Medical Residents' Knowledge on Advance Directives of Will at a University Hospital

Conhecimento de Médicos Residentes sobre Diretivas Antecipadas de Vontade em um Hospital Universitário

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Abstract

Introduction: Advance Directives (AD) are based on self-determination of the patients, who, making use of their autonomy, according to their personal values, refuse the practice of futile treatments in situations of terminality and irreversibility of diseases. It is highly relevant the need to intensify the discussion on the theme of terminality of life during the education of medical residents.

Objectives: To analyze the profile of knowledge of medical residents on the topic of Advance Directives of Will.

Methods: This was a cross-sectional study, based on the availability of a specific questionnaire to medical residents of a University Hospital, addressing the knowledge on the concepts about Advance Directives of Will. Those who answered "yes" to prior knowledge on AD received a second questionnaire containing specific questions on regulation of AD in Brazil, the correct mode of application and personal questions on willingness to fill out an AD for themselves.

Results: A total of 190 medical residents participated in the survey, 95.95% of the total number of residents enrolled in the period. It was observed that 41% reported knowing of AD, but only 34.6% of them knew how to write it. In the association of demographic and educational characteristics with knowledge on the definition of AD, it was observed that there was no statistically significant difference between the variables. However, it was found that the older the resident, the lower the ability to write an AD (p=0.03).

Conclusion: Knowledge on AD was satisfactory among the residents evaluated in this study, and a negative correlation was observed between the increase in age of residents and the ability to write an AD.

Resumo

Introdução: As diretivas antecipadas de vontade (DAV) são baseadas na hipótese de autodeterminação do paciente, o qual, fazendo uso de sua autonomia, e segundo seus valores pessoais, recusa a prática de tratamentos fúteis, em situações de terminalidade e irreversibilidade de enfermidades. É de alta relevância a necessidade de intensificar a discussão do tema da terminalidade da vida durante a formação dos médicos residentes.

Objetivos: Analisar o perfil de conhecimento de médicos residentes sobre o tema das Diretivas Antecipadas de Vontade.

Métodos: Trata-se de estudo transversal, com base na disponibilização de um questionário específico aos médicos residentes de um Hospital Universitário, abordando o conhecimento sobre DAV. Aqueles que responderam "sim" para conhecimento prévio sobre DAV foram apresentados um novo questionário contendo perguntas específicas sobre regulamentação das DAV no Brasil, sobre o modo correto de aplicação e perguntas pessoais sobre disposição a preencher uma DAV para si.

Resultado: Participaram da pesquisa 190 médicos residentes, 95,95% do total de residentes matriculados no período. Observou-se que 41% referiram conhecer a definição de DAV, mas apenas 34,6% destes sabiam como redigi-la. Na associação das características demográficas e de formação profissional com o conhecimento da definição de DAV, observou-se não haver diferença estatística significante entre as variáveis. Contudo foi verificado que quanto maior a idade do residente, menor a capacidade de redigir uma DAV (p=0.03).

Conclusão: O conhecimento sobre DAV se mostrou satisfatório entre os residentes avaliados neste estudo, e se observou correlação negativa entre o aumento da idade dos residentes e a capacidade de redigir uma DAV.

DOI: https://doi.org/ LAPC-2022-0001
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Keywords: Palliative Care; Terminal Care; Living Wills

Palavas Chave: Cuidados Paliativos; Assistência Terminal; Testamentos Quanto à Vida.

Introduction

One consequence of medical sciences progress is the emergence of the myth of individuals' immortality 1. Such a myth, supported by the several techniques of artificial human life maintenance, encourages excessive prolongation of the life cycle of patients with a terminal illness by means of painful and invasive therapies, whose effectiveness neither allows them to live with quality nor to die with dignity[2].

The terminality of life poses a growing number of ethical dilemmas, causing conflicts that involve health care professionals, patients and their families1. When the illness assumes a terminal character, therapeutic measures no longer increase the patient survival, but only extend the death process[1,3].

Patients increasingly want to have some control over the last stage of their lives, which includes making decisions regarding medical treatment and their goals[4–8]. However, patients may become unable to make decisions about treatment towards the end of life, for example, due to delirium or cognitive impairments[9]. Advance Directives of Will (ADW) planning is a means of extending the autonomy of patients to stages of life in which they have become incapable[5]. Hence the need for prior discussion while maintaining lucidity.

AD are a type of expressions of will for medical treatment, comprised of Living Will (LW) and Durable Power of Attorney (DPOA)[10]. Their basis is regulated by the Brazilian Federal Council of Medicine (CFM) Resolution No. 1,995/2012, published in the Federal Register on August 31, 2012, which is underpinned by Decree No. 44,045, dated July 19, 1958, and Law No. 11,000, dated December 15, 2004[11–13]. This resolution defines AD as a "set of wishes, previously and expressly manifested by the patient, about care and treatment that the individual wants, or does not want, to receive at a time when he/she becomes unable of expressing, freely and autonomously, his/her will."

AD enable patients and their families to identify and plan care and treatments that are acceptable to them and consistent with their personal values and preferences[4,14]. AD are tools to guarantee patients the right to decide on their health care, especially those related to end of life[15]. And if necessary, a substitute decision maker is named[16].

A Living Will (LW) consists of a duly signed document, in which the legally capable person declares what type of medical treatment he/she wishes to undergo in the event they find themselves unable to express their will, being able to oppose the future application of medical treatments and procedures that prolong his/her life to the detriment of its quality. The main objective of LW is to ensure the individual's control over health decisions at the end-of-life period. Through this instrument one could express wishes that, theoretically, allow application, establishment of certain limits, or total refusal of any possible intervention when facing a terminal illness.

The Durable Power of Attorney (DPOA), on the other hand, is an instrument through which the patient may name one or more "agents" to be consulted by physicians in cases of patient's inability to express him/herself. Thus, the agent will decide which procedures to take based on his or her knowledge on the patient's wishes[17].

ADW aim to guarantee the principle of individual autonomy in favor of a dignified death, since this concept may be distinct and unique for each person. These directives are already acknowledged as legal instruments in countries such as the United States, Spain, Portugal, Germany and Uruguay. In Brazil, they are still not specifically regulated by federal laws, with laws that indirectly address the theme, and the resolution of the Brazilian Federal Council of Medicine, being subject of intense debate[15].

The growing field of palliative care and a rapidly aging population highlight the importance of physicians knowledge on ADW, given that longevity may be followed by severe illness, symptom burden, functional dependence and frailty, caregiver burden, and high health care utilization[14,18-19].

Despite the importance of the subject in medical education, several studies have shown that knowledge on ADW is low among physicians and medical students[20-23]. Therefore, this study aims to analyze self-reported knowledge on Advance Directives of Will of medical residents at a University Hospital.

Material and Method

This is a quantitative, descriptive, analytical and cross-sectional study conducted in a population of 198 medical residents of a public University Hospital, corresponding to the total number of medical residents enrolled in 2020.

The following eligibility criteria were considered for defining the sample: being enrolled in a medical residency program during the study period and agreeing to participate in the research. All participants signed the Informed Consent Form (ICF). Physicians who presented any impediment to the application of the questionnaire, such as health problems or vacation leave, were not included in the study.

Data collection was performed by a group of researchers properly trained for this task, based on a questionnaire designed by them, with closed-ended questions, in order to obtain sociodemographic information and assess the knowledge of medical residents on the concepts of ADW, euthanasia, orthothanasia and dysthanasia. Those who answered "yes" to prior knowledge on ADW received a second questionnaire containing specific questions on ADW regulation in Brazil, on the correct mode of application, and personal questions about willingness to fill out an ADW for themselves.

The questionnaires were reviewed for completeness, legibility of information, and coding of responses. Data were double-typed by different people into an Excel spreadsheet, in order to obtain data free of typing errors. Afterwards the data were transferred to Stata 14® software (StataCorp LP, College Station, TX, USA). Absolute and relative frequencies were estimated. Pearson's chi-square or Fisher's exact tests were performed to verify the statistical association of residents' demographic and educational characteristics to the knowledge on the definition of Advance Directives of Will (ADW), and of those variables with the ability to write an ADW and respect it if described in the patient chart. Statistically significant differences were considered when $p<0.05$.

Results

A total of 190 medical residents participated in the study, since 8 of the enrolled physicians were not located for application of the questionnaire, with the following distribution among specialties: 48 were from clinical specialties (25.53%), 32 from surgical specialties (16.8%), 37 from pediatrics (19.5%), 29 from obstetrics and gynecology (15.3%), 10 residents in anesthesiology (5.2%) and 34 from remaining specialties (17.9%). The sample was mostly female (52.1%), and the majority was in the age range between 26 and 30 years old (52.1%). The highest percentage of elapsed time since graduation was two to three years, 33.2% of the physicians. The participants profile is detailed in Table 1.

Table 1: Demographic and educational characteristics of residents (n=190) of medical specialties from a University Hospital, São Luís, Maranhão, Brazil, 2021.

Characteristics	n= 190	%
Sex		
Male	91	47.9
Female	99	52.1
Age group (years)		
20 to 25	23	12.1
26 to 30	99	52.1
31 to 35	55	29.0
36 to 40	10	5.3
≥40	3	1.5
Medical specialty in residency		
Internal Medicine	23	12.1
Clinical subspecialties	25	13.2
General Surgery	15	7.9
Surgical subspecialties	17	8.9
Obstetrics and Gynecology	29	15.3
Pediatrics	29	15.3
Pediatric subspecialties	8	4.2
Anesthesiology	10	5.2
Other specialties	34	17.9
Year of medical residency		
1st	58	30.5
2nd	58	30.5
3rd	51	26.8
4th	19	10.0
5th	4	2.1
Time since medical school completion (years)		
One	31	16.3
Two to three	63	33.2
Four to five	57	30.0
Six or more	39	20.5

Among the survey participants, 41% (n=78) reported having knowledge on the definition of ADW (Table 2). Regarding knowledge about concepts related to bioethics, 100% (n=190) knew the concept of Euthanasia, 75.3% (n=143) the concept of Orthothanasia, and 76.3% (n=145) that of Dysthanasia.

Table 2: Characteristics of bioethics knowledge and concepts related to Advance Directives of Will (ADW) among residents (n=190) of medical specialties from a University Hospital, São Luís, Maranhão, Brazil, 2021.

Characteristics	n= 190	%
Do you know the definition of Advance Directive of Will (ADW) and Living Will (LW)?		
Yes	78	41.0
No	112	59.0
Do you know the concept of Euthanasia?		
Yes	190	100.0
No	0	0.0
Do you know the concept of Orthothanasia?		
Yes	143	75.3
No	47	24.7
Do you know the concept of Dysthanasia?		
Yes	145	76.3
No	45	23.7

It was observed that 33.3% (n=26) knew the CFM resolution No. 1995 from 12/09/2012 on ADW, and most (62.23%) reported having acquired this knowledge during their undergraduate studies. Regarding questions related to ADW, 97.4% (n=76) answered that it should be made at any time in life, 65.4% (n=51) did not know how to prepare an ADW, 62.8% (n=49) reported not having opportunities to discuss on how to write it during undergraduate studies; the majority (62.8%) reported that everyone involved could write an ADW. With respect to the validity of ADW, the majority (82%) reported that it was not mandatory to be registered at the registry office. Most (69.2%) residents reported they would respect an ADW if it was only written in the medical chart, 94.9% (n=74) reported they would make an ADW for themselves, the majority reported not having an ADW (98.7%) and never having treated a patient who had made an ADW (94.9%) (Table 3).

In the association of demographic and educational characteristics to knowledge on the definition of ADW, no statistically significant difference was observed among the variables (Table 4). In the association of demographic characteristics to the ability of writing an ADW (Table 5), it was observed that the older the resident, the lower the ability of writing an ADW (p=0.03).

Table 3: Knowledge characteristics in the application of Advance Directives of Will (ADW) among residents of medical specialties who reported knowing the definition of ADW (n=78) from a University Hospital, São Luís, Maranhão, Brazil, 2021.

Characteristics	n=78	%
Do you know the CFM resolution N° 1995 from 12/09/2012 on ADW?		
Yes	26	33.3
No	52	66.7
How did you become aware of the CFM resolution N° 1995 of 12/09/2012 on ADW?		
Internet	6	23.08
Undergraduate	18	69.23
Residency	2	7.69
When should an ADW be made?		
At any time in life	76	97.4
Only when the patient discovers that he/she has a serious illness	2	2.6
Do you know how to write an ADW?		
Yes	27	34.6
No	51	65.4
During undergraduate studies did you have the opportunity to discuss how to prepare an ADW?		
Yes	29	37.2
No	49	62.8
Who may write an ADW?		
The patient	28	35.9
Attorneys	0	0.0
Physicians	0	0.0
Patient's family members	1	1.3
All of them	49	62.8
For an ADW to be valid, is it mandatory to be registered at the registry office?		
Yes	14	18.0
No	64	82.0
Would you comply with an ADW if it were only written in a medical record?		
Yes	54	69.2
No	24	30.8
Would you make an ADW for yourself?		
Yes	74	94.9
No	4	5.1
Do you have an ADW?		
Yes	1	1.3
No	77	98.7
Have you ever treated a patient who had an ADW?		
Yes	4	5.1
No	74	94.9

Table 4: Association of demographic and educational characteristics with the knowledge on the definition of Advance Directives of Will (ADW) among residents (n=190) of medical specialties from a University Hospital, São Luís, Maranhão, Brazil, 2021.

Characteristics	Knowledge on ADW				
	Yes		No		p-value*
	n	%	N	%	
Sex					
Male	44	48.4	47	51.6	0.05
Female	34	34.4	65	65.5	
Age group (years)					
20 to 25	12	52.2	11	47.8	0.12
26 to 30	42	42.4	57	57.6	
31 to 35	23	41.8	32	58.2	
36 to 40	1	10.0	9	90.0	
≥40	0	0.0	3	100.0	
Medical specialty in residency					
Internal Medicine	10	43.5	13	56.5	0.516
Clinical subspecialties	11	44.0	14	56.0	
General Surgery	7	46.7	8	53.3	
Surgical subspecialties	4	23.5	13	76.5	
Obstetrics and Gynecology	9	31.0	20	69.0	
Pediatrics	10	34.5	19	65.5	
Pediatric subspecialties	5	62.5	3	37.5	
Anesthesiology	5	50.0	5	50.0	
Other specialties	17	50.0	17	50.0	
Year of medical residency					
1st	22	37.9	36	62.1	0.76
2nd	23	39.7	35	60.3	
3rd	22	43.1	29	56.9	
4th	10	52.6	9	47.4	
5th	1	25.0	3	75.0	
Time since medical school completion (years)					
One	13	41.9	18	58.1	0.98
Two to three	27	42.9	36	57.1	
Four to five	23	40.4	34	59.6	
Six or more	15	38.5	24	61.5	

Notes: *Pearson's Chi-square or Fischer's Exact tests ; ADW = Advance Directives of Will

Discusson

Knowledge on ADW was satisfactory among the residents assessed in this study, yet it has not increased over the years of their educational background, as opposed to the expected increase from their own experiences during medical residency.

Studies addressing this topic demonstrate a gap regarding knowledge of ADW and their types (Living Will and Durable Power of Attorney). In a study conducted with medical students, it has been found that only 19 (12.9%) of the participants were clearly aware of the meaning of LW20. In another study, also performed with academics, it has been verified that 251 (72.1%) correctly identified issues related to conduct in terminality, but only 23.5% demonstrated knowledge on the concept of Living Will. Despite the low rate, 80.1% stated their intention to respect it, in the event of terminally ill patients[21].

In a survey with a similar result, only 8% of 238 academics have demonstrated a clear understanding on the meaning of the term "Living Will". Nevertheless, after being given the definition of this concept by the researchers, 92% stated they would abide by the terms of the Living Will1. In a survey addressing knowledge on bioethics among medical residents, most physicians (78%) stated they had not received proper information about palliative care during their undergraduate studies and, when answering a specific questionnaire with true or false questions, only 7% of the participants presented an excellent assessment (accuracy in more than 80% of the questions)[22].

In a study with medical residents in the United States, it has been determined that only 53% of residents agreed with the statement "*sufficient knowledge of advance directives given my years of medical training*". The majority (93%) agreed that "*early teaching sessions on guidelines should be offered by my hospital, residency program, or medical school*". A response test comparing years of residency has shown a significant difference between second- and third-year residents ratings on 3 items: "*Advance Directives should only be discussed with patients over 60 years old*", "*I have proper knowledge on Advance Directives given my years of medical training,*" and "*I believe my experience with Advance Directives is adequate to the situations I routinely face*"[23].

In Brazil, there is no impediment to registering in a registry office one's wishes regarding the desired medical assistance in case of an incurable disease. However, there is no legislation that imposes on the physician to comply with the terminal patient wishes. Nevertheless, on August 31, 2012, the Brazilian Federal Council of Medicine (CFM) published the Resolution No. 1,995, which provides for Advance Directives of Will[1,24]. Based on this resolution, physicians have the ethical responsibility to respect the wishes of terminally ill patients, unless those wishes (or those of their legal agent) conflict with the precepts of the Code

Table 5: Association of demographic and educational characteristics to the ability of writing an Advance Directive of Will (ADW) and a Living Will (LW) and respecting it if described in the patient medical record, among residents (n=78) of medical specialties from a University Hospital, São Luís, Maranhão, Brazil, 2021.

Characteristics	Total (n = 78)		Do you feel able to write ADW and LW?					Would you respect an ADW and LW if described only in the patient chart?				
			Yes		No			Yes		No		
	n	%	n	%	n	%	p-value*	n	%	n	%	p-value*
Sex												
Male	44	56.4	12	27.3	32	72.7	0.121	29	65.9	15	34.1	0.47
Female	34	43.6	15	44.1	19	55.9		25	73.5	9	26.5	
Age group (years)												
20 to 25	12	15.4	5	41.7	7	58.3	0.03	6	50.0	6	50.0	0.33
26 to 30	42	53.9	18	42.9	24	57.1		29	69.1	13	30.9	
31 to 35	23	29.5	3	13.0	20	87.0		18	78.3	5	21.7	
36 to 40	1	1.2	1	100.0	0	0.0		1	100.0	0	0.0	
≥40												
Medical specialty in residency												
Internal Medicine	10	12.8	6	60.0	4	40.0	0.285	6	60.0	4	40.0	0.82
Clinical subspecialties	11	14.1	4	36.4	7	63.6		9	81.8	2	18.2	
General Surgery	7	9.0	3	42.9	4	57.1		4	57.1	3	42.9	
Surgical subspecialties	4	5.1	0	0.0	4	100.0		4	100.0	0	0.0	
Obstetrics and Gynecology	9	11.5	4	44.4	5	56.6		6	66.7	3	33.3	
Pediatrics	10	12.8	5	50.0	5	50.0		6	60.0	4	40.0	
Pediatric subspecialties	5	6.4	1	20.0	4	80.0		4	80.0	1	20.0	
Anesthesiology	5	6.4	1	20.0	4	80.0		3	60.0	2	40.0	
Other specialties	17	21.8	3	17.7	14	82.4		12	70.6	5	29.4	
Year of medical residency												
1st	22	28.2	9	40.9	13	59.1	0.53	13	59.1	9	40.9	0.576
2nd	23	29.5	10	43.5	13	56.5		15	65.2	8	34.8	
3rd	22	28.2	6	27.3	16	72.7		17	77.3	5	22.7	
4th	10	12.8	2	20.0	8	80.0		8	80.0	2	20.0	
5th	1	1.3	0	0.0	1	100.0		1	100.0	0	0.0	
Time since medical school completion (years)												
One	13	16.7	5	38.5	8	61.5	0.40	8	61.5	5	38.5	0.60
Two to three	27	34.6	12	44.4	15	55.6		17	63.0	10	37.0	
Four to five	23	29.5	5	21.7	18	78.3		18	78.3	5	21.7	
Six or more	15	19.2	5	33.3	10	66.7		11	73.3	4	26.7	

Notes: * Pearson's Chi-square or Fisher's Exact tests. their legal agent) conflict with the precepts of the Code of Medical e

of Medical Ethics (CME)[25].

CFM Resolution 1.995/201225 confers legitimacy to the medical stance on patients ADW. This resolution enables the physician to respect the wishes previously documented by the patient in circumstances where he/she is no longer capable of expressing them, and provided that those last wishes are in line with the dictates of the CME and the legal provisions. It is worth mentioning that the will expressed by the patient must prevail over any other non-medical opinion, even over the wishes of family members[25,26].

Studies demonstrate that planning may increase the number of significant and valid ADW, strengthen patient autonomy, and improve quality of care when the end-of--life process is approaching[10,16,27-28]. In the present study, it was observed that just under half of the medical residents, the great majority having graduated a few years before, showed some knowledge on the subject of ADW. However, the content of the interviewees' answers revealed a superficial knowledge on how the issue is addressed in Brazil in relation to norms, resolutions, and practical applications. Such results demonstrate the fragility of medical education in Brazil in relation to end-of-life care, which despite being present in some universities as an undergraduate

program, is still not seen as a necessary training for all health care professionals. The currently incipient situation regarding the need for building knowledge about end-of-life care causes newly graduated physicians and medical residents to be placed in situations where this knowledge is of paramount importance, without proper training.

A systematic review on end-of-life care teaching in the United States has shown that despite clear acknowledgement of the importance of learning about end-of-life care and near universal agreement that physicians bear responsibility for helping patients prepare for death, both students and residents felt unprepared to provide, and many professors and residents unprepared to teach, key components of good care for terminal patients[29]. Educational deficiencies seem to be particularly prevalent in psychological aspects of end-of-life care, including treatment of depression, bereavement care, and attention to the fears and concerns of dying patients[29]. When evaluating studies that have addressed the educational process of physicians and residents in end-of-life care, it has been concluded that education or training of health professionals on end-of-life care planning has a positive effect on participants' knowledge, attitude, skills, and comfort in discussing decision-making issues. With proper training and skills transfer, physicians and nurses in non-palliative care settings could be equipped with the appropriate attitudes and knowledge to manage the situation, in order to meet the needs and preferences of patients and their families/caregivers regarding their care[29].

Although targeted education may enhance end-of-life communication skills among medical residents[30], the existing medical residency curricula still lack substantial training in end-of-life care domains31, including education in the complex nuances of Advance Directives of Will and Will planning[29,32]. A study has shown that although medical residents describe themselves as being capable of discussing Advance Directives of Will with their patients, even without formal training, they have often failed to engage the patients in such conversations.

It was expected residents of clinical areas would have a better knowledge on ADW than residents from other areas, considering they have more contact with patients, as well as a greater chance of assisting a patient in the end-of-life stage. Similarly, it was expected that such knowledge would increase over the years of medical residency education. However, there were no relationships between knowledge on ADW and demographic and educational variables in this study.

Furthermore, although there are studies that have attempted to assess the knowledge of physicians and health care professionals on ADW, no studies have been found that tried to relate such knowledge to the demographic and educational background variables of the participants.

Regarding limitations of the study, the simplified format of the questionnaire could be highlighted. It consisted exclusively of objective questions, being the knowledge on ADW only self-reported, and not actually measured. The positive aspect was that the study provides a starting point to demonstrate the importance of studies to implement or consolidate end-of-life care training programs in medical residency curricula.

Conclusions

Knowledge on Advance Directives of Will was satisfactory among the residents assessed in this study, and no statistical significance was observed in the relationship between this knowledge and demographic and educational variables. However, a negative correlation has been noted between increasing age of residents and their ability to write an ADW.

Conflict of Interest

The authors declare no conflicts of interestt.

Authors' Contribution

MVGM and MALE participated in the conception and design of the study, bibliographic research, data collection and writing of the article. VBRM and JBSG participated in the mentoring, critical review, formatting, and approval of the final version of the manuscript.

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