Relatives' Presence During Cardiopulmonary Resuscitation

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Background: The question of whether or not to allow family to be present during resuscitation is relevant to everyday professional health care assistance, but it remains largely unexplored in the medical literature.

Objectives: We conducted an online survey with the aim of increasing our knowledge and understanding of this issue.

Methods: This is a cross-sectional, multicenter, descriptive, national, and international study using a web-based, voluntary survey. The survey was designed and distributed through a medical website in Spanish, targeting physicians who frequently deal with critical patients.

Results: A total of 1,286 Argentine physicians and 1,848 physicians from other countries responded to this voluntary survey. Of Argentine respondents, 15.8% (203) treat only children, 68.2% (877) treat adults, and 16% (206) treat patients of any age. The survey found that 23% (296) of Argentine and 20% of other respondents favor the presence of family members during cardiopulmonary resuscitation ($p = 0.03$). This practice was more common among physicians treating pediatric and neonatal patients than among those who treat adults. The most commonly reported reason (21.8%) for avoiding the presence of relatives was concerns that physicians, communications, and medical practices might be misunderstood or misinterpreted.

Conclusions: Avoiding relatives' presence while performing cardiopulmonary resuscitation is the most frequent choice made by the surveyed physicians who treat critical Argentine patients. The main causes for discouraging family presence during cardiopulmonary resuscitation or other critical procedures include the following: risk of misinterpretation of the physician's actions and/or words; risk of a relative's decompensation; uncertainty about possible reactions; and interpretation of the relative's presence as negative.

Cardiopulmonary resuscitation (CPR) practices have come under increasing scrutiny in recent years, due to published evidence-based research and increased emphasis on provider training and in international practice guidelines; however, a number of questions remain unanswered [1]. With an incidence of >200,000 procedures per year in U.S. hospitals alone, CPR is a very common medical intervention [2]. The practice of allowing the patient's family members to be present during CPR was first discussed by Hanson and Strawser in 1992 [3]. Subsequent publications have extended the issue to include other relatives' presence during CPR. The existing literature includes health care professionals' opinions, general public's views, and program evaluations of allowing family members to be present during CPR, according to a thorough review by Porter et al. [4] of this controversial topic.

In spite of this controversy, medical and neonatal professional associations in industrialized countries recommend offering relatives the possibility of attending resuscitation procedures [5–8]. In the first large randomized study on the presence of family members during CPR in France, Jabre et al. [9] provided stronger evidence on the issue, suggesting that relatives' presence has a positive effect on the family psychology, does not interfere with health care professionals' resuscitation procedures, and does not result in increased stress.

Many countries, however, and especially those in Latin America, seldom provide practice guidelines indicating either the presence or absence of family members during CPR; moreover, neither parents nor relatives are likely to be given the option of attending or not attending a patients' CPR [10–12]. In Argentina, the pediatricians' association (Sociedad Argentina de Pediatría), in their children's CPR courses, offers specific guidelines regarding relatives' presence. The Sociedad Argentina de Pediatría emphasizes the desirability of promoting family presence under certain conditions or circumstances [13]. Unfortunately, these recommendations are seldom followed [13].

Given the importance of this practice to health care providers, family members, and patients in a wide variety of clinical settings and the lack of relevant published research, we conducted an online survey with the aim of increasing our knowledge and understanding of this issue. The survey was designed to identify and describe the professional opinions and clinical practice of health care professionals relating to the practice of allowing relatives to be present during CPR, both in Argentina and in the other, participating Latin American countries.

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MATERIALS AND METHODS

This study is a cross-sectional, multicenter, descriptive, national, and international study using a web-based, voluntary survey (Online Appendix 1). Surveys were conducted between October 1 and October 31, 2014. All health care professionals who subscribed to the IntraMed website and who met the inclusion criteria were asked to participate. IntraMed is a scientific-content sharing medical network and has been online since 1997. This site requires user registration, and registration is free to all eligible site members.

On the day of study initiation, October 1, 2014, 93,115 Argentine physicians and 151,301 physicians from other Spanish-speaking countries were registered on the IntraMed site. A direct link to the survey was provided through the IntraMed website during the data collection period. A total of 3,000 physicians were expected to respond (sample size sufficiently representative of the overall population for a heterogeneity level of 50% and a confidence interval of 95%).

Participation was restricted to IntraMed users treating critical patients (estimated to be not more than 20% of the total medical population).

The survey was set as "open" to the entire IntraMed medical subscribers community, regardless of country of origin, and all registered users were invited to participate. Data collection used a web-based electronic survey platform. Questionnaires were checked for correct visual formatting in the most popular web browsers (Internet Explorer 6 and 7, Chrome, and Mozilla Firefox version 2).

The survey was developed in HTML, using Macromedia Dreamweaver MX software (version 7.0.1, Macromedia Ind., San Francisco, California). Input data were automatically transferred in real time to a multiuser relational database designed in Microsoft Access (Microsoft Corporation, Redmond, Washington). Data validation was performed with JavaScript (Sun Microsystems, Santa Clara, California).

Survey responses were stored along with demographic information and other selected options separately, so that it was on the whole technically impossible to identify users' personal data. This information technology strategy was employed to preserve individual respondents' privacy.

The following demographic information, in addition to the survey question responses, was collected: sex; age; year of graduation as a medical doctor; year of graduation as a specialized physician; environment and community the responder develops its activity on; and specific specialty area.

The analysis of survey variables was descriptive and included relative frequencies and percentages. A chi-square test with a level of statistical significance of 0.05 was used to compare qualitative variables. Intergroup percentage comparison was performed using the proportion-comparison test with normal distribution approximation.

Only the study research staff had access to survey data, which were collected only for the current research project. Survey responses were stratified by country of origin and specialty (including emergency room, neonatal intensive care unit, pediatric intensive care unit, intensive care unit for adults, coronary care unit, outpatient emergencies). Other classifications included age of treated patients, type of health care system (funding of the institution), and frequency of CPR procedures performed.

RESULTS

The total number of Argentine physicians who began the survey was 2,331; however, only 1,286 (55.2%) answered "yes" to the first question, that is, whether they treated critical patients, and were able to continue and complete the questionnaire. Of study completers, 554 (43.1%) were women. The proportion of Argentine respondents by sex was then compared with the proportion by sex in the overall membership of Argentine IntraMed subscribers as of November 1, 2014. This sex comparison resulted in a significant difference ($p < 0.001$), as Argentine male respondents treating critical patients represented 56.9% of the sample, whereas the overall percentage of male physicians subscribed to the portal is only 46.4%.

Also, 3,717 non-Argentine physicians from participating South American countries began the survey (only 2.5% of the subscribed foreign physicians), and 1,848 of these respondents indicated that they treat critical patients and, therefore, were included in the analysis. The majority of these respondents were male physicians (67.3%). Table 1 shows the distribution of foreign respondents by country and Table 2 shows the distribution of Argentine respondents by Argentine province.

Survey data from Argentine respondents were stratified by patients' age groups, revealing that 15.8% treat only children ($n = 203$), 68.2% treat only adults ($n = 877$), and 16% treat all patients, regardless of age ($n = 206$).

Regarding the institutional funding source of the Argentine health care providers, 51.2% of the participating Argentine physicians work exclusively in publicly funded health care institutions ($n = 658$), 27.2% work in the private system alone ($n = 350$), and 21.6% work in both systems ($n = 278$).

When asked the primary study question, that is, "What is your most frequent attitude toward the presence of family members when patient requires CPR?," only 23% ($n = 296$) of all the Argentine physicians who completed the survey indicated that they encouraged family members to be present during CPR; the percentage was even lower (19.8%) among doctors from other countries ($p = 0.03$).

The last question was conditioned on the answer to the primary research question: Argentine respondents who indicated they discouraged relatives' presence during CPR were asked for the reasoning behind their attitude. The responses to this question are summarized in Table 3.