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Attitudes of Polish-speaking and English-speaking medical students towards death during the COVID-19 pandemic

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Abstract

Introduction and purpose. Last year, since the spread of COVID-19 pandemic, medical students have faced new challenges, related to growing numbers of people who are and will be hospitalized as well as deaths among patients in healthcare facilities. The purpose of this study, is analysis and comparison of attitudes of Polish-speaking and English-speaking students towards death, during the COVID-19 pandemic.
Material and methodThe study was conducted in an electronic form on a group of Polish and foreign exchange students of medical faculties. In total, 277 people aged 19 to 38, including 141 of Polish nationality and 136 of non-Polish nationality, participated in the study. The study used a sociodemographic questionnaire and the Death Attitude Profile (DAP-R-PL). The questionnaire consists of 5 aspects, that relate to different attitudes towards death: fear of death, death avoidance, neutral acceptance, approach acceptance and escape acceptance.
ResultsThe most common attitude represented in both groups was neutral acceptance of death. Polish students obtained higher results in scales fear of death and escape acceptance compared to foreign students. The results showed, that the strongest correlation occurs between escape acceptance and fear of death.
ConclusionsIn most cases, adaptive beliefs towards death shown by both groups of respondents indicates, that they will handle working with dying patients. However, higher degree of fear of death and escape acceptance amongst Polish students indicates the need to introduce thanatology education into course of studies.

Key words: attitude to death, medical students, COVID-19

Introduction

From the time when life exists on Earth, first in a primitive form, then more and more complex, an environment of bacteria and viruses has developed in parallel. So they have always accompanied us, from the very beginning of human existence. We do not have sources from which we could draw knowledge about the influence of microbes on our very distant ancestors, but we have known from more recent times that humanity was plagued by epidemics (developing over time in a pandemic) with enormous power to destroy human life [1]. And so, for example, in the years 165 - 180 there was the Antonin plague, which claimed 5 million lives, in the period from 1520 to 1979 smallpox was prevalent (56 million deaths), from 1918 to 1920 the "Spanish" flu (40 - 50 million deaths) , since 1981 HIV / AIDS still uncontrolled (35 million deaths) [2]. The outbreak of the new pandemic began in late December 2019. in Wuhan, China [3]. It was caused by the SARS-CoV-2 coronavirus causing the COVID-19 disease, identified in March 2020 by the WHO as a pandemic [4]. The coronavirus spread easily in the present world, where frequent international travel and high urbanization allow for the rapid transmission of pathogens between countries and continents [5]. It has been a huge challenge for the governments of all countries to tackle this pandemic. The health service, the entire health care system, has taken the front line in the fight against the spread of COVID-19. The existing potential threat to huge numbers of people has resulted in restrictions in their movement. Both infected and uninfected patients were isolated in health care facilities [6]. Visiting the sick was forbidden. The medical personnel suffered enormously physically and emotionally exhausting activities, related not only to the application of specific medical treatments to patients, but also helping patients to adapt to the rapidly changing conditions caused by the pandemic, to cope with disease, pain and mental suffering. dying. Patients with COVID-19 often lack time to reflect on the possibility of their death, because the deterioration of health may be rapid and the end of life comes unexpectedly [7]. The number of dying patients who did not have contact with their relatives and support in the last moments of their lives increased. Therefore, it seems natural now that medical personnel often replace their relatives in the process of dying, and whose personnel should be provided with psychological care to reduce the risk of such disorders as depression, post-traumatic stress disorder or occupational exhaustion [8, 9, 10].

It is observed that in the last dozen or so years there has been a change in social attitudes regarding matters related to death and the quality of dying. Attempts are made to restore dignity to dying, and the quality of life in its last stage increases. Death does not have

to be a taboo subject, people who leave share their thoughts also through internet blogs. The number of people interested in volunteering is growing and support groups are being created for people in the last stage of their lives [11]. In the last year since the pandemic spread, medical students have faced new challenges related to the growing numbers of people who are and will be hospitalized and the growing number of patient deaths in healthcare facilities. Although these students prepare to serve patients with their medical knowledge and skills, and realize that they will encounter death in their work, they fear the inevitable is natural. A good solution in overcoming fear and getting used to death is to include in the study program content that will reduce this fear and help generate relationships with a dying patient [12]. The attitude towards death undoubtedly depends on the cultural, emotional and religious level. It happens, that some students have a negative attitude towards death and it is not in line with the professed religious norms [13]. Fear of death may be associated with pain, suffering, thinking about losing everything that is a human property, disappearing, forgetting [14, 15]. In people who had no contact with the dying person, this fear is greater [16]. The publication shows how the pandemic influenced the perception of death by medical students as people standing on the front lines of the fight against the coronavirus. The study conducted among Polish and foreign students showed that they are mainly characterized by adaptive perception of death as an integral process of life [17].

Purpose

The aim of the study was to analyze and compare the attitudes towards the deaths of Polish and English-speaking medical students during the COVID-19 pandemic.

Material and methods

The research was conducted in an internet form on a group of Polish and foreign medical students. In total, 277 people aged 19 to 38 participated in the study ($M = 23.73$; $SD = 3.13$), with women constituting the majority ($N = 197$; 71.1%) compared to men ($N = 80$; 28.9%). About one-fourth of the surveyed sample were residents of cities with more than 500,000. ($N = 74$; 26.7%) or cities with 100,000 to 500,000 inhabitants ($N = 72$; 26.0%), less than one-fifth were people living in a city with less than 10 thousand inhabitants ($N = 53$; 19.1%), city dwellers from 10 to 50 thousand inhabitants ($N = 49$; 17.7%), and city dwellers from 50,000 to 100,000 inhabitants ($N = 29$; 10.5%). The vast majority of respondents declared that they are not particularly at risk of coronavirus infection ($N = 263$; 94.9%), and that such a threat does not concern their relatives ($N = 210$; 75.8%). Most of the studied sample were people

who had not been infected with COVID-19, while nearly half had someone like that in their family (N = 132; 47.7%). The group of Polish-speaking students was 141 people, including 111 women (78.7%) and 30 men (21.3%). The largest share were people studying medicine (N = 56; 39.7%) and living in towns with a population of 100,000 to 500,000 inhabitants (N = 42; 29.8%). The group of English-speaking students was 136 people, 86 women (63.2%) and 50 men (36.8%). The most numerous subgroup were medical students (N = 124; 91.2%) and people from cities with more than 500,000 inhabitants (N = 51; 37.5%). The most numerous subgroup were medical students (N = 124; 91.2%) and people from cities with more than 500,000 inhabitants (N = 51; 37.5%).

Table 1

The frequency distribution of sociodemographic variables

		N	%
gender	woman	197	71.1%
	man	80	28.9%
nationality	Polish	141	50.9%
	non-Polish	136	49.1%
size of the place of origin	less than 10,000 residents	53	19.1%
	from 10 to 50 thousand residents	49	17.7%
	from 50 to 100 thousand residents	29	10.5%
	from 100 to 500 thousand residents	72	26.0%
	over 500 thousand residents	74	26.7%
field of study	medical	180	65.0%
	cosmetology	7	2.5%
	health psychology	9	3.2%
	physiotherapy	20	7.2%
	dentistry	25	9.0%

	obstetrics	7	2.5%
	medical analyst	7	2.5%
	pharmacy	12	4.3%
	biotechnology	4	1.4%
	dietetics	3	1.1%
	nursing	1	0.4%
	emergency medical services	1	0.4%
	dentistry	1	0.4%
especially at risk of coronavirus	no	263	94.9%
	yes	14	5.1%
cohabiting people are particularly at risk of coronavirus	no	210	75.8%
	yes	67	24.2%
has been infected with coronavirus	no	259	93.5%
	yes	18	6.5%
someone close to you has had a coronavirus infection	no	145	52.3%
	yes	132	47.7%

The study used a sociodemographic questionnaire and the Death Attitude Profile-revised version (DAP-R-PL) by PTP Wong, GT Reker, G. Gesser). The translations and adaptations were made by P. Brudek, M. Sękowski, S. Steuden.

The proprietary questionnaire consisted of 12 questions concerning sociodemographic data (gender, age, nationality, place of residence, field of study) and the COVID-19 pandemic (fear of falling ill, belonging to risk groups, the fact of passing the coronavirus).

The DAP-R-PL questionnaire is a tool used to assess attitudes towards death. It consists of 32 questions that are rated on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The DAP-R-PL questionnaire consists of 5 dimensions that relate to different attitudes towards death: Fear of Death, Death Avoidance, Neutral Acceptance, Approach Acceptance, Escape Acceptance.

Table 2

Intercorrelations for the dimensions of the DAP-R tool (N = 277)

	1	2	3	4	5
fear of death	-				
death avoidance	0.604 **	-			
neutral acceptance	-0.361 **	-0.357 **	-		
approach acceptance	0.146 *	0.179 **	0.012	-	
escape acceptance	-0.028	-0.025	0.017	0.364 **	-

* $p < 0.05$; ** $p < 0.01$; 1 fear of death; 2 death avoidance; 3 neutral acceptance; 4 approach acceptance; 5 escape acceptance

Results

The analysis of the data obtained from the research was started with the calculation of descriptive statistics for the indicators of attitudes towards death (Table 3). To determine the shapes of the obtained distributions, the following statistics were calculated: range (min-max), measures of central tendency (mean) and dispersion (standard deviation), measures of asymmetry and concentration (skewness, kurtosis) and tests of normal distribution. To check whether the obtained distributions differ from the theoretical normal distribution, the Kolmogorov-Smirnov tests were calculated, suggested in the case of relatively large samples [18].

Table 3

Descriptive statistics of indicators (N = 277)

	<i>R</i>	<i>M.</i>	<i>SD</i>	<i>Sk</i>	<i>Kurt</i>	<i>D</i>
fear of death	1.00-7	3.93	1.48	0.10	-0.89	0.07 **
death avoidance	1.00-7	3.28	1.49	0.34	-0.59	0.08 **
neutral acceptance	1.60-7	5.71	1.06	-1.22	1.88	0.11 **
approach acceptance	1.00-7	3.42	1.69	0.19	-1.07	0.09 **
escape acceptance	1.00-7	3.43	1.58	0.33	-0.72	0.09 **
fear of getting COVID-19	1-5	2.70	1.17	0.02	-0.89	0.20 **
concerns about a loved one getting COVID-19	1-5	3.41	1.35	-0.44	-1.02	0.21 **

* p <0.05; ** p <0.01

The obtained values showed that all the variables showed statistically significant discrepancies from the normal distribution. The neutral acceptance indicator was characterized by a clear left-skewed asymmetry (the majority of high scores in the tested sample) and a clear leptokurticity (concentration of results around the mean). Moreover, the statistics of kurtosis for the variables of approach acceptance (total acceptance) indicated a clear platykurticity, i.e. a relatively large dispersion of the results relative to the mean. Due to deviations from the normal distribution, non-parametric tests were used to verify the hypotheses operating on continuous variables.

The following hypotheses were verified H1: Fear of getting coronavirus by oneself or a loved one correlates with fear of death, H2: Belonging to a risk group by oneself or a loved one is associated with an anxiety attitude towards death, H3: Passing coronavirus infection by oneself or someone else from close people correlates with a neutral acceptance of death, H4: Students who show a neutral attitude towards death are characterized by a low level of fear of contracting the coronavirus by themselves and their loved ones.

The results of correlation analyzes showed that the fear of contracting the coronavirus by yourself or a loved one correlated (to a weak degree) with the fear of death, which confirms the first hypothesis (Table 4). In the studied sample, the intensification of fears of infection and contracting the coronavirus, directed towards oneself and relatives, was associated with

an increase in the fear of death, avoidance of death and the results of the scale of escape from death, as well as with a decrease in neutral acceptance.

Table 4

Fear of getting sick with the coronavirus and fear of death; Kendall tau-b correlation coefficients (N = 277)

	concerns about infection and getting COVID-19	fears of a loved one becoming infected with and contracting COVID-19
fear of death	0.165 **	0.129 **
death avoidance	0.149 **	0.115 *
neutral acceptance	-0.144 **	-0.101 *
approach acceptance	0.017	0.034
escape acceptance	0.091 *	0.108 *

* p <0.05; ** p <0.01

A comparison of people from the high and low risk group of COVID-19 infection showed that people from the risk group showed statistically significantly higher results in terms of the severity of escaping death (Table 5). On the other hand, the comparison of people living with and without the risk of coronavirus revealed that the former obtained statistically significantly higher results on the basis of total acceptance of death (Table 6). There were no differences in the intensity of the other attitude indicators. The second hypothesis, assuming personal belonging to the risk group and relatives, including the attitude of fear of death, has been partially confirmed.

Table 5

Belonging to a risk group by oneself and attitudes towards death

	unchallenged (N = 263)		endangered (N = 14)		<i>AT</i>	<i>p</i>	<i>rg</i>
	<i>Mdn</i>	<i>Mrang</i>	<i>Mdn</i>	<i>Mrang</i>			
1.	3.86	138.49	4.36	148.54	1707.50	0.647	0.07
2.	3.20	140.66	2.60	107.89	1405.50	0.135	0.24
3.	5.80	140.02	5.50	119.75	1571.50	0.355	0.15
4.	3.40	139.82	2.75	123.54	1624.50	0.458	0.12
5.	3.40	136.51	4.00	185.71	1187.00	0.025	0.36

1 fear of death; 2 death avoidance; 3 neutral acceptance; 4 approach acceptance; 5 escape acceptance

Table 6

Belonging to a risk group by relatives and attitudes towards death

	unchallenged (N = 210)		endangered (N = 67)		<i>AT</i>	<i>p</i>	<i>rg</i>
	<i>Mdn</i>	<i>Mrang</i>	<i>Mdn</i>	<i>Mrang</i>			
1.	3.93	136.47	3.71	146.93	6504.00	0.352	0.08
2.	3.20	137.06	3.40	145.09	6,627.00	0.474	0.06
3.	6.00	142.15	5.60	129.14	6374.50	0.246	0.09
4.	3.15	131.79	4.10	161.60	5,521.00	0.008	0.22
5.	3.40	137.52	3.40	143.65	6723.50	0.585	0.04

1 fear of death; 2 death avoidance; 3 neutral acceptance; 4 approach acceptance; 5 escape acceptance

The results of the research conducted did not confirm the correlation between the coronavirus infection and the neutral acceptance of death. The intergroup comparisons turned

out to be statistically insignificant, which means that people who underwent COVID-19 infection did not differ in their attitudes towards death from those who did not suffer from such infection (Table 7). Studies have shown that there are statistically significant intergroup differences in the severity of the attitude of fleeing death due to the fact that a relative passed the coronavirus infection. The respondents who had relatives in the group of people after suffering from coronavirus infection were characterized by statistically significantly lower intensity of results in the discussed dimension (Table 8). Thus, this result partially confirms the third hypothesis.

Table 7

Passing the coronavirus infection through oneself and attitudes towards death

	did not pass the infection (N = 259)		passed the infection (N = 18)		AT	p	rg
	Mdn	Mrang	Mdn	Mrang			
1.	3.86	138.39	3.93	147.83	2172.00	0.628	0.07
2.	3.20	138.29	3.20	149.17	2,148.00	0.577	0.08
3.	5.80	138.69	5.90	143.53	2249.50	0.804	0.03
4.	3.40	138.73	3.75	142.86	2261.50	0.832	0.03
5.	3.40	140.57	2.40	116.44	1925.00	0.216	0.17

1 fear of death; 2 death avoidance; 3 neutral acceptance; 4 approach acceptance; 5 escape acceptance

Table 8

Passage of coronavirus infection by someone close to you and the attitude towards death

	did not pass infection (N = 145)		passed the infection (N = 132)		<i>AT</i>	<i>p</i>	<i>rg</i>
	<i>Mdn</i>	<i>Mrang</i>	<i>Mdn</i>	<i>Mrang</i>			
1.	3.86	138.03	3.86	140.06	9,430.00	0.833	0.01
2.	3.20	136.40	3.20	141.86	9192.50	0.570	0.04
3.	5.80	139.82	5.80	138.10	9451.50	0.858	0.01
4.	3.70	143.31	3.15	134.27	8945.50	0.348	0.07
5.	3.60	150.68	2.80	126.17	7876.50	0.011	0.18

1 fear of death; 2 death avoidance; 3 neutral acceptance; 4 approach acceptance; 5 escape acceptance

A comparison of attitudes towards death by nationality (Table 9) revealed that compared to the group of non-Polish nationality, Poles obtained statistically significantly higher scores on the scales of fear of death and escape from death. There were no differences in the severity of death avoidance, neutral acceptance, and complete acceptance.

Table 9

Nationality and attitudes towards death

	Polish nationality (N = 141)		non-Polish nationality (N = 136)		<i>AT</i>	<i>p</i>	<i>rg</i>
	<i>Mdn</i>	<i>Mrang</i>	<i>Mdn</i>	<i>Mrang</i>			
1.	4.29	152.21	3.50	125.31	7725.50	0.005	0.19
2.	3.40	144.03	3.20	133.78	8,878.50	0.287	0.07
3.	5.80	134.08	6.00	144.10	8894.00	0.296	0.07
4.	3.70	142.79	3.35	135.07	9053.50	0.422	0.06
5.	3.60	153.11	3.00	124.37	7,598.50	0.003	0.21

1 fear of death; 2 death avoidance; 3 neutral acceptance; 4 approach acceptance; 5 escape acceptance

Discussion

In the presented study, the attitude most frequently manifested in both groups of respondents was the neutral acceptance of death. Similar results were observed in other studies conducted in China, Turkey and Iran [19, 20, 21]. The respondents of both groups were quite unanimous in their answers, because all the values of the coefficients are positive. It should be noted that Polish students obtained higher scores on the scales of fear of death and escape from death compared to foreign students. This may be due to the tabooisation of death in Polish families. As shown by other studies, a relaxed and open atmosphere about the end of life was conducive to a positive attitude towards death [22]. It is interesting from the perspective of future professional work, because the study group consisted of people who will come into contact with the dying in the future. On the other hand, the fear of death and its avoidance by health care workers may have a negative effect on dying patients [23]. On the basis of the obtained results, it was found that students who completed the thanatology education course experienced less fear of death and of avoiding death [24, 25]. Therefore, it is worth considering introducing a thanatological education into the curriculum, which helps to change the negative attitude towards death and breaks the taboo around the subject of the end of life [24].

In this study, a significant relationship was found between the fear of personal infection and contracting the coronavirus and of the loved ones, and the revealed attitudes towards death. The intensification of anxiety about the disease correlated with an increase in the fear of death, death avoidance and the attitude of fleeing death, as well as with a decrease in neutral acceptance. Moreover, students belonging to the risk group obtained higher scores on the escape from death scale. The above results show that fear for your life is associated with a negative perception of death. It is interesting that students living with people who are particularly at risk of developing coronavirus obtained significantly higher scores on the scale of total acceptance of death. On the other hand, respondents who had relatives after passing COVID-19, were characterized by a lower severity in relation to the attitude of fleeing death. Similar research conducted among Iranian medical students showed that people who showed a positive attitude to death had experience in coping with transience [26].

Another important piece of information from the study is the lack of differentiation in terms of attitudes towards death between people who have had COVID-19 and those who have not. It should be emphasized that convalescents constituted a small part of the study group. Additionally, students who joined the unaffected group may not have had the feeling of having passed COVID-19. Therefore, it seems important to repeat the tests among people whose blood will be previously tested for anti-SARS-CoV-2 antibodies. In order to verify the obtained results, it would be necessary to conduct a study on a larger sample.

The results showed that the strongest correlation is between death avoidance and the fear of death. This means that the more a person feared death, the more they tried to avoid it. The above thesis is confirmed by the results of other studies conducted in this matter [13, 26, 27]. The attitude of fear towards death negatively correlated with the neutral acceptance of death. The correlation analysis of the neutral acceptance of death also showed an inverse relationship with its avoidance. Students who saw death as an inevitable and integral part of life were not afraid of it or avoided it. There is also a positive relationship between the fear of death and its complete acceptance. On the other hand, the value of the correlation coefficient between complete acceptance and avoidance of death is positive. The above thesis does not correspond with other studies, which show that belief in an afterlife did not help the participants to overcome fear and suppress the flight reaction before the end of life [26]. The explanation for this phenomenon may be the fact of conducting research during a pandemic, where death very often becomes a common phenomenon that can affect everyone. At the same time, it should be remembered that health care workers are a group particularly at risk of

contracting COVID-19 and the related death. On the basis of the obtained results, a moderately positive relationship can be observed between complete acceptance and escape from death. People who saw death as a transition to a new life saw it as a better alternative to a suffering existence. It can be assumed that as a result of the outbreak of the pandemic, people have largely lost control of existential problems and feel insecure in the space of an unstable epidemiological situation. Similar results were observed in studies conducted among students who, as a result of the armed conflict with Israel, live in constant fear for their lives [13].

Conclusions

The results obtained using the DAP-R-PL questionnaire indicate that Polish and foreign students of medical faculties most often show a neutral acceptance of death, which indicates that they will be able to cope with dying patients. The greatest differences in the attitudes studied between the two groups concern the fear of death and the escape from death. Polish students were characterized by higher results in these scales, which suggests the need to introduce thanatology education into the course of education. The differences between the groups in the results show that both cultural norms and religious beliefs influence beliefs about death.

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