

# Intention to register as organ donors: a survey of adolescents

**Background**—Little is known about factors that influence the intention of adolescents to register as organ donors. The identification of such factors has important implications for the development and implementation of educational programs and subsequent donor registration rates.

**Objective**—To determine whether adolescents with an expressed commitment to becoming organ donor registrants differ significantly from nondonors on sociodemographic characteristics and factors influencing their decision.

**Participants**—Four hundred forty-five adolescents visiting a Department of Motor Vehicles office for a permit or license ( $n = 153$ ) or attending a driver's education course ( $n = 292$ ) completed a semistructured interview and questionnaire.

**Results**—Female (52.6%) and white (55.8%) adolescents were more likely to have favorable donation intentions relative to male (45.6%) and nonwhite (39.0%) adolescents ( $\chi^2 = 7.5, P = .02$ , and  $\chi^2 = 19.7, P = .003$ , respectively). Those with favorable donation intentions also endorsed significantly more positive factors (benevolence, need awareness, existentialism) as being more important in their decision. Adolescents who did not want to donate (58.7%) and those who were undecided (23.1%) were less likely to have discussed their decision with parents than were those who wanted to donate (67.7%,  $\chi^2 = 63.6, P = .0001$ ). Finally, providing adolescents with a free driver's license in exchange for organ donor registration would have the greatest impact on registering undecided adolescents (29.8%,  $\chi^2 = 33.2, P = .0001$ ).

**Conclusions**—There is a pressing need for more systematic and culturally sensitive organ donation education directed toward adolescents, and the Department of Motor Vehicles and driver's education courses may be appropriate venues. An educational program from the US Department of Health and Human Services, *Decision: Donation*, could be used in this context. (*Progress in Transplantation*. 2006;16:260-267)

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The severe shortage of donor organs for transplantation has been well documented.<sup>1,2</sup> Public education campaigns have attempted to increase awareness of the need for more organ donors, with varying levels of success.<sup>3</sup> Until recently, educational programs have focused predominantly on adults. Under former US Department of Health and Human Services Secretary Tommy Thompson, the Division of Transplantation developed *Decision: Donation—A School Program That Gives the Gift of Life*.<sup>4</sup> This program provides instructional packages for high school educators who are interested in informing adolescents about the importance of organ and tissue donation.

There are several reasons why adolescents should be the focus of organ donation education. First, many adolescents lack basic information about organ donation and the need for transplantation.<sup>5-7</sup> Second, virtu-

ally all adolescents in the United States are asked at a Department of Motor Vehicles (DMV) office at the time of obtaining a driver's permit or license whether they want to register as an organ donor. Because of the significance of this decision, it seems imperative that adolescents have an adequate understanding of organ donation so that an informed choice can be made. Third, adolescence is a critical period for the dissemination, promotion, and acquisition of important health-related knowledge and behavior.<sup>8</sup> Fourth, interventions designed to promote organ donation awareness and to facilitate family discussions about donation can have a positive impact on adolescents' donation intentions.<sup>9,10</sup> Fifth, it is much easier for adults to maintain a behavior already initiated during adolescence (ie, assuming they registered as an organ donor at the time of obtaining a driver's permit or license) than it is to initiate a new

behavior (ie, to become a registered donor) that is inconsistent with an earlier choice (ie, if they chose not to be an organ donor when obtaining their driver's permit or license). Finally, although precise figures are unknown, it can be estimated that up to one third of potential deceased organ donors are between the ages of 15 and 25 years.<sup>2</sup> Higher donor registration rates at the time of obtaining a driver's permit or license would likely contribute to higher donor conversion rates in this age group.

Despite the importance of organ donation education during adolescence, there is a surprising paucity of organ donation research focused on this age group. Sirois et al<sup>5</sup> found that adolescents were more likely to be registered organ donors if they had higher organ donation knowledge, more favorable attitudes, and more positive parent-adolescent communication around the topic of donation. Spigner et al<sup>11</sup> reported low knowledge about organ donation among adolescents as well as significant ethnic differences in willingness to become organ donors. African Americans and Asian Americans were less willing than other ethnic groups to register as organ donors. Other researchers have implemented and evaluated school-based educational strategies designed to increase organ donation knowledge, family discussion about donation, and donor registration, with varying degrees of success.<sup>7,9,10,12</sup>

In this article we examine whether adolescents with an expressed intention to register as an organ donor differ significantly from nondonors and those who are undecided on sociodemographic characteristics and factors considered important to them in the decision-making process. It seems critical to better understand the correlates of donation intentions so that interventions can be developed that appropriately target these areas. Also, in light of when (at the time of obtaining driver's permit or license) and where (DMV office) adolescents are first asked to formally indicate a donor registration preference, it seems imperative to assess potential correlates of donation intentions in close proximity to this decision.

## Methods

### Study Design and Subject Recruitment

We conducted a nonrandom, cross-sectional survey of 2 adolescent cohorts. The first cohort was recruited between June 2004 and October 2004 and included adolescents who were visiting the Alachua County, Fla, DMV office to obtain a driver's permit or license. The second cohort was recruited between October 2004 and December 2004 and included adolescents who were enrolled in 1 of 4 driver's education classes in 2 counties in rural central Florida. Inclusion criteria were at least 15 years old, responding to DMV staff member about organ donation intention within the next 9 months, ability to read English, and verbal assent.

At the DMV office, prospective participants who were entering the office were approached individually by a trained research assistant and informed about the study. Adolescents enrolled in the driver's education courses were informed about the study as a group by a research assistant at the beginning of the class. In both environments, participants completed the survey after verbal assent was given. The University of Florida Institutional Review Board approved all study procedures.

### Survey Administration and Content

In all instances, the survey was administered by a research assistant who received training in the protection of human research participants. The research assistant first determined that the adolescent met study eligibility criteria, then answered all study-related questions and formally documented assent upon enrollment. The survey comprised both a semi-structured interview and a brief questionnaire. The development of the semi-structured interview and questionnaire was guided by theoretical considerations,<sup>13</sup> our previous donation surveys involving adults,<sup>14</sup> and previous research with adolescents.<sup>6,9,11</sup> We then pilot tested the survey with 6 adolescents who had either obtained or were planning to obtain their driver's permit within 6 weeks. Feedback was provided regarding the clarity and comprehension of the questions, overall length of the measure, and recording method, which served to guide modifications to the survey.

The interview portion of the survey comprised 67 questions that gathered information about sociodemographic characteristics, organ donation intentions, and parent-adolescent communication about donation intentions. The questionnaire portion of the survey included 55 statements to which the participant indicated whether it was considered and how important it was in making their donation decision. Statements were designed to capture factors that have been shown to be associated with organ donation decision making, including attitudes, beliefs, altruism, and social norms.<sup>14</sup> In addition to the 55-item questionnaire, adolescents with a stated intention to donate were asked to indicate whether they would apply any restrictions on which organs could be recovered at the time of their death. The questionnaire concluded with the following question: "Some people believe that individuals who agree to donate organs when they die should get their driver's license for free. Would getting your driver's license for free make you more likely or less likely to sign up as an organ donor, or would it have no effect at all?" Participants were ensured of anonymity in responding to the survey and those in the driver's education courses were informed that their survey responses would not affect their performance evaluation or grades in the class.

To effectively capture their content and to facilitate subsequent interpretation of study findings, 8 research

assistants coded each of the 55 statements on the questionnaire into 1 of 12 conceptually driven categories: (1) benevolence, the desire to help others; (2) wastefulness, seen as wasteful not to donate; (3) awareness, knowledgeable about transplantation and donation need; (4) social norms (positive), positive influence of parents, peers, media, church, or other groups; (5) existential, desire to give meaning to one's life or death; (6) miscellaneous favorable attitudes; (7) precontemplation, limited or no previous consideration of organ donation; (8) social norms (negative), negative influence of parents, peers, media, church, or other groups; (9) body preservation, fears of pain, suffering, disfigurement, or other issues with burial; (10) distrust, concerns about not receiving adequate medical care or premature death declaration; (11) autonomy, desire to maintain authority over body integrity, keep one's own body parts intact; and (12) miscellaneous unfavorable attitudes. In cases in which the coders did not reach majority agreement, they discussed and reevaluated the statements until a consensus was reached.

### Statistical Analysis

First, we used Fisher exact tests or 2-tailed  $\chi^2$  tests to determine whether the 2 adolescent cohorts differed significantly on any of the sociodemographic characteristics. Second, 2-tailed  $\chi^2$  tests were used to examine any differences on sociodemographic variables among those who intended to register as donors, did not intend to register as donors, or were undecided. Third, univariate relationships between the questionnaire categories and donation intention were examined using a 2-tailed  $\chi^2$  test. Fourth, Fisher exact tests or  $\chi^2$  analysis were used to examine the relationship between donation restrictions and sociodemographic characteristics in the intended donor group

only. Finally, 2-tailed  $\chi^2$  tests were used to determine if responses to the financial incentive question varied as a function of donor intention. All data were analyzed using the Statistical Package for the Social Sciences database (SPSS, Version 11, Chicago, Ill).

## Results

### Sample Characteristics

At the DMV office, 169 (77%) of adolescents approached (N=220) agreed to participate, and 153 of them provided complete data for analysis. Of 309 (82%) adolescents informed about the study in driver's education courses (n=365) who agreed to participate, 292 provided complete data. Preliminary analyses indicated that the 2 participant cohorts did not differ significantly on any of the sociodemographic variables ( $P>.05$ ). Therefore, all subsequent data are based on the total sample of 445 adolescents.

Regarding sociodemographic characteristics, all participants were 14 to 16 years old, both genders were equally represented (48.3% male, 51.7% female), and participants' ethnicity (54.6% white, 20.4% black, 8.3% Hispanic, 3.1% Asian or Pacific Islander, 6.5% more than 1 race, 7.1% other) was representative of the region. Religious affiliations included Protestant (47.2%), Catholic (16.0%), Jewish (1.3%), other (15.5%), and none (20.0%).

### Sociodemographic Differences by Donation Intention

Two hundred nineteen participants (49.2%) stated an intention to register as an organ donor, 105 (23.6%) stated an intention not to register as an organ donor, and 121 (27.2%) were undecided about donation. As noted in Table 1, participants who were female (52.6%) and white (55.8%) were significantly more likely to

Table 1 Sociodemographic characteristics of subjects by their intention to donate

Characteristic	No. (%) of subjects			Statistical analysis
	Donate (n=219)	Not donate (n=105)	Undecided (n=121)	
Gender				$\chi^2=7.5, P=.02$
Male	98 (45.6)	63 (29.3)	54 (25.1)	
Female	121 (52.6)	42 (18.3)	67 (29.1)	
Ethnicity				$\chi^2=19.7, P=.003$
White	149 (55.8)	54 (20.2)	64 (24.0)	
Black	29 (36.3)	29 (36.2)	22 (27.5)	
Hispanic	19 (34.6)	13 (23.6)	23 (41.8)	
Other	21 (50.0)	9 (21.4)	12 (28.6)	
Religion				$\chi^2=6.6, P=.36$
Protestant	99 (47.1)	52 (24.8)	59 (28.1)	
Catholic	36 (50.7)	12 (16.9)	23 (32.4)	
Other	31 (45.6)	16 (23.5)	21 (30.9)	
None	50 (57.5)	21 (24.1)	16 (18.4)	

Table 2 Positive and negative factors influencing subjects' donation intentions

	No. (%) subjects			Statistical analysis
	Donate (n=219)	Not donate (n=105)	Undecided (n=121)	
<b>Positive factors</b>				
Benevolence	216 (98.6)	41 (39.0)	53 (43.8)	$\chi^2 = 171.8, P = .0001$
Wastefulness	87 (39.7)	2 (1.9)	7 (5.8)	$\chi^2 = 84.5, P = .0001$
Awareness	190 (86.8)	27 (25.7)	9 (7.4)	$\chi^2 = 230.8, P = .0001$
Social norms	146 (66.7)	0 (0.0)	2 (1.7)	$\chi^2 = 216.9, P = .0001$
Existential	189 (86.3)	38 (36.2)	3 (2.5)	$\chi^2 = 232.5, P = .0001$
Miscellaneous	192 (87.7)	11 (10.5)	4 (3.3)	$\chi^2 = 294.7, P = .0001$
<b>Negative factors</b>				
Precontemplation	51 (23.3)	54 (51.4)	52 (43.0)	$\chi^2 = 28.9, P = .0001$
Social norms	19 (8.7)	58 (55.2)	9 (7.4)	$\chi^2 = 113.8, P = .0001$
Body preservation	37 (16.9)	68 (64.8)	4 (3.3)	$\chi^2 = 128.3, P = .0001$
Distrust	48 (21.9)	50 (47.6)	6 (5.0)	$\chi^2 = 57.6, P = .0001$
Autonomy	46 (21.0)	95 (90.5)	8 (6.6)	$\chi^2 = 207.7, P = .0001$
Miscellaneous	47 (21.5)	91 (86.7)	3 (2.5)	$\chi^2 = 204.9, P = .0001$

have an intention to donate, whereas male (29.3%) and black (36.2%) participants were significantly more likely to have a nondonor intention. Among black participants only, adolescent girls (41.2%) were significantly more likely than adolescent boys (25.7%) to have favorable donation intentions ( $\chi^2 = 7.2, P = .04$ ). Black teenage girls also were more likely to be undecided about donation (31.4%) than were black teenage boys (22.9%). A similar gender pattern was seen among Hispanic participants, with a higher proportion of girls being more likely to register as organ donors (45.5%) or undecided (50.0%) relative to boys (30% and 25%, respectively;  $\chi^2 = 9.6, P = .01$ ). There were no significant differences in donation intention across religious affiliations.

#### Factors Identified as Important When Considering Organ Donation Decision

Table 2 presents a summary of those categorical factors that were identified as important to participants in considering whether to register as an organ donor. If a participant checked one or more statements within a category, then the entire category was considered important to them in the decision-making process for purposes of this study. The first 6 categories represent factors that are favorable toward organ donation, whereas the last 6 categories are unfavorable toward organ donation. Not surprisingly, participants with a stated intention to become organ donors were significantly more likely than those who did not want to donate or were undecided to endorse factors associated with benevolence (98.6%), wastefulness (39.7%), need awareness (86.8%), positive social norms (66.7%), existentialism

(86.3%), and miscellaneous positive attitudes (87.7%) as being important in their decision. Participants who stated their intention not to register as an organ donor were more likely than were those with more favorable attitudes toward donation or undecided to cite negative social norms (55.2%), body preservation (64.8%), distrust of the medical community (47.6%), autonomy (90.5%), and miscellaneous negative attitudes (86.7%) as more important factors in their decision.

We also examined whether factors identified as important in the donation decision-making process varied as a function of gender or ethnicity, in light of the significant relationship between these 2 sociodemographic characteristics and donation intention. Relative to girls, adolescent boys reported that autonomy was more important in making their decision ( $\chi^2 = 9.1, P = .003$ ) and that benevolence and positive social norms were less important ( $\chi^2 = 4.9, P = .03$  and  $\chi^2 = 3.7, P = .05$ , respectively). Black and Hispanic adolescents were less likely than white adolescents to view wastefulness or need awareness as important in their donation decision making ( $\chi^2 = 9.6, P = .02$ , and  $\chi^2 = 12.4, P = .01$ , respectively), and Hispanic adolescents were less likely to be influenced by existential considerations relative to white and black adolescents ( $\chi^2 = 9.7, P = .02$ ).

#### Communication of Donation Intention to Parents

Participants were asked to indicate whether they had communicated their donation intention (donate, not donate, undecided) to their parent(s). As noted in Figure 1, a significantly higher proportion (67.7%) of adolescents who intended to register as donors had informed a parent, compared to those who intended

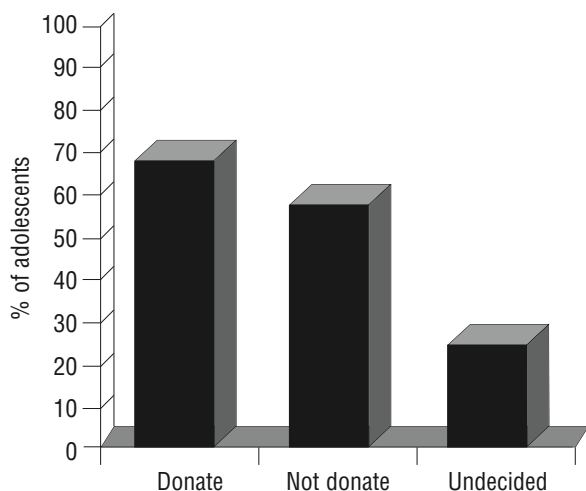


Figure 1 Percentage of adolescents who have discussed their donation intention with parent(s).

not to donate (58.7%) and those who were undecided (23.1%) ( $\chi^2=63.6, P=.0001$ ).

#### Donation Restrictions Among Those With Favorable Intentions

Among those with an intention to register as donors ( $n=219$ ), 67% reported a desire to donate all organs at time of death. The percentage of participants that would restrict donation of specific organs (33%), despite stating an intention to be an organ donor, is highlighted in Figure 2. Adolescents were least likely to donate the pancreas (13.8%), lungs (12.8%), and heart (9.9%). In addition, 32% of participants who intended to register as donors stated that they would not allow their eyes to be removed after death.

#### Indirect Financial Incentive to Register as an Organ Donor

Responses to the indirect financial incentive question differed significantly by donation intention group ( $\chi^2=33.2, P=.0001$ ). As shown in Figure 2, getting a driver's license for free would have the most favorable donor registration impact on those who are currently undecided (29.8%). However, this potential gain in donor registration among those who are undecided must be balanced by those who reported being less likely to register as donors if such an incentive were offered. A free driver's license would have either no effect at all or would serve only to solidify favorable intentions among those who stated an intention to register as an organ donor. Similarly, the vast majority of those with nondonation intentions are not likely to be persuaded by a free driver's license.

#### Discussion

This study examined the donation intentions of adolescents who were applying for a driver's permit or

license or attending a driver's education course. Understanding the factors that contribute to donation decision making in these adolescents is important because they will soon have the opportunity to place an "organ donor" stamp on their driver's license. With increasing numbers of patients awaiting transplantation in the context of a severe organ shortage, there is a pressing need for identifying the most optimal targets for donor education, especially during adolescence. Therefore, we conducted this study to assess the organ donation intentions of adolescents and factors that might influence their decision to become or not become organ donors.

Findings from this study indicate that there is a pressing need for more systematic organ donation education in this age group. Only half of the adolescents surveyed intended to register as organ donors at the time of being asked by a DMV staff member. It is not known what percentage of adolescents sign up to be organ donors when they obtain a driver's permit or license, but recent studies conducted at DMV offices have found that only about one third of adolescents and adults have an organ donor designation on their driver's license.<sup>5,14</sup>

Health-related research has consistently shown that intention does not always lead to behavioral action,<sup>15</sup> so it is likely that some adolescents in the current study will not follow through with their stated donation intention when asked. Although we examined donation intention as close in time as possible to the actual decision-making moment (ie, in the waiting room of the DMV office and in driver's education courses), it is still possible for other variables to disrupt the intention-behavior sequence.

For example, Sirois et al<sup>5</sup> found that nearly 5% of parents did not allow their prodonation adolescent to register as organ donors at the DMV office. Also, our finding that a third of adolescents who intend to donate have not yet discussed their intention with a parent further opens the possibility that adolescents with favorable donation intentions will not register at the DMV office. Moreover, it has been our experience that, in some instances, DMV staff may not ask the donation question despite the requirement to do so. In this situation, an adolescent who intends to become an organ donor but who is otherwise not proactive about it may leave the DMV office with a driver's license devoid of a donor stamp.

The first time most individuals are formally asked to state their organ donation intention is at the time of receiving a driver's permit or license. In many states, an affirmative organ donor decision at the time of obtaining a driver's permit or license is entered into a donor registry and is considered a form of legal authorization or consent to donation in the event of death. It is critical, therefore, to deliver organ donation educational programs as close to this decision point as

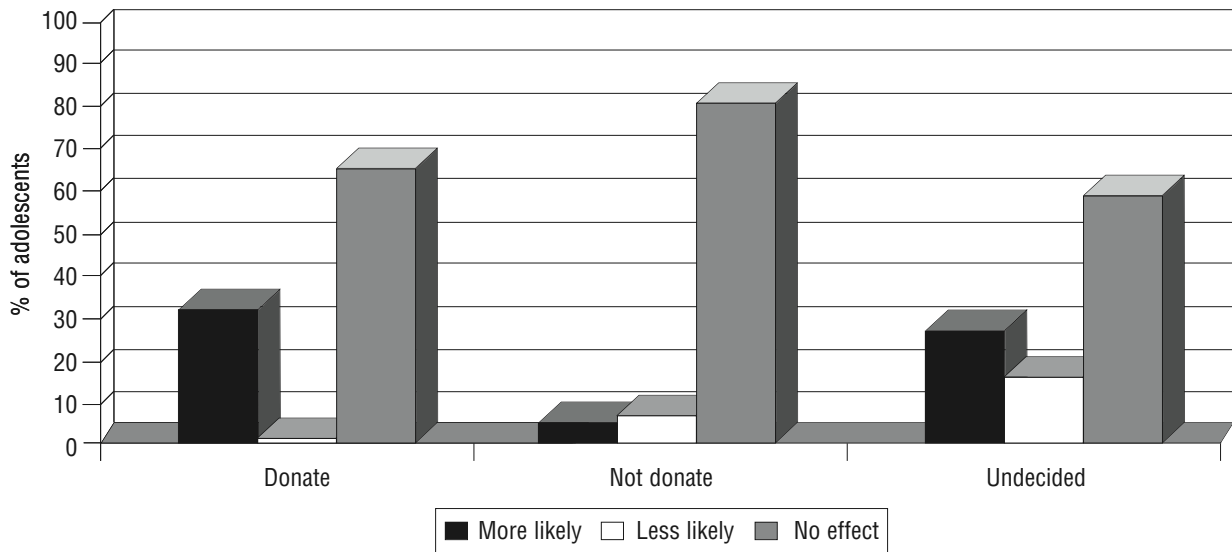


Figure 2 Percentage of adolescents for whom a free driver's license would increase, decrease, or have no effect on likelihood of donor registration.

possible so that adolescents have had the opportunity to consider the information, their decision, and an action plan. The DMV serves as a critical portal for organ donation registration. It is familiar to most everyone, it is highly accessible, and it is the preferred portal for donor registration among some minority groups.<sup>16</sup>

Indeed, the Final Report of the US Department of Health and Human Services' conference on Guidelines for Donor Registry Development<sup>17</sup> emphasized the need to garner the support of DMV administration, better educate and motivate staff regarding the benefits of organ donation, ensure that the staff can answer basic organ donation questions, and make organ donation information available to the public. The Alabama Organ Center program, which focuses on education and developing relationships with DMV office staff, serves as a model for effective organ procurement organization–DMV collaboration.<sup>18</sup>

However, disseminating information about organ donation and obtaining consent for a donor registry are not the primary function of the DMV, and such collaboration may not be possible across all counties and states. Consequently, driver's education courses might be a better option for the dissemination of organ donation information. The US Department of Health and Human Services' *Decision: Donation* educational program<sup>4</sup> or other published educational modules<sup>9,10,19</sup> could be used in this context.

Regardless of how and when adolescent donor education programs are implemented, it is imperative that they address factors that adolescents consider most important in making a decision. In addition to addressing the positive aspects of donation (eg, what donors can do to help children and adults with life-threatening illness awaiting transplantation, existential issues, and

how making a decision and communicating it to family members eases the burden on families at the time of death), educational modules should attend to the perceived negative aspects of donation, including concerns about body preservation, negative media images, and distrust of medical professionals. We found that, for most adolescents, both positive and negative factors are considered in the decision-making process. It is the cost-benefit analysis of these factors that likely determines whether the adolescent chooses to become a donor.

Moreover, gender and ethnicity differences in organ donation attitudes and concerns should be considered in educational programs. We found that donation intention was lower in boys and in minority participants, especially blacks and Hispanics. It has long been known that women are more likely than men to have favorable attitudes toward organ donation and to register their intentions.<sup>20</sup> However, findings from our study and others<sup>5,10</sup> suggest that these attitudes likely form during adolescence, or even earlier. Adolescent boys report more concern about maintaining autonomy than any other issue relative to donation intention. Specifically, they do not want to relinquish control over what happens to their body after death and they more likely view the maintenance of wholeness as essential. Educational campaigns should perhaps place even more emphasis on the notion that by registering to become an organ donor (or not), one is exerting more control over decision making at the time of death.

Similarly, minority adolescents are less likely to state an intention to register as an organ donor.<sup>7,11</sup> Relative to whites, minority adolescents, especially Hispanics, are less likely to be influenced by statements regarding the wastefulness of being buried (or cremated) with otherwise transplantable organs, the existential

benefits associated with organ donation, or the general need for more donated organs. Another important finding is that almost half of Hispanic participants were undecided about donation. This represents an important opportunity for intervention, but also highlights the need for educational programs to be tailored to answer their primary questions and concerns from a culturally sensitive perspective.<sup>21,22</sup> This might include an emphasis on the need for donated organs within the larger Hispanic population, using actual transplant candidates and donor family members in the message delivery, and using Hispanic donation educators from the local community.

The frequency and quality of the parent-adolescent communication about organ donation is associated with donation intention.<sup>5</sup> One or more parent-adolescent discussions about donation can improve organ donation intentions and registration rates among adolescents.<sup>5,10</sup> Although most adolescents with both favorable and unfavorable donation intentions in our study had communicated their views to parents, very few of the undecided adolescents had done so. Despite the sensitivity that parents may have about discussing death with their adolescents, Waldrop et al<sup>12</sup> have shown that high school students are able to effectively lead such a discussion within the family and that the vast majority of parents view it favorably. Regardless of their donation intention, the importance of adolescents communicating it to their parents cannot be overstated. Research has shown that the donation decision at the time of a family member's death is considerably easier when the deceased's donation intentions are known.<sup>23,24</sup>

Although most adolescents with favorable donation intentions would donate all organs, one third would place restrictions on which organs could be recovered. Surprisingly, the pancreas and lungs were the least likely to be donated. In the case of the pancreas, it is also possible that some adolescents do not fully understand its role or function and, therefore, the need for it as a transplantable organ. Because we did not ask participants to state the reasons for such restrictions, we can only speculate on the basis of previous findings that there may be idiosyncratic attitudes and beliefs about the preservation of certain organs at the time of death.

Perhaps most striking was the finding that one third of participants with favorable donation intentions would not donate their eyes at the time of death. Previous research with adults has suggested that pain and suffering concerns and religious beliefs may play a role in the donation of eyes and other tissues.<sup>25,26</sup> Additional research with adolescents is needed to delineate those factors most associated with consent or refusal to donate cornea tissue at the time of death.

Providing adolescents with a driver's license for free in exchange for their participation in an organ donor

registry would seem to have the greatest impact on those who are undecided about donation. For most participants, however, this financial incentive would not make a difference in their donation decision. Financial incentives for a favorable donation decision are highly controversial.<sup>27,28</sup> In light of developmental considerations, their minor status, the high number of adolescents who have not adequately considered organ donation, and the many who have not discussed their intentions with their parents, it seems ethically questionable at this time to offer financial incentives for adolescents to register as organ donors. We did not ask parents about their attitude toward this financial incentive, but this should be done because parents often are the ones paying the license fee on behalf of their adolescent. Also, the likelihood of this type of incentive coming to pass is low, because state vehicle registries are not likely to jeopardize this source of revenue in exchange for more donor registrations.

### Limitations

Findings from this study should be evaluated within the context of study limitations. Our participants were self-selected and this likely affects the degree to which findings can be generalized beyond the sociodemographic characteristics of our sample. Also, we examined adolescents' intentions to register as organ donors and, consequently, we do not know whether their subsequent behavioral actions corresponded with these intentions. Future research might examine organ donation attitudes, beliefs, and decision-making processes in the months leading up to the DMV visit for a permit or license and then again immediately following the actual decision.

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