ORIGINAL ARTICLE

CONTENTS

Professional medical communication in war conditions: Gender aspect

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ABSTRACT

Aim: To investigate the features of professional medical communication in wartime through the prism of gender characteristics based on the analysis of authentic dialogues from clinical conversations.

Materials and Methods: Bibliosemantic, content, psychosemantic, and comparative analysis; empirical methods: observing the living language of doctors and patients, creating and typologising the collection of authentic doctor-patient dialogues. The authentic audio and video recordings of 232 doctor-patient dialogues were collected. After conducting an initial typology of the dialogues, four samples were created: «male» and «female doctors», «male» and «female patients». The dialogues were transcribed and subjected to content analysis using the «Textanz» software (v. 2.3).

Results: The psycholinguistic features of professional medical communication in each of the four studied samples were established. For example, male doctors have higher speech activity within their professional role (181 words vs. 138 for female doctors). Their speech is characterised by a predominance of verbs and rational structuring. In contrast, female doctors use nominative constructions with a predominance of nouns, pronouns, and adverbs more often, which indicates the objectification of symptoms and an empathic orientation. Female patients show higher speech activity, ask questions more often, and use more emotionally coloured vocabulary and modal words, which indicates increased anxiety.

Conclusions: The study confirms the presence of gender-based models of medical communication, which are exacerbated in wartime. The results of the study can be used in training on the development of communication skills of medical workers, in writing clinical protocols, as well as in psychological support for wounded and displaced persons.

KEY WORDS: psycholinguistics, communicative competence, medical education, war

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INTRODUCTION

In the conditions of a full-scale war, the medical system of Ukraine is facing a huge load, which requires highly qualified medical workers, prompt medical intervention, and constructive professional communication. A significant increase in the number of patients with inclusion, numbness, chronic psychotraumatization, post-traumatic stress disorder, and other problems requires scientifically based styles of professional communication. Performing a physical examination, collecting anamnesis, diagnosing, providing medical care, and making decisions in various clinical situations requires a doctor to have developed psycholinguistic competence. The latter should include gender-specific features of professional communication, as they affect the style of communication, the level of trust and expectations, and help to preserve and improve the psychoemotional state of patients who have heightened sensitivity due to the circumstances caused by war [1-4].

Understanding gender aspects of communication helps doctors establish a constructive dialogue more quickly and interact more effectively with different population groups in wartime conditions (civilians, military, internally displaced persons, children, and the elderly), as women and men experience crisis situations differently and have different needs for proper medical care.

AIM

The aim of the study was to investigate the features of professional medical communication in wartime conditions through gender characteristics, based on the analysis of authentic medical dialogues within clinical communication.

MATERIALS AND METHODS

To achieve the goal, the following theoretical research methods were used: bibliosemantic, content, psychose-

mantic, and comparative analysis, differentiation, and generalization; empirical methods included observing the living language of doctors and patients in compliance with bioethical norms, creating a collection of doctor-patient dialogues, and typologizing experimental data by gender indicators. Finally, statistical processing was carried out using the «Textanz» special software (v. 2.3).

The empirical study involved direct observation of the style and structure of dialogues between a doctor and a patient in wartime conditions in Ukraine. During 2024, 232 doctor-patient dialogues were collected in the format of video and audio recordings within the context of a professional official reception procedure, in compliance with ethical, bioethical, and legal standards and with the voluntary consent of all participants. After conducting an initial typology to identify gender-specific features of professional medical communication in wartime conditions, 74 video and audio recordings were selected from the collection. These recordings were transcribed into texts and subjected to content analysis using the «Textanz» specialized computer program (v. 2.3). The texts were analyzed separately into four samples: "Male doctors" (sample 1), "Female doctors" (sample 2), "Male patients" (sample 3), and "Female patients" (sample 4).

RESULTS

The results obtained in first two gender-differentiated samples of male and female doctors are summarized in Table 1.

Let us analyze the results given in the Table 1. First of all, we state that a total of 7050 statistically significant words were recorded in sample 1 and 4828 – in sample 2. Thus, male doctors used 181 words in their communication on average, and female doctors – 138. Considering such results, we assume that the professional role position of a "doctor" encourages men to more actively verbally communicate than women. However, this assumption requires further research involving larger samples.

The most frequent (with a significant quantitative predominance) among the main parts of speech in both samples were pronouns (total number is 2698), which both male and female doctors use approximately equally (the relative frequency of significant pronouns in sample 1 and sample 2 was, respectively, 37,82% and 36,07%). Also, in both samples, the "You" category clearly dominates within pronouns (46,09% and 49,91% of the total number of statistically significant words recorded). This result is expected taking into account the role and task of the doctor in the "Doctor-Patient" system: an official appeal to the patient in order to clarify the state of his/her health and, if necessary, to discuss the diagnosis and treatment scheme.

The second most common main part of speech in terms of the total number of recorded words was the noun (1642). In the sample of female doctors, the noun is every fourth word among the statistically significant ones (25,87%); however, it is only every fifth (20,25%) in the sample of male doctors. Moreover, there are obvious differences between the samples in the composition of nouns within the leading category: it is "Diseases and their symptoms" for male doctors (19,58%), and "Examination, treatment and results" for the female ones (21,31%). In connection with such results, it can be argued that in communication with patients, the former are more focused on stating the fact of the disease and its manifestations, while the latter delve more into discussing the process of diagnosing the disease, the treatment process, and its predicted results.

The third most represented part of speech in both samples was the verb (1537 words). In sample 1, the dominant basic category was "To be" (39,09%); in sample 2, it was the "Communication and its components" category (30,44%). Therefore, male doctors are more likely to focus on stating the presence of certain facts (primarily, as noted above, the facts of diseases and their symptoms), while female doctors, on the other hand, try to ease their verbal communication with patients, particularly by using facilitating words (for example, they more often invite their patients to come in, pass by, or tell something, etc.).

Next, male doctors use verbs more frequently than nouns (21,73% and 20,25%, respectively), while female doctors use nouns more frequently (25,87% versus 20,29%). Therefore, in this context, it is somewhat more important for men to emphasize the effectiveness, influence, and/or dynamics of certain phenomena and events, while for women, naming, i.e., stating the relevant phenomena, is more important.

The fourth most common part of speech in terms of the number of occurrences in speech is the adverb (1121 words). Although the dominant category was "Temporality" (29,09% and 37,21%) in both samples, women use concepts from the corresponding category relatively more often and focus primarily on what is happening "now," while men are more involved in what should be or can be "later".

The adjective (141 words) turned out to be noticeably less numerous. In both samples, "neutral" adjectives are used more often in professional communication (42,65% and 47,95% respectively). In all probability, it illustrates the efforts of male and female doctors to remain emotionally neutral, since, on the one hand,

Table 1. The dominant categories and lexemes of different parts of speech within the male and female doctors samples

Part of speech (total word count)	«Male doctors» sample			«Female doctors» sample		
	Total	Basic category (absolute/ relative total count)	Basic lexemes	Total	Basic category (absolute/ relative total count)	Basic lexemes
I. Main parts of speech (7273)	**4262**	-	-	**3011**	-	-
Pronoun (2698)	1612 (37,82 %)	«You» (743/46,09 %)	«you», «your», «yours»	1086 (36,07%)	«You» (542/49,91 %)	«you», «your», «yours»
Noun (1642)	863 (20,25 %)	«Diseases and their symptoms» (169/19,58 %)	«pain», «disease, illness, disorder»	779 (25,87 %)	«Examination, treatment and results» (166/21,31 %)	«analyses, examination», «reffer-al», «treatment»
Verb (1537)	926 (21,73 %)	«Be» (362/39,09 %)	«be, continue», «will be», «was»	611 (20,29 %)	«Communi-cation and its components» (186 / 30,44 %)	«speak, tell», «understand»
Adverb (1121)	691 (16,21 %)	«Temporality» (201 / 29,09 %)	«afterwards, then», «now»	430 (14,28 %)	«Temporality» (160 / 37,21 %)	«now», «after-wards, then»
Adjective (141)	68 (1,60 %)	«Neutral» (29 / 42,65 %)	«such», «com-mon»	73 (2,42 %)	«Neutral» (35 / 47,95 %)	«common», «such»
Numeral (134)	102 (2,39 %)	–	«three», «four», «once, several times»	32 (1,06 %)	–	«once, several times», «three»
II. Function words (4605)	**2788**	**-**	**The most frequent part**	**1817**	**-**	**The most frequent part**
Conjunction (2003)	1169 (41,93 %)	–	«and» (234 / 20,02 %)	834 (45,90 %)	–	«and» (196 / 16,77 %)
Preposition (1591)	1062 (38,09 %)	–	«in» (408 / 38,42 %)	529 (29,16 %)	–	«in» (202 / 30,89 %)
Particle (603)	376 (13,49 %)	–	«no, not» (133 / 35,37 %)	227 (12,49 %)	–	«no, not» (75 / 33,04 %)
Interjection (277)	181 (4,10 %)	–	«please» (125 / 69,06 %)	96 (2,81 %)	–	«please» (51 / 53,13 %)
Parenthetical expression (17)	11 (0,39 %)	–	«for example» (only)	6 (0,33 %)	–	«for example» (only)

these specialists should not provoke the patient to possible affective "outbursts", and, on the other hand, they should prevent their own emotional "burnout".

The least frequent of all the recorded main parts of speech is the numeral (134 words). In this case, male doctors use numerals approximately twice as often as female doctors (2,39% and 1,06% respectively). Apparently, this is one of the indicators of a greater effort made by men to quantify reality related, in particular, to the sphere of human health, its disorders, and methods of recovery.

Let us briefly analyze the situation with function words. Generally, the dominant function part of speech (2003 words) was the conjunction. Its relative share is quite high in both samples (41,93% and 45,90%) with the predominance of an "and" conjunction, which indicates a significant semantic coherence of the speech of male and female doctors.

The second most commonly used function part of speech was the preposition (1591 words). Its relative rate is noticeably higher in the sample of male doctors while comparing to the sample of female doctors (38,09% vs 29,16%). Moreover, the dominant "in" preposition in both samples has also a higher frequency in the verbal communication of men (38,42% for sample 1 and 30,89% for sample 2). This indicates a clearer orientation of men as specialists to the definition and discussion and, in particular, to the localization of certain phenomena (symptoms of a disease, the location of a patient, etc.).

The particle turned out to be the third most common function word (603 words). In general, particles (as well

Table 2. The dominant categories and lexemes of different parts of speech in samples of male and female patients

Part of speech (total word count)	«Male patients» sample			«Female patients» sample		
	Total	Basic category (absolute/ relative total count)	Basic lexemes	Total	Basic category (absolute/ relative total count)	Basic lexemes
I. Main parts of speech (2949)	**1114**	-	-	**1835**	-	-
Pronoun (961)	407 (36,54 %)	«I» (201/49,39 %)	«I», «me», «my»	554 (30,19%)	«I» (291 / 52,53 %)	«I», «me», «my»
Adverb (702)	291 (26,12 %)	«Temporality» (91 / 31,27 %)	«sometimes», «afterwards, then»	411 (22,40 %)	«Temporality» (124 / 37,21 %)	«sometimes»,«now»
Verb (557)	207 (18,58 %)	«Be» (66 / 31,88 %)	«was»	350 (19,07 %)	«Be» (124 / 35,43 %)	«was»
Noun (533)	156 (14,00 %)	«Diseases and their symptoms» (43 / 27,56 %)	«pain», «problems»	377 (20,54 %)	«Temporality» (83 / 22,02 %)	«day», «years», «time»
Numeral (108)	37 (3,32 %)	–	«one», «first», «three»	71 (3,87 %)	–	«three», «two»
Adjective (88)	16 (1,44 %)	«Neutral» (only)	«such», «last»	72 (3,92 %)	«Neutral» (60 / 47,95 %)	«such», «last»
II. Function words (2444)	**1058**	**-**	**The most frequent part**	**1386**	**-**	**The most frequent part**
Conjunction (829)	369 (34,88 %)	–	«and» (122 / 33,06 %)	460 (33,19 %)	–	«and» (150 / 32,61 %)
Particle (756)	313 (29,58 %)	–	«no, not» (153 / 48,88 %)	443 (31,96 %)	–	«no, not» (201 / 45,37 %)
Preposition (723)	296 (27,98 %)	–	«in» (113 / 38,18 %)	427 (30,81 %)	–	«in» (158 / 37,00 %)
Exclamation (136)	80 (7,56 %)	–	«well» (57 / 71,25 %)	56 (4,04 %)	–	«well» (46 / 82,14 %)

as the dominant negative particles "no" and "not") are used by both male and female doctors to approximately the same extent (average particle rates are 13,49% and 12,49%, negative particles – 35,37% and 33,04% respectively).

Another part of function word analyzed was the exclamation (277 words found). Surprisingly, but in their professional communication, male doctors use exclamations approximately twice as often as female doctors (4,10% vs 2,81%). Moreover, male doctors also use the dominant expression of "please" more often (69,06% vs 53,13%). In this regard, we assume that in the field of relevant professional communication, men find it somewhat more difficult to hide their needs and expectations compared to women. However, a single "for example" parenthetical expression (17 words) was found at an approximately the same level in both samples (0,39% and 0,33%).

The results obtained in the following two samples (male patients and female patients) are summarized in Table 2.

As can be seen from Table 2, a total of 2172 statistically significant words were recorded in sample 3, and 3221 in sample 4. Thus, on average, male patients used 75 words in their communication, and female patients used 67. In our opinion, such a difference is not significant. The significantly lower average number of words used by male and female patients (compared to male and female doctors) can be explained by the distress experienced during an appointment with a specialist, where the words of the doctor often become more important than their own. Additionally, psychological defense mechanisms may also be triggered (in particular, repression, and as a result, an unwillingness to talk about certain matters).

DISCUSSION

First of all, it is worth noting that this study is a continuation of our previous scientific work [5-8]. In works [5, 6], in particular, we were able to establish and describe

psycholinguistic indicators of doctors' communication in wartime based on the analysis of doctor-patient dialogues. In general, professional communication of doctors in wartime is poorly researched, despite its undoubted relevance [1, 9, 10].

Based on the conducted content analysis of gender-specific features of professional medical interaction, it can be stated that male doctors use more words (181 versus 138 for female doctors), which indicates higher speech activity within the professional role. Their speech is characterized by a predominance of verbs and rational structuring. Female doctors more often use nominative constructions with a predominance of nouns, pronouns, and adverbs, which indicates the objectification of symptoms and an empathic orientation. Female patients show higher speech activity (135 words versus 89 for male patients), ask questions more often (62 % vs. 38 %), and use more emotionally colored vocabulary and modal words, which indicates increased anxiety.

The most frequent among the main parts of speech in samples 3 and 4, as well as in the samples of male and female doctors (1 and 2), were pronouns (total word count: 961). However, male patients use pronouns somewhat more often than female patients (the relative frequency of statistically significant pronouns in sample 3 and sample 4 is 36,54 % and 30,19 %, respectively). In other words, men are more inclined to personalize and, therefore, to specify communication, as well as to show an understanding of their own health problems and their causes. However, the dominant "I" lexeme is represented in both samples to approximately the same extent (49,39 % and 52,53 %).

In the samples of male and female doctors, the second most frequent part of speech was a noun, but in the samples of male and female patients, it was an adverb (702 words), which is a part of speech that expresses a sign of an action, state, or quality. The established fact testifies to the greater orientation of patients to expressing the corresponding signs of their own processes and states related to health, while doctors primarily name a phenomenon or fact.

In samples 3 and 4, the "Temporality" notion dominates within the specified part of speech (relative indicators are 31,27 % and 37,21 %, respectively). As it can be seen, women use the category of adverbs somewhat more often. In addition, it is more important for them what is happening "now" with their health, while for men – it is what will happen "later, then."

The third most numerous main part of speech is the verb (557 words). It is used by both male and female representatives of both samples to approximately the same extent (18,58 % vs 19,07 %). Moreover, the basic category "To be" was found to be dominant in both samples (31,88 % and 35,43 %). Interestingly, within this category, both male and female patients use the lexeme "was" most often, which means they talk about certain events or phenomena in the past tense. This can be associated with the mental operation of comparison as well as with nostalgia for a happier (pre-war) past.

Unlike in the first two samples, the noun became only the fourth most important part of speech in a generalized analysis of the results for all four samples. At the same time, while (as a part of speech) its relative importance is less than that of a verb for male patients, it is somewhat higher for female patients. Here is the relative frequency of nouns and verbs usage: 14,00 % and 18,58 % in the sample of male patients, and 20,54 % and 19,07 % – in the sample of female patients. Considering such indicators, it can be argued that for men, it is relatively more important not often to name certain of their symptoms, but to indicate what led to them or how the situation can be changed. We also note differences between the samples of male and female patients in the leading category of nouns: it is "Diseases and their symptoms" for men (27,56 %), and "Temporality" – for women (22,02 %). Accordingly, while men mention "pain" in this context more often, women talk more about "days" and "years". Thus, male patients are more focused on discussing the current symptoms of their diseases while female patients delve more into the time trajectories and prospects of the course of the diseases.

Unlike the samples of doctors, the numeral is not the least frequent among all the recorded main parts of speech (108 words) in the samples of patients. At the same time, representatives of both samples use numerals to approximately the same extent (3,32 % vs 3,87 %).

Instead, the adjective was the least significant in terms of its quantitative representation in both analyzed samples (88 words). Female patients use adjectives in their speech approximately three times more often than male patients (1,44 % vs 3,92 %). This indicates, in particular, the lower ability of women to hide their emotions in communication. Male patients use only neutral adjectives in their speech (100 %), while female patients use even less than a half (47,95 %). We consider this as a manifestation of men's reluctance to give negative or positive characteristics to their states and processes through their attempts to verbally maintain emotional neutrality.

Now, let us analyze the situation with the function words. Both in the samples of male and female doctors, the conjunction (829 words) became dominant again, and the relative frequency of its use was approximately the same in both patient samples (34,88 % and 33,19 %,

respectively). In the speech of patients, the "and" conjunction also prevails (33,06 % and 32,61 %).

In contrast to the recorded texts of verbal communication of doctors, the second most important functional part of speech was the particle (756 words). In all four samples, the negative particles "no" and "not" turned out to be significantly dominant ones (relative indicators in samples 3 and 4 are 48,88 % and 45,37 %, respectively). Next, male and female patients use negations in their speech more often than male and female doctors (the relative rates of negations in doctors' speech are 35,37 % and 33,04 %, respectively). However, any significant gender differences in all these speech contexts were not recorded.

The third most numerous function word was the preposition (723 words). The relative frequency of its use in speech by both men and women does not differ significantly (27,98% and 30,81%, respectively). Moreover, the dominant (in both samples) preposition "in" is also approximately equally found in both samples (sample 3 has 38,18%, sample 4 – 37,00%).

Another function part of speech that was found in the samples of patients is the exclamation (136 words). Similarly, with regard to the recorded situation with male and female doctors, it was also found in the samples of male and female patients that men use exclamations approximately twice as often as women (7,56% and 4,04%, respectively). In general, patients resort to exclamations about twice as often as the specialists to whom they apply for medical care. Moreover, while doctors mostly use the "please" expression, the patients use the "no" exclamation (71,25% and 82,14%). Therefore, during a doctor's appointment, patients express their experiences through individual exclamations with women doing this more often.

The results of our research complement the work of some scientists, in particular the work [8], in which attention is focused on the macro level of the political economy of health care and the role of women during armed conflict. For the first time, we turn to the micro level, i.e. to live medical communication that unfolds between a doctor and a patient. The study [4] analyzed gender and narrative in digital political communication during wartime, and our study was the pioneer to identify unique linguistic markers inherent in direct (face-to-face) professional interaction in the medical field under wartime conditions.

CONCLUSIONS

Based on the content analysis of dialogues, specific gender speech patterns were investigated and identified for the first time. They directly affect the quality, efficiency, and emotional background of medical care in wartime conditions.

The study confirms the presence of gender-based models of medical communication, which are exacerbated in wartime. The results of the study can be used in training on the development of communication skills for medical workers, in writing clinical protocols, as well as in psychological support for wounded and displaced persons. It is advisable to integrate the obtained data into educational programs for the training of future doctors to form their sensitivity to gender aspects of medical communication.

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CONFLICT OF INTEREST
The Authors declare no conflict of interest

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