

# Evaluating the Levels of Awareness of and Attitudes on Advance Directives Among Primary Care Physicians in Puerto Rico

Danilea M. Carmona-Matos, BS, MS; Verónica H. Layrisse-Landaeta, MD; Keishla González-Sánchez, MD; Dalilah Reyes-De Jesús, MD; Frank De La Cruz, MD; Krizia Ovando, BS; Yadier Brito-Cuas, MD; Jean Paul Iñiesta-Rivera, MD, MPH; Shirley Valentín-Berríos, PhD; Martha E. García-Osorio, MD, MS

**Objective:** Advance directives (ADs) are legal documents designed to guarantee a patient's preference of care for the future. Primary care physicians (PCPs) have long been identified as key to promoting AD completion among patients. Furthermore, PCPs' levels of awareness of and attitudes toward ADs have been related to positive completion rates in patients. In this project, we sought to identify the levels of awareness and attitudes towards ADs in Puerto Rican PCPs.

**Methods:** Self-administered questionnaires were distributed at primary care medical conferences in Puerto Rico (PR) to explore the levels of awareness and attitudes of PCPs on ADs.

**Results:** A total of 332 surveys were collected. Overall, PCPs in PR had high self-rated knowledge of ADs, with the highest being reported among internal medicine physicians ( $8.63 \pm 1.51$ ). However, this self-rating was in stark contrast with the lower than 60% level of awareness of and commitment to reading the applicable laws on ADs in PR across all specialties. Puerto Rican PCPs showed strongly positive attitudes towards ADs and recognized them as useful tools for patients, healthcare workers, and families, enabling them to make healthcare decisions. Internal medicine practitioners showed the strongest positive attitudes of all PCPs. Despite the perceived usefulness of ADs, Puerto Rican PCPs had a low predisposition to complete their own ADs in the short term.

**Conclusion:** Our results suggest that improvements in the education of health professionals with regard to ADs are needed to increase in physicians both their knowledge of the legal standards governing ADs and their commitment to ensuring that patients complete such directives. [*PR Health Sci J* 2022;41(3):135-141]

*Key words:* Advanced care planning, Advanced directives, End-of-life care, Primary care physicians, PCP

Advance directives (ADs) are legal documents concerning an individual's treatment preferences for future medical care (1–4). The main purpose of ADs is to ensure patient autonomy by increasing the likelihood that that individual will receive the level of care and interventions desired should the patient become unable to express his or her wishes (4,5). The components of an AD can vary but can include documents such as a donor registry enrollment form, a healthcare power of attorney, a do-not-resuscitate order, and other end-of-life paperwork (6,7).

Laws governing advance care planning have been established in various countries. In 1990, the US Congress passed the Patient Self-Determination Act, which required healthcare facilities accepting Medicaid or Medicare to inform patients about their rights to have ADs in the event that they became incapacitated (2,8). After this law was enacted, other countries

in the world followed suit, presumably with the hope that such a regulation would benefit patients. In 2001, Puerto Rico became the first Latin American region to regulate ADs, doing so with Law 160 (9). However, legal regulation has not translated to increased completion rates of ADs, across the globe (3,10). In the United States, AD completion rates have been around 38% in participants of daycare centers for older adults but less than 10% for the general population (6,11). In contrast, in Latin America and the Caribbean, AD completion

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San Juan Bautista School of Medicine, Caguas, Puerto Rico

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Address correspondence to: Danilea M. Carmona Matos, BS, MS, San Juan Bautista School of Medicine, PO Box 4968, Caguas, PR 00726-4968. Email: danileamc@sanjuanbautista.edu

rates are largely untraceable due to unreliable reporting and the lack of the infrastructure needed to support accessible end-of-life care (EOLC) (12). Literature on ADs in Puerto Rico is limited, and the patient completion rate is neither reliably nor actively reported. Furthermore, the only study documenting AD completion in Puerto Rico looked at a unique population that received care in an ICU at a US Veterans Affairs hospital that is located on the island and may not translate to our general population's reality (13).

Primary care physicians (PCPs) play an important role in the patient completion rate of ADs (14,15). Furthermore, PCP levels of knowledge, awareness, and attitudes regarding ADs have been suggested to have a positive influence on these physicians' commitment to advance care planning with patients (16–18). Patients who receive information on AD from their PCPs are more likely to discuss this topic with family members and complete some sort of AD document (19–21). However, the frequency of discussing ADs and their development seems to be low in the Latino population on the US mainland and in Latin American and Caribbean nations (22–25).

Considering the critical role PCPs play in patient AD completion rates, our study sought to evaluate Puerto Rican PCPs' levels of awareness of and attitudes towards ADs. The information collected can provide insight into possible interventions to address Puerto Rican PCPs' levels of awareness of and commitment to advance care planning.

## Methods

A cross-sectional descriptive study was carried out from December 2018 through June 2019 to identify the levels of awareness of and attitudes towards ADs among PCPs in Puerto Rico.

### Recruitment strategy

The study was implemented during several PCP conferences in Puerto Rico, which included the 17th Annual Convention of the College of Surgeons of Puerto Rico (December 2018), 2019 American College of Physicians Puerto Rico Chapter Scientific Meeting (March 2019), 62nd Annual Congress of the Puerto Rico Academy of Family Physicians (April 2019), and 9th Annual Congress of the Puerto Rico Academy of General Medicine (June 2019). These conferences have been the largest in Puerto Rico in terms of bringing PCPs from around the island together. Furthermore, these conferences recognize the importance of clinical and scientific advancement, with each constituting a safe space to discuss sensitive matters related to personal and professional development.

### Eligibility, Primary Care Physician definition, and exclusions

Registrants were informed of the study and survey during the conferences. No incentives were offered for survey completion. We obtained a signed consent from all the participants who

completed the survey. Eligible participants were PCPs practicing medicine in Puerto Rico at the time of the survey. For the purpose of this study, PCPs were defined as physicians who provided care in the fields of general medicine (GM), family medicine (FM), and internal medicine (IM). In addition, we captured responses from a group defined as "Other" to include physicians practicing in the fields of pediatrics, occupational medicine, and antiaging medicine. By using this definition, we hoped to capture a representative sample of the PCPs in Puerto Rico.

### Sample size

In order to calculate our sample size, we first established the total PCP population in Puerto Rico by means of the Association American of Medical College's 2016 Physician Workforce Profile for Puerto Rico published in 2017 (26). According to this report, Puerto Rico had a total of 3,985 PCPs in 2016. By assuming a population proportion of 0.5, a 95% confidence interval with a 0.05 margin of error, and a Z score of 1.96, we were able to determine our required minimum sample size to be 350 responses.

### Survey

To evaluate the levels of awareness and attitudes of the participating PCPs, we obtained permission to use a previously published tool that was developed by Simón-Lorda et al. (27). The survey questions were cross-culturally adapted and validated to make up for differences in language use between Spain and Puerto Rico. The survey in question includes 12 items. First, it uses a Likert scale from 0 (very poor) to 10 (excellent) to measure a given respondent's self-rated knowledge of ADs. After this section, there are two questions asking about levels of awareness using categorical values ("Yes," "No," and "I Don't Know"). Lastly, the remaining nine items evaluate attitudes towards ADs using a Likert scale from 0 to 10 (on which 0 is the lowest negative attitude and 10 is the highest positive attitude). In addition to collecting the data on the respondents' levels of awareness of and attitudes towards ADs, the survey has a section for self-reported demographics; it gathered the following data for our study: gender (male, female, or undisclosed), the field of practice (GM, FM, IM, or other), and type of practice (independent private practice [IPP], medical group [MG], hospital-based [HB] practice, or other).

### Statistical analysis

Statistical analyses were performed using SPSS (IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp.). The data were analyzed as a whole and separately (gender, field of practice, and type of practice). For analyses on questions concerning continuous variables (Q1 and Q4–Q12), significance was determined using a 1-way ANOVA followed by Tukey's post hoc test. For analyses on questions concerning categorical variables (Q2 and Q3), significance was determined using Pearson's chi-

square test. All data are expressed as mean ± SEM unless stated otherwise. *P* values less than .05 were considered statistically significant.

**Ethical considerations**

This study was approved by the San Juan Bautista School of Medicine Institutional Review Board (EMSJB-7-2018). All the participants provided an informed consent prior to completing our survey. Surveys were self-administered and returned to the surveyors once completed. Maximum confidentiality and anonymity were guaranteed.

**Results**

A total of 381 surveys were collected from December 2018 through June 2019. Forty-eight (12.6%) surveys were excluded due to the participating physicians' specialized fields of practice, and 1 (0.26%) was excluded because that individual's practice was outside of Puerto Rico. Our final sample consisted of 332 surveys corresponding to PCPs who met the inclusion criteria for our study. This equals a response rate of 94.86% (332/350) compared to our calculated sample size.

Demographic information on the participating PCPs was collected as part of the survey and summarized (Table 1). The respondents' mean age was 53 years (SD ± 13.1), with an age range of 26 to 93 years old. Distribution by gender showed that a majority of the respondents identified as male (192 [57.8%]), while all the others identified as female (125 [37.7%]) or declined to respond (15 [4.5%]). Furthermore, we were able to identify the practitioners based on their fields of practice and noted that most respondents self-identified as being in GM (141 [42.5%]), FM (100 [30.1%]), or IM (72 [21.7%]). Lastly, in terms of physician type of practice, more than half of the respondents stated that they had an independent private practice (IPP) (188 [56%]).

The knowledge possessed by PCPs regarding the legal aspects of ADs was assessed (Table 2). More than half of the respondents were aware of existing legal statutes regulating ADs in Puerto Rico. However, a similar number of respondents reported that they had not read the laws governing ADs in Puerto Rico. There was no significant difference in terms of gender on the level of awareness of ( $X^2 = 0.515$ ) or having read the applicable laws ( $X^2 = 0.448$ ) on ADs in Puerto Rico. Further analysis demonstrated that there were also no significant differences by physician specialty or type of practice.

The self-reported knowledge of and attitudes towards ADs of participating PCPs were analyzed in terms of physician gender (Table 3). Men and women both reported their knowledge of ADs favorably ( $8.18 \pm 1.91$ ,  $7.98 \pm 2.00$ , respectively).

The attitudes of the PCPs toward ADs were generally very positive. They agreed that ADs were convenient for end-of-life decision making and useful for patients ( $9.47 \pm 1.43$ ), healthcare professionals ( $9.56 \pm 1.18$ ), and the family members of patients ( $9.59 \pm 1.06$ ). Furthermore, the PCPs agreed that naming a surrogate in an AD could be very helpful during EOLC decision making ( $9.35 \pm 1.55$ ) and that they were very likely to recommend that their patients complete an AD ( $9.55 \pm 1.30$ ). In general, the PCPs also agreed that they would like their family members to have an AD ( $9.38 \pm 1.60$ ). However, there was a statistically significant difference in the participating PCPs' responses when broken down by gender ( $P = .029$ ); female PCPs had a more positive view of their family members having ADs ( $9.59 \pm 1.06$ ) than did male PCPs ( $9.23 \pm 1.88$ ). When considering themselves as potential patients, most of the PCPs stated they would fill out an AD ( $9.57 \pm 1.32$ ). However, a statistically significant difference was found ( $P = .048$ ), as female PCPs were more likely to fill out an AD ( $9.72 \pm 0.839$ )

**Table 1.** Demographic distribution of participating primary care physicians

Demographics	
Age in years, mean (SD)	53 years (SD ± 13.1)
Gender, n (%)	
Male	192 (57.8%)
Female	125 (37.7%)
No answer (N/A)	15 (4.5%)
Field of Practice, n (%)	
General medicine (GM)	141 (42.5%)
Family medicine (FM)	100 (30.1%)
Internal medicine (IM)	72 (21.7%)
Other	17 (5.1%)
No answer (N/A)	2 (0.6%)
Type of Practice, n (%)	
Independent private practice (IPP)	186 (56.0%)
Hospital-based (HB)	67 (20.2%)
Medical group (MG)	49 (14.8%)
Other	28 (8.4%)
No answer (N/A)	2 (0.6%)

**Table 2.** Primary care physician awareness of legal regulations on ADs in Puerto Rico and their commitment to reading the applicable law

	Overall n (%)	Males n (%)	Females n (%)	Gender Undisclosed n (%)	<i>P</i> ( $X^2$ )
Are ADs regulated by law in Puerto Rico?					
Yes	191 (57.5%)	108 (56.3%)	71 (56.8%)	12 (80%)	.515
No	50 (15.1%)	30 (15.6%)	19 (15.2%)	1 (6.7%)	
Don't know	91 (27.4%)	30 (28.1%)	19 (28.0%)	2 (13.3%)	
Have you read the law on ADs in Puerto Rico?					
Yes	146 (44.0%)	88 (45.8%)	50 (40.0%)	8 (53.3%)	.448
No	186 (56.0%)	104 (54.2%)	75 (60.0%)	7 (46.7%)	

Abbreviations – Advance directive: AD

than were their male counterparts (9.45 ± 1.59). In addition, the PCPs who took part indicated, as a whole, that they were very likely to comply with a patient’s wishes on an AD (9.71 ± 0.88). Interestingly, though a positive attitude and perception of ADs persisted among the participating PCPs, when asked if they would complete their own AD in the near future, their overall scores dropped to 7.21 (± 3.45).

When compared by specialty (Table 4), the PCPs’ self-reported knowledge (of ADs) was highest among internal medicine physicians (8.63 ± 1.51) and significantly lower in the group of PCPs having “Other” specialties (6.65 ± 2.85) (P = .005). Although PCP attitudes toward ADs scored high among all the specialties, we found significant differences when the participants were asked whether ADs were useful for healthcare professionals (P = .009) or family members (P = .025). In these cases, general medicine physicians scored AD usefulness for healthcare professionals and family members lower (9.30 ± 1.57 and 9.38 ± 1.39, respectively) than did internal medicine (9.86 ± 0.45 and 9.79 ± 0.65, respectively) and family medicine physicians (9.72 ± 0.83 and 9.76 ± 0.68, respectively). Furthermore, general medicine physicians (9.03 ± 1.86) also scored the helpfulness of naming a surrogate in an AD significantly lower (P = .022) than did internal medicine physicians (9.69 ± 0.97).

Lastly, the participating PCPs’ self-reported knowledge of and attitudes towards AD were analyzed in terms of each physician’s type of practice (data not shown). Physicians expressed positive attitudes regardless of whether their practice was HB, an IPP, an MG, or another type, such as an academic center or a

local or federal government institution. The only significant difference noted (P = .017) was regarding a given physician’s likelihood of completing an AD in the near future (Fig. 1). In this case, physicians who reported being hospital based (HB) scored significantly lower (6.15 ± 3.85) on their likelihood of completing an AD in the near future than did physicians who reported working in an IPP (7.45 ± 3.30) or in “Other” settings (8.21 ± 2.13).

### Discussion

An AD serves as a guide for healthcare workers and families, enabling them to honor the patient’s wishes in case of an emergency and provide adequate EOLC when a person is unable to make his or her own decisions (3,4). Primary care physicians’ levels of awareness of and attitudes towards ADs have long been related an increase in both patient communication about ADs and AD completion rates (15–18,28). In this study, we were able to document the levels of awareness and attitudes of a representative sample of Puerto Rican PCPs, mainly internal medicine, family medicine, and general medicine practitioners, with respect to ADs.

Overall, our findings show that the PCPs surveyed reported having high self-rated knowledge regarding ADs. More than half of the PCPs were aware that ADs are regulated by law in Puerto Rico. However, most of them had not read the AD statute of Puerto Rico. This finding is similar to those of other studies, such as the 2016 research by Perez et al., which showed that 57% of HB medical professionals in Spain appeared to have

**Table 3.** Gender differences in Puerto Rico primary care physicians self-reported knowledge of and attitudes towards ADs<sup>a</sup>.

	Overall		Males		Females		Gender Undisclosed		t test
	Median	SD	Median	SD	Median	SD	Median	SD	
<i>Self-reported level of knowledge on ADs</i> (0 = poor; 10 = excellent)	8.10	1.98	8.18	1.91	7.98	2.00	7.93	2.63	0.376
<i>It is convenient for patients to plan their medical wishes stating them in a written AD?</i> (0 = not convenient at all; 10 = very convenient)	9.47	1.43	9.48	1.54	9.45	1.32	9.60	.910	0.852
<i>Are ADs a useful tool for health professionals?</i> (0 = not useful at all; 10 = very useful)	9.56	1.18	9.58	1.17	9.50	1.24	9.80	.561	0.591
<i>Are ADs a useful tool for family members?</i> (0 = not useful at all; 10 = very useful)	9.59	1.06	9.57	1.14	9.57	1.00	9.93	.258	0.969
<i>Does naming a surrogate via an AD facilitate medical decision making?</i> (0 = not at all; 10 = a lot)	9.35	1.55	9.32	1.64	9.35	1.49	9.67	.724	0.873
<i>Would you, as a health professional, recommend that a patient complete an AD?</i> (0 = never; 10 = always)	9.55	1.30	9.52	1.45	9.56	1.11	9.80	.414	0.771
<i>Would you like your own family members to have an AD?</i> (0 = I would not like it at all; 10 = I would like it very much)	9.38	1.60	9.23	1.88	9.59	1.06	9.53	1.30	0.029
<i>Would you, as a potential patient, fill out your own AD?</i> (0 = not likely at all; 10 = very likely)	9.57	1.32	9.45	1.59	9.72	.839	9.80	.561	0.048
<i>Would you respect the wishes expressed by a patient in an AD?</i> (0 = never; 10 = always)	9.71	0.88	9.74	0.78	9.65	1.05	9.93	.258	0.375
<i>Will you complete your own AD within the next year?</i> (0 = not likely at all; 10 = very likely)	7.21	3.45	7.24	3.59	7.05	3.27	8.07	3.20	0.622

<sup>a</sup>All answers are based on a Likert scale that ranged from 0 (very negative response/attitude) to 10 (very positive response/attitude). Abbreviations – Advance directive: AD; standard deviation: S

**Table 4.** Primary care physician specialty physicians in Puerto Rico self-reported knowledge of and attitudes towards ADs<sup>a</sup>.

	Overall		Internal Medicine		Family Medicine		General Medicine		Others		ANOVA
	Median	SD	Median	SD	Median	SD	Median	SD	Median	SD	
<i>Self-reported level of knowledge on ADs (0 = poor ; 10 = excellent)</i>	8.10	1.98	8.63	1.51	8.00	2.21	8.06	1.82	6.65	2.85	0.005
<i>It is convenient for patients to plan their medical wishes stating them in a written AD? (0 = not convenient at all; 10 = very convenient)</i>	9.47	1.43	9.82	0.70	9.49	1.78	9.34	1.37	9.00	1.87	0.122
<i>Are ADs a useful tool for health professionals? (0 = not useful at all; 10 = very useful)</i>	9.56	1.18	9.86	0.45	9.72	0.83	9.30	1.57	9.47	0.87	0.009
<i>Are ADs a useful tool for family members? (0 = not useful at all; 10 = very useful)</i>	9.59	1.06	9.79	0.65	9.76	0.68	9.38	1.39	9.47	1.01	0.025
<i>Does naming a surrogate via an AD facilitate medical decision making? (0 = not at all; 10 = a lot)</i>	9.35	1.55	9.69	0.97	9.49	1.48	9.03	1.86	9.71	0.47	0.022
<i>Would you, as a health professional, recommend that a patient complete an AD? (0 = never; 10 = always)</i>	9.55	1.30	9.81	0.60	9.67	1.17	9.33	1.60	9.41	1.18	0.090
<i>Would you like your own family members to have an AD? (0 = I would not like it at all; 10 = I would like it very much)</i>	9.38	1.60	9.69	1.26	9.47	1.55	9.11	1.83	9.71	0.69	0.101
<i>Would you, as a potential patient, fill out your own AD? (0 = not likely at all; 10 = very likely)</i>	9.57	1.32	9.85	0.49	9.59	1.35	9.39	1.60	9.65	0.862	0.195
<i>Would you respect the wishes expressed by a patient in an AD? (0 = never; 10 = always)</i>	9.71	0.88	9.79	0.83	9.79	0.70	9.59	1.04	9.94	0.24	0.238
<i>Will you complete your own AD within the next year? (0 = not likely at all; 10 = very likely)</i>	7.21	3.45	7.67	3.55	7.49	3.29	6.72	3.52	7.35	3.30	0.189

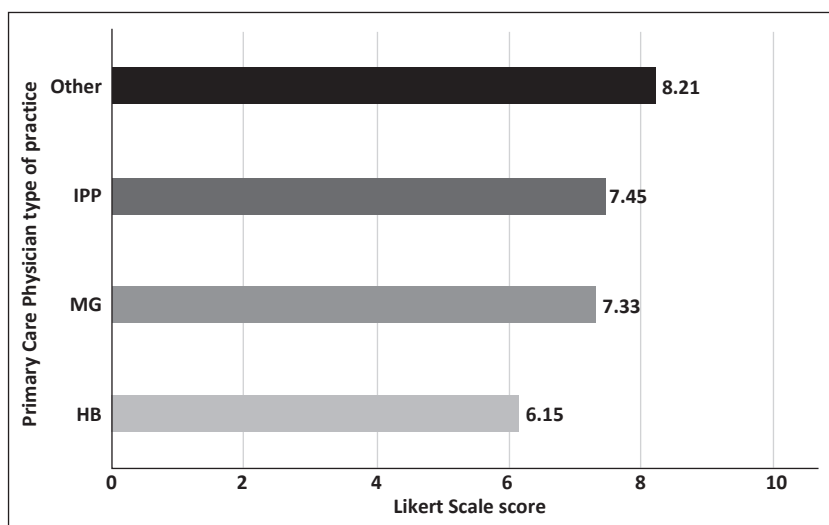
<sup>a</sup>All answers are based on a Likert scale (0–10). Abbreviation. advance directive: AD; standard deviation: SD

sufficient knowledge of ADs. However, only 46% had accurate knowledge and only 16% reported knowing about the pertinent regulatory policies (29). Similarly, a 2018 study by Aguilar-Sánchez et al. showed that 55.9% of the medical and nursing professionals knew that ADs were regulated by law in Spain, and only 22.2% of the sample reported that they had read the AD document (30).

Furthermore, our study shows a positive perception of ADs in the participating PCPs, which is consistent with the literature (31–33). Puerto Rican PCPs have a positive attitude toward ADs and recognize them as a helpful and useful tool for the patients, relevant healthcare workers, and patients’ families to make decisions. Interestingly, a positive perception did not necessarily translate to a physician’s positive intention to complete their own AD in the short term. These findings highlight those of previous studies that have shown that for patients and providers with positive perceptions of advance care planning, especially those with ethnically diverse backgrounds, factors beyond access to information (e.g., culture, religion, lack of

understanding of medical and/or legal jargon) may influence AD completion (25,31,34).

Advance care planning and AD completion are essential to address as we face a growing aging population. By 2020 more than 100 million people had turned 60 years old in Latin America and the Caribbean, and more than half can expect to



**Figure 1.** Primary care physician type of practice (hospital-based: HB; medical group: MG; independent private practice: IPP; and other) and physicians’ score on the likelihood of completing their own AD in the near future.

live past 80 years of age (12). Latinos on the US mainland and in Latin American countries report having few EOLC discussions and have low AD completion rates (22–25). There is a growing need to better understand EOLC in Latinos and the role PCPs play in it. Future studies should explore training PCPs to work with a variety of issues, of which advance care planning and ADs merit special attention; however, it is also important to address qualitative descriptions of barriers to and facilitators of EOLC discussions on ADs completion as well as to study the relevant protocols that have already been established by PCPs in Puerto Rico. Furthermore, there is a critical need to reliably report and document ADs in Puerto Rico in order to better understand our general population's reality.

Our study had several limitations. First, our sample was limited to a specific group of PCP specialties. However, there are other physician specialties (e.g., geriatrics, preventive medicine, obstetrics and gynecology) and medical providers that provide primary care and whose awareness and perceptions of ADs could be explored in future studies. Furthermore, although the reported research was conducted at the largest medical conferences in Puerto Rico, these all took place in the metropolitan area, which could limit the diversity of our physician population. In addition, our study looked at the self-reported knowledge of physicians regarding ADs, which may not necessarily reflect the true knowledge of these individuals on the subject. Lastly, the study was strictly quantitative and did not consider the social, cultural, and religious factors that may have influenced the participating physicians' responses on this topic.

## Conclusions

To our knowledge, this is the first study to have explored the awareness and attitudes of Puerto Rican PCPs on ADs since the Law 160 was established in Puerto Rico in 2001. Our study demonstrates that the Puerto Rican PCPs surveyed had high self-rated knowledge and a strongly positive attitude toward ADs and their importance in improving patient care. However, this positive perception did not correlate with their level of awareness regarding the legal aspects of ADs. Our results suggest that improvements in the education of health professionals with regard to ADs are needed to increase in physicians both the knowledge of the legal standards governing ADs and the commitment of these professionals to ensuring that patients complete such directives.

## Resumen

**Objetivo:** Las directrices anticipadas (DA) son documentos legales diseñados para garantizar la preferencia de atención médica del paciente. Los médicos de atención primaria (MAP) son pieza clave para promover la elaboración de las DA. Además, los niveles de conocimiento y las actitudes de los MAP hacia las DA se ha relacionado con tasas de elaboración positivas en los pacientes. En este proyecto, buscamos identificar los

niveles de conocimiento y actitudes hacia las DA en los MAP puertorriqueños. **Métodos:** Distribuimos cuestionarios en conferencias médicas de atención primaria en Puerto Rico (PR) para explorar el conocimiento y las actitudes de los MAP sobre las DA. **Resultados:** Se recopilieron 332 encuestas. Los MAP en PR tenían un alto conocimiento autoevaluado sobre las DA, siendo más alto en médicos internistas ( $8,63 \pm 1,51$ ). Sin embargo, menos del 60% de todos los médicos reportó conocer o haber leído las leyes aplicables a las DA en PR. Los MAP puertorriqueños mostraron actitudes muy positivas hacia las DA y las reconocieron como herramientas útiles para que los pacientes, los trabajadores de la salud y las familias tomen decisiones sobre la atención médica. Los médicos internistas mostraron las actitudes positivas más fuertes entre todas las especialidades. A pesar de la utilidad percibida, los MAP puertorriqueños tenían una baja predisposición a completar sus propias DA en el futuro cercano. **Conclusiones:** Nuestros resultados sugieren que se necesitan mejoras en la educación de los MAP sobre las DA para aumentar tanto el conocimiento legal como la participación de los médicos en las mismas.

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