be beneficial for their role in the wards [30].

Considering the level of anxiety, we observed that it plays different role depending on the profession. We indicated that the level of state anxiety negatively correlated with the level of communication tactics, while the level of trait anxiety positively correlated with the level of individual communication styles and the readiness for cooperation. Trait anxiety correlated statistically significantly with the level of communication barriers, individual communication styles and readiness for cooperation in psychologists. State anxiety negatively correlated with the level of communication tactics of doctors and nurses, and positively with the readiness for cooperation of nurses. In turn, trait anxiety positively correlated with the individual communication styles of doctors. We may assume, also based on previous observations [31, 32] that feeling anxious may interfere with the tactics used but at the same time proper group cooperation seems to have potential of lowering the level of anxiety. Doctors who experience chronic anxiety tend to develop individual communication strategies while for nurses readiness for cooperation would be more optimal strategy.

This study has certain limitations. The number of participants in the subgroups is unequal, however it is large enough to allow for comparisons between the three professions. Nonetheless, assessment of differences between certain medical specializations warrants further research. It might be expected that results of some analyses lack significance because of too small number of participants. Bearing that in mind we are treating this study as preliminary for a broader research project that is already in progress. Yet, we decided to present our observations already on that stage, as we believe they offer valuable input, showing that the relationship between communication competences and the selected psychological parameters: anxiety, the level of stress and coping with stress strategies in medical staff may have multidimensional consequences for everyday functioning of the healthcare professionals.

To conclude, the healthcare professionals use various coping strategies when exposed to stressful situations. The choice of strategies depends

partly on their profession. The coping strategies being used correlate with the communication strategies. Also, the level of anxiety is associated with all dimensions of communication – barriers, tactics and readiness for cooperation.

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