

Association Between Knowledge and Attitudes Towards Advance Directives in Emergency Services

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Abstract

Aim: To assess the levels and relationship of knowledge and attitudes of nursing and medical professionals towards advance directives in hospital emergency departments and emergency medical services, and determine the correlated and predictor variables of favourable attitudes towards advance directives.

Design: Observational, descriptive and cross-sectional study.

Methods: The study was conducted in the emergency department of a second-level hospital and in the emergency medical service. Data collection was performed from January 2019 to February 2020. The guidelines STROBE were followed for the preparation of the study.

Results: A total of 173 responses were obtained. Among them, 91.3% considered that they were not sufficiently informed about advance directives, and 74% acknowledged not having incorporated them into their usual practice. The multinomial analysis indicated a statistically significant relationship between (a) the variables age and emergency service and (b) having more favourable attitudes on the part of the professionals by consulting their patients (OR 1.07 [95% CI: 1.02-1.12]; $p = 0.003$) and compliance with patient advance directives (OR 3.53 [95% CI: 1.64-7.61]; $p = 0.001$). The fact of working the afternoon shift was a predictor variable for obtaining a higher score with respect to attitudes in complex scenarios.

Conclusion: Implementing the consultation of patient advance directives in practice makes it possible to adjust decision-making to the wishes and preferences of the patients served, probably reducing the ethical and legal conflicts generated in the context of emergency services.

1. Introduction

It is known that scientific and technical advances in recent years have had a positive influence by increasing life expectancy. The improvement of global healthcare in our environment has produced a percentage increase in the demand for care from emergency services (1). A systematic review that assessed thirty-one studies indicated that the most frequent users of hospital emergency departments and emergency medical services were older adults, patients with complex chronic diseases, patients with psychiatric comorbidities, and patients with low socioeconomic levels (2). According to data from the World Health Organisation, there will be two billion individuals aged over 60 years in 2050. This is a population with increasingly complex pathologies and comorbidities that will require urgent care to treat episodes of acute exacerbations (3). This reality is having an impact on most health systems. Greater use of hospital emergency departments can cause saturation and collapse of services. In addition, it will increase the need for inter-and extra-hospital transfers of the population groups mentioned above (4,5). Serving increasingly aging populations implies that the assessments made by the professionals working at emergency services should substantially be more complex (6). In many cases, chronic and multi-pathological pictures are accompanied by some type of cognitive impairment that makes it difficult for the patient to be involved in decision-making (2,7). Ensuring free choice and decision on therapeutic

options is a fundamental right of any health system user. In addition, this issue was recommended in 2013 by the American Geriatrics Society, together with several North American emergency societies (American College of Emergency Physicians, Emergency Nurses Association, and Society for Academic Emergency Medicine) (8).

In this context, implementing the routine consultation of patient advance directives (AD) in hospital emergency departments and emergency medical services becomes essential, given that AD constitute the reference frame of care personalisation and respect for patients' values and preferences related to healthcare (9). AD allow decision-makers to set goals and preferences for future medical care and treatments, which should be respected and met in the absence of patients' ability to express themselves (10).

Previous studies have indicated that it is difficult to know patients' preferences in emergency services. The ignorance of AD, their registration mechanisms and the normative aspects that regulate them, as well as the lack of skills of professionals to manage them, constitute the main factors that hinder the consultation and implementation of AD in these services (11,12).

Likewise, in addition to posing a clear threat to respect for individuals' autonomy of decision (13), these obstacles described in the literature can generate conflictive situations from an ethical and legal perspective (14). They can also lead to professional practice based on 'defensive medicine' (15) or therapeutic futility.

Undoubtedly, being aware of the care and treatment preferences of patients can help professionals make decisions more adjusted to the will of these individuals, such as the transfers of those who wish to die in their own homes assisted by professionals who are experts in end-of-life care (16). Furthermore, it would be possible to reduce unnecessary clinical actions carried out in the emergency departments and services.

As previously mentioned, despite the fact that some studies have assessed health professionals' knowledge and attitudes towards AD, they did not analyse this issue jointly and comparatively in hospital emergency departments and emergency medical services. Therefore, the main goal of the present study was to assess the levels and relationship of nursing and medical professionals' knowledge and attitudes towards AD in hospital emergency departments and emergency medical services (removed for review), and determine the correlated variables. The predictive variables of favourable attitudes towards AD were analysed as a secondary goal of the study.

2. Methods

2.1 Study design and setting

This is an observational, descriptive and cross-sectional study conducted in the emergency department of Mollet Hospital (Barcelona), Spain and in an emergency medical service of Catalonia, Spain. The

guidelines proposed in 'Strengthening the reporting of observational studies in epidemiology' (STROBE) were followed for the preparation of the study.

2.2 Sample and sampling procedure

The sample was selected by non-probabilistic convenience sampling. It was calculated using the equation of proportions, estimating a confidence level of 95% and an expected proportion of losses of 15%. The potential necessary sample was constituted of 104 participants.

The participants included in the study were nursing and medical professionals linked to both services and institutions, who had a valid employment contract during the period of the survey, and who wished to participate in the study voluntarily. The professionals excluded were those in the 'recycling' period, those who habitually worked with the paediatric population, and graduate students in internships.

2.3 Instruments and measures

The data collection was performed from January 2019 to February 2020. The questionnaire "Knowledge and attitudes of health professionals in the process of living will declaration process", with a reliability ranging from 0.5 to 0.88, and a Kappa pre-retest stability of 0.2 (17) was used to assess the participants' knowledge and attitudes towards AD. This instrument is made up of forty-one items divided into seven blocks, namely: (a) normative aspects; (b) proposals for conceptual definition; (c) proposals for official documentation; (d) proposals for use; (e) proposals for the registration procedure; (f) proposal for attitudes of health professionals at the time of practical application (APA); and (g) proposals for attitudes of health professionals at the time of practical application in complex scenarios (ACS).

In order to assess the levels of knowledge about planning AD in the sample, it was considered relevant to add the following question: Do you know the meaning of advance directives planning?

Sociodemographic data were also collected using a form attached to the instrument, including sociodemographic and professional variables (sex, age, academic discipline, service, graduate training and/or master's degree in bioethics, years of experience in the service, and work shift). The response format was open-ended, dichotomous and polychotomous. The instrument used was delivered by the service coordinators to the potential participants in person and/or online through the institutional mail.

2.4 Data analysis

The compilation of the responses was performed using the SPSS V.24.0 software for Windows[®]. The statistical analysis of the data was carried out using the R V.4.0.1 software. The normality of continuous variables was determined using QQ plots and the Shapiro-Wilks and test. Variables that followed a normal distribution were presented as means (standard deviation). The differences were calculated using the Student's *t*-test for two groups, or ANOVA for more than two groups, correcting for multiple comparisons with Tukey test. Variables that did not follow a normal distribution were presented with the medians (interquartile range). The differences were tested using the nonparametric Mann-Whitney *U* test

for two groups, or Kruskal-Wallis for more than two groups, correcting for multiple comparisons using the Benjamin and Hochberg test. Categorical variables were represented with frequency (percentage) and both groups were compared using the Chi-square test or Fisher's exact test.

Ranges of scores were created from the 25, 50, and 75th percentiles to determine the APA and ACS of professionals who had favourable, neutral, or unfavourable attitudes towards AD. Linear regression models were created to assess the association between the set of qualitative variables and the variables with numerical results, taking the total scores of APA and ACS as the response variable. Variables that were significant in the bivariate analysis were included. Values of $p < 0.05$ were considered statistically significant. In addition, multinomial logistic regression models were created taking the APA and ACS classification as the response variable.

2.5 Ethical consideration

The present study was approved by the Clinical Board of Emergency Medical Services (Barcelona) and by the Ethics Committee for Drug Research of the Hospital Clínic Barcelona, with reference number HCB/2020/0158. Authorisation was obtained from the nursing and medical directorates of both institutions. The guidelines of the Declaration of Helsinki relating to ethical principles in clinical research were followed. The authors of the original questionnaire authorised its administration in the present study. With respect to the participants, they received oral and written information concerning the study and the voluntary nature of their participation. To ensure confidentiality, the information collected was registered in a database anonymously, using numbers (P1/G1, P2/G2, etc.) instead of the names of the participants.

3. Results

The present study assessed 173 participants, of which 119 were nursing professionals and 54 medical professionals. The median age was = 40 years (33.0-47.0), and 48 were men and 125 women. Of the total, 57.2% (n = 99) of the participants worked in the emergency department of the hospital, and 42.8% (n = 74) in the emergency service, 45.1% (n = 78) the morning shift, and 38.7% (n = 67) had a service experience of more than fifteen years. The remaining sociodemographic characteristics are detailed in Table 1.

With respect to knowledge, 53.5% (n = 92) knew that AD declarations could not replace informed consents, 71.7% (n = 124) knew that AD declarations were valid throughout the Spanish territory, 72.3% (n = 125) knew that an admitted individual could make an AD declaration, 57.2% (n = 99) acknowledged that health professionals should provide information about AD to patients; and only 42.8% (n = 74) knew the meaning of AD planning. On the other hand, 74% (n = 128) did not know the documentation that should be provided when making an AD declaration, 65.3% (n = 113) did not know where to register AD, 64.7% (n = 112) did not know where to consult them, and only 17.3% (n = 30) knew who could consult them once they had been recorded. In addition, 91.3% (n = 158) acknowledged that they were not

sufficiently informed about AD, and 50.3% (n = 87) answers were N/A when asked about the legal validity of an AD that was not registered.

Regarding attitudes, 74% (n = 128) of the professionals acknowledged that they had not incorporated consultation of AD in their usual practice (Figures 1 and 2). The comparison of the two groups indicated that 67.8% (n = 80) of the nursing professionals had greater tendency to respect the right of the patients to receive appropriate care for prevention and pain relief, including sedation, vs. 46.3% (n = 25) of the medical professionals ($p = 0.005$). They also considered that the physicians responsible for the care provided had a moral duty to comply with AD. In this case, 64.7% (n = 77) of the nursing staff fully agreed, in comparison to 38.9% (n = 21) of the medical professionals ($p = 0.007$). On the other hand, 58% (n = 69) of the nursing professionals and 48.1% (n = 26) of the medical professionals considered AD very useful as an instrument for healthcare.

The best scores in the APA and ACS questions were more frequently observed in those who knew about AD, the official documentation necessary to perform them, the registration procedures, and their use in clinical practice. This fact was confirmed with a p -value <0.05 . The relationship between the level of knowledge and the APA and ACS are detailed in Table 2.

Regarding the total score of the APA (Table 3), the bivariate analysis indicated a statistically significant relationship between the variables age and service and exhibiting greater predisposition on the part of the professionals to consult the AD of the patients.

It was observed that, as age increased, there were greater probabilities of obtaining a favourable score in APA (OR 1.07 [95% CI: 1.02-1.12]; $p = 0.003$) or neutral (OR 1.05 [95% CI: 1-1.1]; $p = 0.033$) rather than an unfavourable one. The fact of belonging to the emergency service (removed) was a predictor variable of a favourable attitude (OR 2.31 [95% CI: 1.03-5.18]; $p = 0.042$) or neutral (OR 1.41 [95% CI: 0.62-3.19]; $p = 0.414$) vs. an unfavourable one, taking those of the emergency department of the hospital as reference. Regarding the total score of the ACS, it was observed that belonging to the emergency services promoted greater probabilities of obtaining a favourable score (OR 3.53 [95% CI: 1.64-7.61]; $p = 0.001$) rather than a neutral or unfavourable one, in comparison to those of the hospital emergency department (Table 4). Working the afternoon shift was also a predictor variable for obtaining a higher score in ACS, in comparison to those working the morning and/or night shift (OR 3.81 [95% CI: 1.33-10.89]; $p = 0.013$).

4. Discussion

The results presented are in line with those of previous studies that have considered the lack of specific knowledge and skills relating to the management of AD as a central element in the difficulty of their implementation in the context of emergency services (18–21). Nevertheless, the present study provides novel aspects regarding which variables are predictors of favourable attitudes towards AD.

In the same line of results found by Mateos et al. (22) and Marco et al. (23), there was good predisposition of nursing and medical professionals to respect the autonomy of decision of the patients

they served. However, as pointed out by Pérez et al. (24), there was still a lack of knowledge about AD, their registering mechanisms at a practical level, and the normative aspects that regulated them. According to a phenomenological-hermeneutic study that interviewed 24 emergency care services professionals (11), the lack of knowledge presented by professionals can act as a barrier and make it difficult to routinely consult ADs in the emergency services. In order to overcome this barrier, the professionals interviewed considered it necessary to improve communication circuits between services and to reconvert and unify the computer programs currently used in care.

A noteworthy finding of the present study is the association between the level of knowledge that nursing and medical professionals had regarding AD and the scores obtained on the APA and ACS scales. This fact indicates that the more knowledgeable professionals are about AD, the more inclined they are to consult the AD of the patients and respect their wishes and preferences regarding care and/or treatment. A study conducted in Germany with emergency physicians revealed that the therapeutic decisions of the professionals were influenced by the existence of AD in 77% of the cases (25). This way, professionals' consultation of patient AD may be determined by the knowledge they have about AD. However, the lack of knowledge could represent greater variability of response to the same scenario at a clinical level, especially in a vital risk situation that entails urgent action (26). This variability in the decision-making process could represent a risk of patient rights protection, especially with regard to his or her autonomy for choosing the treatments or interventions according to his or her preferences (27,28).

On the other hand, it is worth mentioning the direct proportional relationship between age and the APA and ACS total scores. These results support the conclusions made by Aguilar-Sánchez et al. (29) according to which the experience of the professionals with respect to AD was the variable associated with both knowledge and attitudes. Also, the findings of Pérez et al. (24) indicated that, in addition to being the ones who had the greatest knowledge about AD, older professionals were also the ones who most complied with the AD of the patients they served.

The fact that the professionals who worked in the emergency service had more favourable attitudes towards patient AD than those professionals of the emergency department is a new piece of information. Perhaps the fact of caring for patients in critical situations or at the end of life could be a key element that explains the interest or a favourable attitude towards AD. This way, further studies should assess this finding deeply and with bigger samples in order to determine what factors make professionals of emergency services more likely to consult and respect patient AD.

Finally, the results show that the older professionals, those working the afternoon shift, and those who worked in the emergency services were more favourable to consult and respect patient AD. These variables must be taken into account when designing strategies to improve AD management in intra-hospital and extra-hospital emergency services. Undoubtedly, this can contribute to improving nursing care and clinical care for patients using these services.

4.1 Limitations

Among the limitations of the present study, it should be mentioned that the sample size was moderate, although it exceeded those of other similar studies (22,25). Also, it is worth mentioning the heterogeneous representativeness between the two groups, since the highest response rate was obtained in nursing. However, the proportion of the two professional groups was certainly not the same in the clinical setting. For this reason, only the trend followed by the professionals' responses was shown in the presentation of the results by professional category. The results by sex were not compared either, since the highest participation in the study was that of women, an issue that should be taken into account if an analysis of the results is to be carried out in terms of sex.

4.2 Implications for clinical practice

Implementing the consultation of patient AD in practice makes it possible to adjust decision-making to the wishes and preferences of the patients served, probably reducing the ethical and legal conflicts generated in the context of emergency departments and emergency services.

5. Conclusion

These results highlight the need to redefine and identify new frameworks of action to help implement routine consultation of advance directives in emergency departments and emergency services. To achieve this, it is necessary to train and sensitize nurses and physicians in the emergency departments with new training programs, which promote the acquisition of knowledge on the management of advance directives in a practical and experiential way.

Abbreviations

AD: Advance Directives

APA: attitudes of health professionals at the time of practical application

ACS: attitudes of health professionals at the time of practical application in complex scenarios

Declarations

Availability of data and materials

The data used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Contributions

SPM and AFP planned the study. PJM, PSV, NPQ and MVG conducted a survey. SPM and AFP analysed the data. All research members actively participated in the drafting of the article. SPM submitted the study.

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Ethics declarations

Ethics approval and consent to participate

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Consent for publication

Not applicable.

Competing Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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Tables

Table 1. Main characteristics of the participants.

	[ALL]	Nursing	Medical	No.
	<i>No.=173</i>	<i>No.=119</i>	<i>No.=54</i>	
Age	40.0 [33.0;47.0]	39.0 [32.2;45.0]	42.0 [36.0;52.0]	172
Previous Master's or postgraduate degree	8 (4.62%)	6 (5.04%)	2 (3.70%)	173
Years of experience at the service				173
0-5 years	39 (22.5%)	31 (26.1%)	8 (14.8%)	
6-10 years	39 (22.5%)	22 (18.5%)	17 (31.5%)	
11-15 years	28 (16.2%)	20 (16.8%)	8 (14.8%)	
+15 years	67 (38.7%)	46 (38.7%)	21 (38.9%)	
Service:				173
Hospital emergency department	99 (57.2%)	74 (62.2%)	25 (46.3%)	
Emergency medical service	74 (42.8%)	45 (37.8%)	29 (53.7%)	
Work shift:				173
Morning	78 (45.1%)	54 (45.4%)	24 (44.4%)	
Afternoon	32 (18.5%)	24 (20.2%)	8 (14.8%)	
Night	63 (36.4%)	41 (34.5%)	22 (40.7%)	

Table 2. Relationship between the levels of knowledge and attitudes in practical application of AD.

	[ALL]	Unfavourable attitude towards AD	Intermediate attitude towards AD	Favourable attitude towards AD	<i>p</i>	No.
	<i>No.=172</i>	<i>No.=50</i>	<i>No.=58</i>	<i>No.=64</i>		
AD declarations can replace an informed consents:					0.028	171
Yes	40 (23.4%)	8 (16.0%)	9 (15.8%)	23 (35.9%)		
No	91 (53.2%)	26 (52.0%)	34 (59.6%)	31 (48.4%)		
N/A	40 (23.4%)	16 (32.0%)	14 (24.6%)	10 (15.6%)		
AD are valid throughout the Spanish territory:					0.039	172
Yes	123 (71.5%)	28 (56.0%)	44 (75.9%)	51 (79.7%)		
No	8 (4.65%)	4 (8.00%)	1 (1.72%)	3 (4.69%)		
N/A	41 (23.8%)	18 (36.0%)	13 (22.4%)	10 (15.6%)		
Knows Advance Care Planning					0.031	172
Yes	74 (43.0%)	19 (38.0%)	19 (32.8%)	36 (56.2%)		
No	66 (38.4%)	24 (48.0%)	23 (39.7%)	19 (29.7%)		
N/A	32 (18.6%)	7 (14.0%)	16 (27.6%)	9 (14.1%)		
Knows who is entitled to access the content:					0.009	172
Yes	36 (20.9%)	7 (14.0%)	8 (13.8%)	21 (32.8%)		
No	76 (44.2%)	26 (52.0%)	22 (37.9%)	28 (43.8%)		
N/A	60 (34.9%)	17 (34.0%)	28 (48.3%)	15 (23.4%)		

	[ALL]	Unfavourable attitude towards AD	Intermediate attitude towards AD	Favourable attitude towards AD	<i>p</i>	No.
	<i>No.=172</i>	<i>No.=50</i>	<i>No.=58</i>	<i>No.=64</i>		
Has consulted AD records in his/her professional practice:					0.009	172
Yes	55 (32.0%)	9 (18.0%)	17 (29.3%)	29 (45.3%)		
No	111 (64.5%)	37 (74.0%)	40 (69.0%)	34 (53.1%)		
N/A	6 (3.49%)	4 (8.00%)	1 (1.72%)	1 (1.56%)		
Has incorporated the consultation of AD in his/her usual practice:					0.002	172
Yes	26 (15.1%)	4 (8.00%)	3 (5.17%)	19 (29.7%)		
No	127 (73.8%)	41 (82.0%)	47 (81.0%)	39 (60.9%)		
N/A	19 (11.0%)	5 (10.0%)	8 (13.8%)	6 (9.38%)		
Knows where to consult AD:					0.052	172
Yes	46 (26.7%)	11 (22.0%)	11 (19.0%)	24 (37.5%)		
No	111 (64.5%)	36 (72.0%)	38 (65.5%)	37 (57.8%)		
N/A	15 (8.72%)	3 (6.00%)	9 (15.5%)	3 (4.69%)		
Is aware of the required documentation:					0.001	172
Yes	31 (18.0%)	3 (6.00%)	7 (12.1%)	21 (32.8%)		
No	127 (73.8%)	43 (86.0%)	43 (74.1%)	41 (64.1%)		
N/A	14 (8.14%)	4 (8.00%)	8 (13.8%)	2 (3.12%)		

	[ALL]	Unfavourable attitude towards AD	Intermediate attitude towards AD	Favourable attitude towards AD	<i>p</i>	No.
	<i>No.=172</i>	<i>No.=50</i>	<i>No.=58</i>	<i>No.=64</i>		
The appointment to register AD can only be requested through the app Salud Responde (<i>Health Answering</i>):					0.033	171
Yes	52 (30.4%)	13 (26.5%)	15 (25.9%)	24 (37.5%)		
No	31 (18.1%)	4 (8.16%)	11 (19.0%)	16 (25.0%)		
N/A	88 (51.5%)	32 (65.3%)	32 (55.2%)	24 (37.5%)		
A representative is mandatory for AD:					0.009	172
Yes	85 (49.4%)	17 (34.0%)	26 (44.8%)	42 (65.6%)		
No	15 (8.72%)	4 (8.00%)	7 (12.1%)	4 (6.25%)		
N/A	72 (41.9%)	29 (58.0%)	25 (43.1%)	18 (28.1%)		

AD: advance directives

Table 3. Sociodemographic factors that affect attitudes towards AD in its practical application.

	Intermediate attitude towards AD (95% CI)	<i>p</i> -value	Favourable attitude towards AD (95% CI)	<i>p</i> -value
Intercept	0.16(0.03;0.92)	0.04	0.06(0.01;0.37)	0.002
Age	1.05(1;1.1)	0.033	1.07(1.02;1.12)	0.003
Service: Emergencies	1.41(0.62;3.19)	0.414	2.31(1.03;5.18)	0.042

AD: advance directives CI: confidence interval.

Table 4. Sociodemographic factors that affect attitudes towards AD in complex scenarios.

	Intermediate attitude towards AD (95% CI)	<i>p</i> -value	Favourable attitude towards AD (95% CI)	<i>p</i> -value
Intercept	0.4(0.2;0.79)	0.009	0.44(0.23;0.84)	0.013
Service: Emergencies	1.55(0.64;3.75)	0.33	3.53(1.64;7.61)	0.001
Afternoon shift	2.12(0.63;7.11)	0.223	3.81(1.33;10.89)	0.013
Night shift	2.01(0.81;4.98)	0.133	2.16(0.97;4.85)	0.061

AD: advance directives; CI: confidence interval.

Figures



Figure 1

Attitudes of nursing and medical professionals at the time of practical AD application.

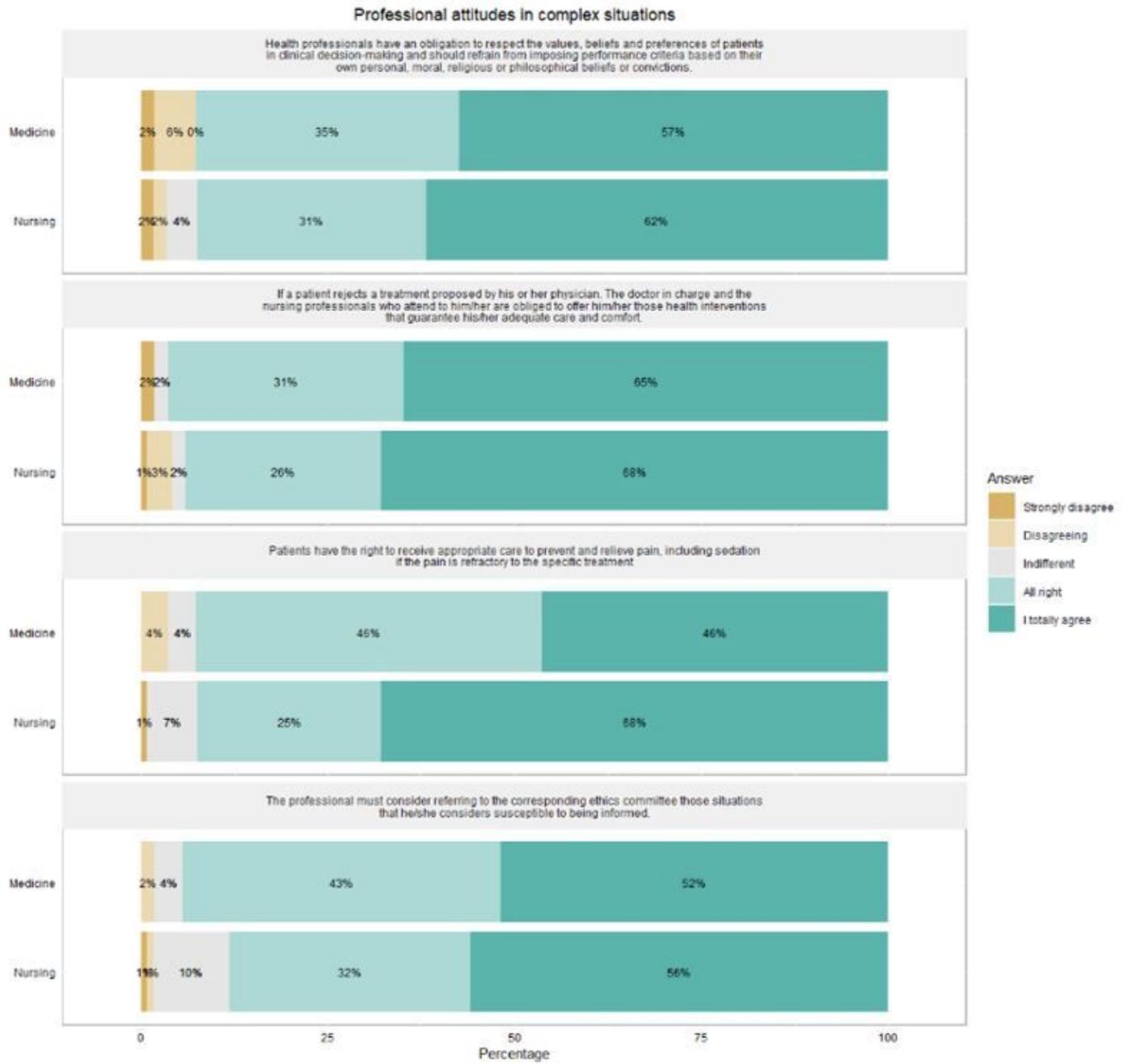


Figure 2

Attitudes of nursing and medical professionals towards AD in complex scenarios.