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Evidence from a Randomized Informational Intervention in Tunisia

Maleke Fourati
and Christina Sarah Hauser

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Encouraging Organ Donation: Evidence from a Randomized Informational Intervention in Tunisia*

Maleke Fourati†, Christina Sarah Hauser‡

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Abstract

Organ transplantation saves lives and improves the quality of life of patients who would otherwise depend on costly and invasive treatments. The technology is becoming available in low- and middle-income countries, but the gap between the demand for and the supply of organ transplants remains large. In a randomized controlled trial at a Tunisian university, we evaluate an expert-led intervention designed to inform about organ donation and strengthen trust in medical institutions. We find that the intervention significantly increases deceased organ donor registration among treated students. There is evidence for positive spillover effects on the control group. The survey data provides little support for changes in attitudes and social norms as potential mechanisms. Instead, it reveals large and statistically significant increases in medical and legal knowledge, religious beliefs supportive of donation, and institutional trust among treated students. Finally, we show that family attitudes strongly predict the actual decision to register as a donor. Targeting older segments of the population may further increase the impact and cost-effectiveness of this intervention.

JEL classification: I12, I15, O17, F63

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†South Mediterranean University, Mediterranean School of Business. L.R. MASE (LR21ES21), ESSAI, Université de Carthage. Economic Research Forum. maleke.fourati@msb.tn.

‡[Corresponding author]. Collegio Carlo Alberto. christina.hauser@carloalberto.org.

1 Introduction

Organ transplantation is a cost-effective way to treat organ failure due to genetic conditions, infections such as hepatitis, or chronic diseases such as diabetes (Olawade et al.; 2025). The infrastructure and medical expertise necessary to harvest, store and transplant organs is available in many countries, including an increasing number of low- and middle-income countries (LMICs) (GODT; 2024). Due to ethical and legal concerns, there is no regular competitive market for organs, where prices would rise when demand exceeds supply. Since the supply of organs comes almost exclusively from donations, prices become irrelevant, making organ transplants a special type of commodity.[1] Unsurprisingly, the demand for donated organs tends to exceed the supply by far. This market failure is fatal. Due to the medical challenges of alternative treatments, patients with organ failure face a significantly reduced life expectancy (Stokes; 2011). If alternative treatments - such as dialysis in the case of kidney failure - are possible, they tend to be intrusive and painful for the patient, and costly for health systems. In most cases, patients in need of a transplant will die if the transplant is not available on time (HDSA; 2024). The lack of donated organs is a pressing policy issue, especially in LMICs, where the number of deceased organ donors is particularly low (see Figure 1; GODT; 2024). Based on qualitative and quantitative evidence, we conjectured that a general lack of awareness and low institutional trust contribute to the organ transplant shortage in Tunisia. In this study, we therefore ask whether an expert-led informational intervention can tackle these challenges and increase the number of deceased organ donors.

Economists have endorsed several strategies to increase the supply of donated organs. Nobel prize winner Alvin Roth and co-authors' research on kidney exchange (Roth et al., 2004; Roth et al., 2005) and non-directed deceased donor chains (Rees et al., 2009; Anderson et al., 2015) has contributed to the establishment of a kidney exchange market in the United States. Another policy that has been investigated theoretically (Kessler and Roth; 2012) and implemented in Israel, is giving priority to registered donors and their families (Berzon; 2018). Other studies have tested the potential of price mechanisms in hypothetical settings (Elías et al.; 2019) and the importance of question wording in organ donor opt-in systems (Kessler and Roth; 2025). In continental Europe, "presumed consent" has proven to be successful in

[1] The sale of organs is illegal in most countries, with the notable exception of Iran, which allows for kidney sales among its citizens (Moghaddasi and Sgroi; 2024). All other health systems rely on organ donation and, to a lesser, degree on kidney exchange (Roth et al.; 2004).

increasing the supply of donated organs (Steffel et al.; 2019). The policy makes being a donor the default option: an individual is considered a potential donor *unless* they have actively opted out of the system by declaring themselves a non-donor. However, the success of this policy relies on high levels of institutional trust (Shepherd et al.; 2014). Presumed consent is thus unlikely to be a policy solution in many LMICs, where trust in institutions tends to be low (for example Algan and Cahuc; 2010). Similarly, granting priority to registered donors and setting up kidney exchange markets require substantial institutional capacity, and may therefore only be viable policy options for LMICs in the long run.

Certain constraints to organ donation are likely to be more pronounced in LMICs. Our quantitative and qualitative research in Tunisia revealed a general lack of awareness, institutional mistrust and fear of organ trafficking. Most people also seemed unaware of the Islamic perspective on organ donation; some expressed the fear that organ donation may conflict with their religion. In reality, religious scholars across the Muslim world agree that Islam encourages organ donation, with reproductive organs being the only exception.[2] These context-specific constraints and misperceptions have not been sufficiently addressed by the previous literature. A lack of research on which policies work in non-Western countries may lead to the adoption of inefficient policies, harming patients and societies at large. At the same time, providing new information and correcting misperceptions can be a very cost efficient intervention in many contexts, without institutional change (Jensen, 2010; Dupas, 2011; Wiswall and Zafar, 2014; Dupas et al., 2018; Bursztyn et al., 2020; Banerjee et al., 2024a). This study therefore tests whether an expert-led informational intervention can increase willingness to sign up as potential deceased organ donors.

To address the general lack of awareness about organ transplantation and fear of organ trafficking we observed among Tunisian adults, we designed an informational intervention in partnership with the Tunisian National Center for the Promotion of Organ Transplantation (CNPTO). We first showed a short video testimonial of a patient from a village in northwestern Tunisia who had survived thanks to a heart transplant. The main intervention which followed was led by experienced medical doctors and technicians of the CNPTO. They explained the social significance of organ donation, the medical procedure and the legal

[2] A Tunisian fatwa (religious ruling) explicitly endorsed organ donation conditional on the consent of the donor or their family members back in 2006. An equivalent fatwa by the Al-Azhar University in Cairo, which is widely recognized within the Sunni community, followed in 2009 (Ali et al.; 2020). The prevailing consensus among Muslim religious scholars is that organ donation and transplantation for the purpose of saving lives is not only permitted but also to be encouraged. Ali et al. (2020) hypothesize that a lack of knowledge about these religious rulings and misunderstanding thereof contribute to the widespread skepticism about organ donation among Muslims.

and administrative framework in detail and also dedicated several minutes to the Islamic perspective on organ donation. After the intervention, the team stayed for a short Q&A session with the participants. Within a randomized controlled trial (RCT) at a Tunisian university, we assessed the impact of this informational intervention on young adults' donor status.In Tunisia, adults can express their consent to be a deceased organ donor by adding the word "donor" to their ID. We measured donor status by offering on-the-spot ID changes on campus in collaboration with the CNPTO and the Tunisian Technical and Scientific Police. To assess spillover effects to non-treated students, we collected extensive network data in a baseline survey. We also measured the immediate impact of the intervention on students' attitudes, social norms, medical and legal knowledge, religious beliefs, and institutional trust with an endline survey immediately after the intervention. A follow-up survey six months later gathered further data to assess the persistence of treatment effects and spillovers.

We find that the intervention substantially increased the likelihood that treated students add the donor status to their ID. Treated students are 2.3 percentage points more likely to change their ID. This corresponds to a 177% increase given that only 1.3% of control students changed their ID. While the percent change should be interpreted with caution due to low baseline, the effect survives all robustness checks and remains statistically significant when applying sharpened False Discovery Rate (FDR) q-values. Using the network data, we show that there are large spillover effects to the control group. The control group students who registered as organ donors were highly socially connected to the treatment group. However, only a small number of control students changed their ID, which is why we interpret this evidence with caution. Our spillover estimates suggest that, if we were to increase a control student's number of social ties with the treatment group from 0 to the 1, we would expect them to become 1.6 percentage points more likely to register as an organ donor. The survey data allows us to rule out changes in social norms or attitudes as driving mechanisms behind the increases in donor registration. By contrast, we find large and statistically significant increases in legal and medical knowledge among the treated students (0.9 and 0.8 standard deviations). Religious beliefs around organ donation change: treated students are significantly more likely to know that Islam encourages organ donation and that a traditional funeral is possible after organs have been harvested. When we aggregate the different items, we find that the treatment increases the index by 0.4 standard deviations, significant at the 1% level. Institutional trust is 0.5 standard deviations higher among the treated than among the control group. This effect reflects higher trust in the CNPTO - we observe a positive but not statistically significant treatment effect on trust in the medical system in general -

an increase in the perception that organ donation benefits all categories of persons equally, and a decrease in the perceived frequency of organ trafficking. A six-month follow-up survey suggests that the treatment effects on knowledge, religious beliefs and institutional trust persist. The increase in donor registration is likely to be the result of a combination of these three mechanisms.

Using the baseline data, we conduct further heterogeneity analysis. Anecdotal and qualitative evidence pointed to the importance of the family for the decision to become an organ donor. Based on students' expectations of their families' attitudes towards organ donation, parental education and profession, we construct an index of expected family approval of organ donation at baseline. When we divide our sample into students whose families are likely to approve (disapprove) of organ donation, we find that the treatment effects on attitudes, social norms, knowledge, religious beliefs, and institutional trust are very similar among the two groups. However, treated students whose families are likely to approve of organ donation are significantly more likely to become organ donors. The estimated treatment effect on this subsample is 4.1 percentage points and highly statistically significant, whereas the treatment effect on students whose families are likely to disapprove of organ donation is statistically indistinguishable from zero. Hence, family attitudes do not mitigate the learning effects stemming from the treatment; however, they strongly predict young adults' actual choices. We interpret this as evidence for families acting as a constraint on students' behavior. Corroborating this interpretation, treatment effects on organ donor registration are significantly stronger among young men, who may be less likely to face family-related barriers, than young women. This is a crucial finding for policymakers: the intervention could be even more effective if older segments of the population were also targeted.

This research makes three key contributions to the literature: First, it provides the first rigorous impact evaluation of an expert-led informational intervention on deceased organ donation in a non-Western context. We show that an informational intervention led by medical experts can be highly effective in increasing deceased organ donor registration among young adults. While organ donation legislation differs from country to country, our findings may also be of interest to other LMICs in the MENA region and beyond, which suffer from similar informational constraints, low institutional trust and fear of organ trafficking. To the best of our knowledge, this is also the first study to measure donor status in IDs, a behavioral outcome signaling strong commitment to organ donation.

Second, by showing that higher institutional trust emerges as a robust mechanism be-

hind the observed increases in donor registration, we contribute to a growing literature on the importance of institutional trust for public health outcomes (for example Lowes and Montero, 2021; Martinez-Bravo and Stegmann, 2021; León-Ciliotta et al., 2025). Alsan and Wanamaker (2017) show that medical abuse significantly decreased Black men's trust in the public health system and their well-being in the long run. Banerjee et al. (2024b) show that short messages from a credible public figure can increase compliance with preventive health behaviors. Alsan and Eichmeyer (2024) show that laypersons are the most trusted senders of pro-vaccination messages among disadvantaged groups in the United States. We add to this literature by showing that fostering institutional trust via an in-person intervention led by medical experts can increase deceased organ donor registrations in a context characterized by low institutional trust and fear of organ trafficking.

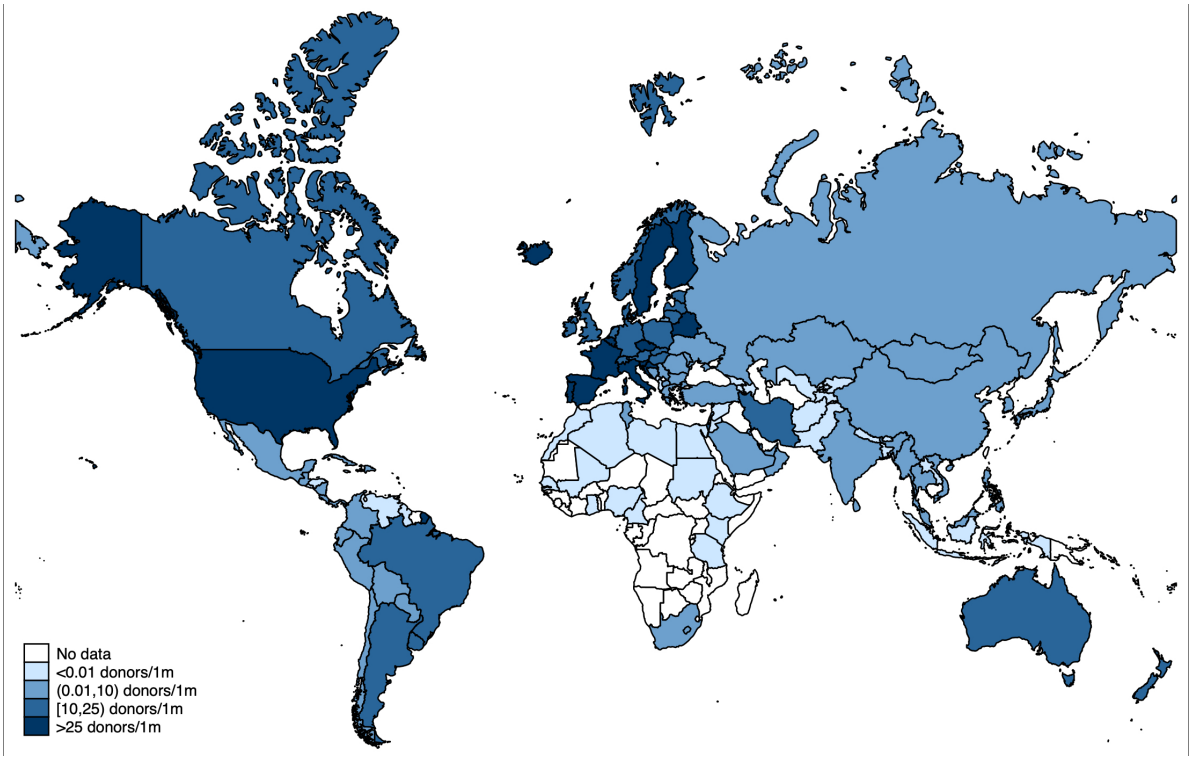
Finally, by documenting that expected family approval is closely related to actual donation decisions, we contribute to a rich literature showcasing the importance of family members for individual decision-making in non-Western contexts. Previous literature has, for instance, emphasized the importance of mothers-in-law for young women's outcomes in India (Anukriti et al., 2020; Anukriti et al., 2022). Our research suggests that, in Tunisia, organ donation is not perceived as an individual choice, but as a decision that involves the whole family. Young adults whose families do not approve of deceased organ donation are unlikely to become organ donors, even though the treatment significantly increased their knowledge and institutional trust. The impact of informational interventions like ours could be amplified by strategically including older family members.

The paper proceeds as follows: Section 2 describes the research design in detail. Section 3 explains our empirical strategy. Section 4 presents results and Section 5 concludes.

2 Research Background and Design

Subsection 2.1 provides legal and technical background information on deceased organ donation and transplantation in Tunisia. Subsection 2.2 describes our evaluation design. We go on to describe our intervention in Subsection 2.3 and discuss the target population in 2.4. Subsection 2.5 briefly describes the outcomes of this study.

Figure 1: Number of Actual Deceased Organ Donors per 1 Million Inhabitants



Notes: Data: Global Observatory on Donation and Transplantation (2024).

2.1 Background

Tunisia is an ideal context for studying deceased organ donation. The country is considered a pioneer in organ transplantation on the African continent and in the MENA region (Haouari; 2019). The first cornea transplant in Tunisia was performed in 1948, followed by the first kidney transplant in 1989 and the first heart transplant in 1993. Founded in 1995, the CNPTO, our implementation partner, is the national organism which oversees organ transplantation. Its responsibilities include removing, storing and transplanting organs, training medical staff as well as managing the national tissue bank and waiting list for organ transplants. Moreover, it is the main organism in charge of promoting awareness of organ donation. The Tunisian lawmaker has imposed high safeguards around organ transplantation: Law No. 91-22 of March 25, 1991, recognizes brain death as the legal criterion for organ donation.[3] Brain death must be confirmed by two independent physicians and organs can only be harvested and transplanted in authorized public hospitals. An algorithm matches

[3]Many other countries, including the United States and Spain, also allow for deceased organ donation after circulatory death (Sade, 2011; Streit et al., 2023).

potential donors and recipients using medical compatibility as the only criterion. By law, the identity of the donor must remain unknown to the recipient. All costs incurred with harvesting and transplantation of organs are covered by the State.

Formally, Tunisia has a presumed consent regime, where all citizens are considered as potential donors as long as they do not register in the national refusal register. In practice, however, the CNTPO does not harvest organs without the explicit consent of the family of the deceased or the deceased themselves: Law No. 99-18 of March 1, 1999, regarding the national ID created the option of adding the word "donor" on the backside of one's ID, next to the blood group.[4] The organism in charge of changing IDs is the Tunisian Technical and Scientific police. Changing one's ID to add the donor status requires signing the respective form and is, by law, free of charge. Falsification is very unlikely, which is the main argument in favor of the policy. However, ID changes come at a logistical cost for the individual who has to bring the relevant form and a biometric picture to a local police station, potentially queue until it is their turn, and subsequently wait for the new ID to be issued. To date, only 13,000 individuals - approximately 0.16% of the adult population - have registered as organ donors by adding the status to their ID (Zannad; 2024), a figure that falls well below the registration rates seen in Europe and North America but is broadly consistent with trends observed in other LMICs (see Figure 1 for actual deceased organ donations).[5]

When a potential donor dies without the donor status on their ID, the CNPTO consults the donor's families for consent to harvest their organs. Refusal rates are high. In 2023, 58.3% of the families who were approached refused. As a result, the CNPTO harvested organs from only 19 deceased organ donors (CNPTO; 2024). Increasing the donor pool would have large marginal benefits: the 19 deceased organ donors provided organs for 52 patients in need of a transplant. In general, one deceased organ donor can save the lives of up to eight patients with organ failure and improve the lives of another 75 by tissue transplantation (HDSA; 2024). Moreover, surgeons learn by doing and become more skilled and efficient as they perform more transplants (Magee and Pomfret; 2021). Alternative treatments such as kidney dialysis are intrusive and painful, as well as expensive for the national health system. For most patients, organ transplantation is more cost-effective and higher deceased

[4]The medical practice is similar in Spain. While a presumed consent regime is formally in place, the national transplant center will always seek family consent before harvesting a potential donor's organs (Streit et al.; 2023).

[5]Tunisia had 17 actual deceased organ donors in 2023 (GODT; 2024), which translates to 1.5 organ donors per 1 million inhabitants. As a reference point, Spain, the global champion in terms of deceased organ donation, counts 48.9 donors per 1 million inhabitants (Rada; 2024); the United States 48.0 (GODT; 2024). Germany has about 10.3 registered donors per 1 million inhabitants (Aerzteblatt; 2024).

organ donation rates would therefore also decrease public spending (Axelrod et al., 2018; Zhang et al., 2023). Given the lack of donated organs, waiting lists for transplants grow: 1,506 patients are on the waiting list for a kidney transplant in Tunisia (CNPTO; 2024). In extreme cases, patients' despair may lead to human rights violations: Egypt has become known as an international hub for organ trafficking from Sub Saharan Africa and "organ transplant tourism" in the Middle East and North Africa (MENA) (COFS; 2011). Rumors about organ trafficking hurt trust in the medical system and are likely to decrease willingness to become organ donors even in neighboring countries (Abouna; 1993). Aissi et al. (2024) find that 73% of Tunisian adults believe that there is illegal organ trafficking in Tunisia. Identifying effective policies to promote deceased organ donation and foster trust in national institutions is therefore an urgent and important policy issue in Tunisia and in LMICs more broadly.

For privacy reasons, Tunisia does not have a centralized register of deceased organ donors (Zannad; 2024). Therefore, the only practical way to measure a behavioral outcome in the Tunisian context was to offer ID changes during an event in collaboration with the technical police. IDs are part of daily life and must be presented to public authorities in many occasions. We therefore interpret ID changes to add the donor status as a behavioral outcome which signals strong commitment to organ donation. The next subsection describes the details of our experimental design.

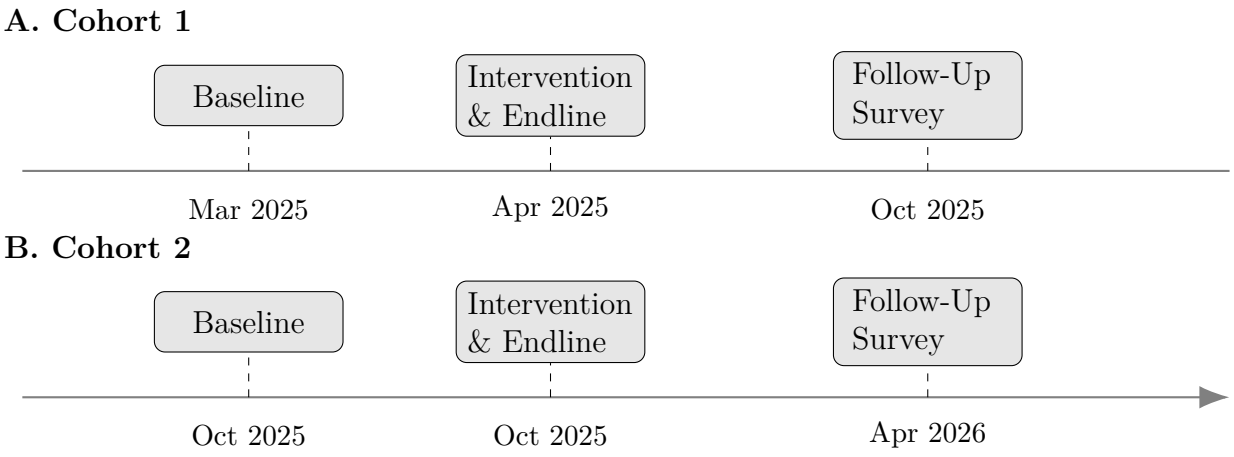
2.2 Evaluation Design

This study was implemented as a cluster randomized controlled trial at the South Mediterranean University (SMU) in Tunis during the academic years 2024/2025 and 2025/2026. SMU is a private university and research institution, which comprises two main departments, engineering and business. In partnership with the CNPTO, we organized a first "Organ Donation Awareness Week" on campus from 7 - 11 April 2025. The event was publicly announced and an advertisement was screened all week.[6] This light-touch intervention was in the background of the more targeted expert-led informational intervention, which was randomized at the classroom level. We programmed an algorithm to identify 42 classes without student overlap from SMU's bachelor programs. After gathering consent from the

[6]For ethical reasons, all students, lecturers and staff on campus had to receive a minimum amount of information about the event. Given that this basic information may already have primed the control group, the estimated treatment effects can be interpreted as a lower bound of the true effect.

university and lecturers, we randomly allocated 21 classes to a treatment and 21 classes to a control condition, stratifying by department and year of study.

Figure 2: Timeline



As illustrated in Panel A of Figure 2, we collect three rounds of survey data from the first cohort of students. Baseline data was collected in March 2025.[7] With a Qualtrics questionnaire, we measured students' basic demographic characteristics, attitudes towards organ donation, altruism, risk aversion, propensity to give socially desirably answers (Reynolds; 1982), and their social network at school (similar to Alan and Kubilay; 2025). To measure students' social network, we provided a drop-down menu with the names of all students currently enrolled at the university and asked respondents to choose the names of those who they frequently talked with. Section B.1 in the Appendix contains the respective question items. We measured the immediate impact of the intervention with an endline survey in April 2025; all items are listed Section B.2. Finally, we measured its long-term impact with a follow-up survey in October 2025; see Section B.3 for a list of survey outcomes.

Given low response rates to the baseline survey in March 2025 and after securing top-up funding, we decided to collect additional data from the incoming cohort of first year students in fall 2025. We recruited 15 classes for the trial out of which 6 were randomized into treatment and 9 into control due to logistical constraints. As illustrated by Panel B of Figure 2, among the second cohort of students, baseline was taken in early October 2025. We organized a second "Organ Donation Awareness Week" from 27 October to 31 October. On Monday, Tuesday and Wednesday, the medical expert teams visited the treatment

[7]Delays in data clearance implied that we had to run the baseline survey during Ramadan, which contributed to a relatively low response rate. The response rate, however, did not significantly differ between the treatment arms: 52.8% in the control group and 49.6% in the treatment group, p-value 0.329.

classrooms, following the same intervention protocol as in the spring. Endline surveys were collected on the same days. The follow-up survey for the second cohort is scheduled for April 2026.

2.3 Intervention

The treatment consists in an expert-led face-to-face intervention.[8] CNPTO representatives visited the treatment classes during regular teaching activities in teams of two. The intervention started with a short video testimonial from a patient from Nefza, a village in rural north-western Tunisia, who had survived life-threatening illness thanks to a heart transplant administered by the CNPTO.[9] We expected this component to reinforce the intervention: personal narratives have been found to be highly efficient in changing attitudes (Oschatz and Marker; 2020). The video also illustrated that organ transplantation in Tunisia is managed by national institutions for the benefit of all citizens, helping to counter the widespread belief that organs can be bought if needed. Using a short powerpoint presentation, the medical experts then explained the medical procedure of organ transplantation and its benefits for patients and society at large. Moreover, they provided details on the legal framework around organ donation in Tunisia and explained students how they can add the donor status to their ID. The presentation included a few slides describing the Islamic perspective on organ donation. The session ended with a 10 minutes Q&A session. After the Q&A, the intervention team left the classroom and the students filled in the endline survey on their mobile device or personal computer. Section C in the Appendix includes detailed instructions for the intervention team. In the control group, the questionnaire was distributed by the lecturer on the same days as in the treated classes.

A short text at the end of the survey informed students that the CNPTO and the technical police would be on campus to offer on-the-spot ID changes on Thursday and Friday. The timing of the study implies that students who considered adding their donor status to their

[8]There is a growing literature on the effectiveness of expert- and layperson-led informational interventions with mixed results. Abu-Akel et al. (2021) show that the health messages pronounced by medical professionals during the COVID-19 pandemic are significantly more likely to be shared by the respondents than the messages pronounced by government officials or celebrities. Alsan and Eichmeyer (2024) provide evidence that expert-led health interventions are the most effective among the *less* hesitant segments of the population. The quantitative evidence collected in a nationwide phone survey run by one of the authors (Hauser; 2025) confirms that the young and educated segments of the Tunisian population are relatively more willing to become organ donors. Based on the previous literature, the choice of an expert-led intervention therefore appeared appropriate.

[9]This is the link to the video: `https://youtu.be/U6vYtpmkNeo`

ID had some time to think about their decision.[10]

We followed the same protocol when we repeated the study with the second cohort of students in October 2025. All students - including those who had participated in the study in the spring - were eligible to use the on-the-spot ID changes. The students who completed the survey received a lunch voucher for the university cafeteria but there were no monetary or in-kind incentives for changing one's ID. Appendix D includes some pictures from the intervention.

2.4 Theory of Change and Target Population

The intervention consists of two main components: i. information about organ donation and ii. real-life exposure to medical professionals. We are unable to disentangle the effects of these two components. We expected the treatment to increase students' knowledge about organ donation as well as their trust in medical institutions. It may also revise their attitudes, social norms and religious beliefs regarding organ donation. Better knowledge, higher trust, more progressive attitudes, social norms and religious beliefs may eventually translate to policy relevant behavioral change: more individuals signing up as deceased organ donors.

Our target population is interesting and relevant: the opinions and attitudes of young people are generally more malleable than those of older individuals (Abrams; 2022). Even though organs can be harvested from donors of all age groups, the transplants from young donors tend to be of better quality than those from older donors (Dayoub et al.; 2018). Moreover, three out of the six Tunisian hospitals which are authorized to harvest and transplant organs are located in the capital (Zannad; 2024). Targeting a young urban population is therefore an efficient choice even from a social welfare perspective.

2.5 Outcomes

Main Outcome: We treat ID changes as our primary outcome because it is a behavioral outcome and unlikely to be driven by experimenter demand effects.[11] During the "Organ

[10]For ethical reasons, we had to allow the students enough time to think about their donor status. However, we risked spillover effects from the treatment group to the control group as students from both treatment arms may interact. We therefore kept only a few days between the intervention and ID changes and use an empirical strategy similar to Miguel and Kremer (2004) and Baird et al. (2016) to account for spillovers in our treatment effect analyses.

[11]The donor status on an ID represents a strong commitment to being a donor. It is possible to change one's mind by going to a local police station and applying for a new ID, without the word "donor". However,

Donation Awareness Weeks" in April and October 2025, students had the possibility to add their donor status to their ID on campus. In accordance with the Tunisian Law n° 99-27 of March 1, 1999, this required signing the official donor declaration form. The police agents then copied all relevant information for the new ID and took finger prints. Our photographer took a biometric picture on site. The whole procedure took less than 10 minutes. One week later, we came back to the university to hand out the new IDs.[12] In compliance with our Ethics protocol and the General Data Protection Regulation of the European Union, we asked the students who had changed their ID if they were willing to share this decision with the research team. They were given a printed privacy form and consent form. We only collected signed consent forms and digitized the names of the signatories after the intervention. We then matched this data with the baseline and endline surveys to measure how many students from the treatment and control group respectively changed their ID to declare their donor status. The outcome is coded as 1 for students who changed their ID and 0 otherwise.

Secondary outcomes: We measured five secondary outcomes with a Qualtrics survey tool: attitudes towards organ donation and social norms, legal knowledge, medical knowledge, religious beliefs related to organ donation,[13] and trust in medical institutions. One of the social norms questions was incentivized: students were asked to guess the number of students who would register as organ donors during the awareness week. The student who guessed right was awarded a TND 50 lunch voucher. The items are aggregated to standardized indices for the main analysis, but we also present disaggregated results. We apply the generalized least-squares (GLS) weighting procedure proposed by Anderson (2008) to construct these indices, putting less weight on highly correlated items and items with a high share of missing values. These outcomes, especially the attitudes, social norms and trust measures, may be subject to experimenter demand effects and social desirability bias. To test whether social desirability drives our findings, we collect data on students' propensity to give socially desirable answers at baseline. Moreover, one of the norms questions is incentivized to ease concerns about experimenter demand effects. Despite the shortcomings of self-reported data, these outcomes allow us to shed light on potential mechanisms and to better understand how the treatment works. For a full list of items, see Section B.2.

the process is costly in terms of time and effort.

[12]It is theoretically possible that students changed their ID in a local police station close to their home instead of making use of the ID changes we proposed on campus. However, the logistical costs associated with doing so are considerable, which is why we believe that this is unlikely to represent a threat to our measurement strategy.

[13]This outcome was added after the pre-registration and conditional acceptance at the *Journal of Development Economics*.

In the six-month follow-up survey, we repeated most survey items to investigate whether treatment effects persist over time. Moreover, we asked students whether they had discussed organ donation with their family members and friends. The questions which were added to the follow-up survey are listed in Section B.3.

3 Empirical Analysis

We recruited a total of 1,276 students for the sample, 882 in the first round and 394 in the second round of the trial. Table 1 shows baseline balance of the complete sample. Half of the students are female, a large share were born in Tunis. They are on average 20 years old. The only statistically significant imbalance is trust in the organ donation center, which is slightly lower in the treatment group (p-value 0.071). We therefore control for baseline trust in the organ donation center in all main regressions. Table A1 restricts the sample to students for who answered both the baseline and endline survey. There are no major imbalances. Given that the data was collected in two rounds, we further present baseline balance for the first cohort in Table A2 and the second cohort of students in Table A3 separately. The only statistically significant imbalance is the share of students born in Tunis among the second cohort (Table A3, p-value 0.079).

3.1 Empirical Specification

To test the null hypothesis that the intervention had no impact on the outcome y_{ic} of student i in classroom c, we estimate a linear model using OLS:

$$y_{ic} = \alpha_0 + \alpha_1 T_c + X_{ic}^{'}\gamma + \delta_d + \varepsilon_{ic} \tag{1}$$

where T_c is a binary variable which equals 1 if classroom c was allocated to treatment and 0 otherwise. X_{ic}' is a vector of control variables for student i in classroom c that are potentially predictive of the outcome y_{ic}. We impute missing baseline covariates using the stratum specific means or medians of the covariates. For network measures, we impute the stratum and treatment group specific mean or median. We control for the round of data collection (spring or fall cohort), baseline trust in the organ donation center, and the total number of social ties in all our main regressions. We also include strata fixed effects δ_d, as the

Table 1: Baseline Balance

	N	Control	Treatment	Diff: C-T	p-value
A. Demographics:					
Female	792	0.511	0.496	0.015	0.717
Born in Tunis	791	0.400	0.447	-0.047	0.160
Age in years	791	19.851	20.146	-0.295	0.341
Mother university education	788	0.809	0.788	0.021	0.489
Father university education	788	0.814	0.795	0.019	0.541
Mother works in medical sector	789	0.127	0.152	-0.025	0.342
Father works in medical sector	788	0.120	0.098	0.022	0.371
Practices religion	568	0.601	0.589	0.012	0.826
High social desirability	766	0.526	0.479	0.047	0.187
High altruism	755	0.635	0.621	0.014	0.690
B. Institutional Trust:					
Medical sector	778	1.406	1.363	0.043	0.479
CNPTO	778	1.315	1.217	0.098	0.071
C. Organ Donation Attitudes:					
Comfortable discussing with family	626	0.728	0.741	-0.013	0.735
Feels sufficiently informed	549	0.603	0.599	0.004	0.939
Wants to add status	543	0.602	0.596	0.006	0.887
Worries about family disapproving	506	0.618	0.573	0.045	0.320

Notes: This table presents the baseline characteristics of the sampled students. "High social desirability" is a binary variable that equals 1 whenever a student displays above median propensity to give socially desirable answers in a subsample of questions taken from Reynolds (1982), and 0 otherwise. "Practices religion" equals 1 whenever a student stated that they practice their religion every day, 0 otherwise. "High altruism" is a binary variable equal to 1 whenever a student scores above the median in a subsample of questions from the Rushton et al. (1981) altruism scale, and 0 otherwise. The items on institutional trust are scored on a scale from 0 to 3 where 3 is high trust. The items on attitudes towards organ donation are the following: "I have sufficient knowledge about organ donation to make an informed decision about whether I want to become a donor myself."; "I feel comfortable discussing organ donation with my family."; "I would like to be an organ donor myself."; "I worry my family may disapprove of organ donation." They are scored as 1 when a student somewhat or strongly agrees and 0 otherwise.

treatment was assigned stratifying by department and year of study.[14] Standard errors are clustered at the classroom level, which is the level of treatment assignment. As a robustness check, we present all main results without imputation and without covariate adjustment in Panel A and B of Figure A1 in the Online Appendix.

[14]In our pre-analysis plan, we stated that we would use post-double regression lasso to choose our covariates. However, we later realized that this method is unreliable in smaller sample sizes, such as those which we use for our heterogeneity analysis and the analysis of the follow-up survey. We therefore opted for using a parsimonious set of baseline covariates throughout the analysis.

Table 2: Social Networks

	N	Control	Treatment	Diff: C-T	p-value
Isolated student	1264	0.273	0.282	-0.009	0.817
Total social ties	1264	2.063	1.978	0.085	0.724
Share of reciprocal ties	769	0.404	0.362	0.042	0.310
Share of reciprocal ties with treatment group	769	0.099	0.504	-0.405	0.000
Number social ties from control group	1264	1.536	0.437	1.099	0.000
Number social ties from treatment group	1264	0.528	1.542	-1.014	0.000
No social ties from control group	1263	0.363	0.730	-0.367	0.000
No social ties from treatment group	1263	0.680	0.360	0.320	0.000
Share of social ties from treatment group	1264	0.184	0.558	-0.374	0.000

Notes: The baseline survey asked students to list the peers with whom they frequently discuss important things. The social ties shown in this table are computed using the in-degree definition, that is, they represent the nominations *received* by a given student. For instance, a student is isolated in the in-degree sense if they were not nominated by anyone. A social tie is reciprocal when student A is nominated by student B and vice versa. The number of observations for the share of reciprocal ties is smaller as it can be only computed for students who answered baseline. For students without social ties, the share of (reciprocal) social ties to the treatment group is set to 0.

3.2 Spillover Analysis

Compliance to treatment assignment was imperfect given that not all students attended class on the days when we conducted the intervention, and we therefore interpret the estimated treatment effect $\hat{\alpha}_1$ as intention-to-treat effect. Moreover, the stable unit treatment value assumption (SUTVA) is unlikely to hold in our setting (Imbens and Rubin; 2015). As in similar informational interventions (for example Banerjee et al., 2024a), we expect spillovers to non-targeted individuals: students in the treatment group may share the information received during the intervention with friends in the control group. These spillover effects will bias $\hat{\alpha}_1$ towards 0 and we will therefore interpret it as a lower bound of the true treatment effect α_1 as in Baird et al. (2016).

We use the network data collected during the baseline survey to quantify potential spillover effects of the treatment. In the baseline survey, we asked students to nominate the peers with whom they regularly discuss important issues. This allows us to compute the number of social ties to the treatment group for each student.[15] We assume that, as social

[15]Given the relatively low response rate to the baseline survey, we focus on in-degree ties: as is standard in the literature, we define in-degree ties as the nominations a student i receives from their peers. Out-degree ties, that is the number of nominations student i makes, are a potential alternative measure. However, given the high share of students who did not answer the baseline survey, the number of out-degree ties is likely

connectivity to the treatment group increases, a control student is more likely to learn about the intervention from peers in the treatment group, thus being "contaminated" by spillover effects.

We expect the spillover effects to be positive and to increase organ donor registration in the control group. Spillover effects on attitudes, knowledge, beliefs and institutional trust are less problematic for our evaluation, as these survey outcomes were measured directly after the intervention. If spillover effects on donor registration were large enough, the intervention may turn out to be more cost-effective than expected because the treatment benefits more people than solely the individuals who are targeted. A potential issue with directly comparing control students with and without ties to the treatment group is that they could differ from each other in their baseline characteristics. i.e. isolated students who do not have any social ties will automatically be allocated to "pure control". If socially connected and isolated students inherently differ in their preferences regarding organ donation, the direct comparison between "pure control" and treatment group would yield biased treatment effect estimates. To circumvent this issue, we use the network data to estimate the following regression inspired by Miguel and Kremer (2004) and Baird et al. (2016), which assumes that spillovers increase linearly in the share of treated friends:

$$y_{ic} = \alpha_0 + \alpha_1 T_c + \alpha_2 N^T T_c + \alpha_3 N^T + \alpha_4 N_{ic} + X_{ic}^{'}\gamma + \delta_s + \varepsilon_{ic} \tag{2}$$

where N^T is the number of friends in the treatment group, which, conditional on the total number of friends N, is exogenous. $\hat{\alpha}_3$ measures spillover effects to the control group: the impact of having more social connections to the treatment group. We thus explicitly allow for peer effects to differ by treatment arm while controling for the total number of social ties.[16]

The baseline questionnaire asked students to list the peers with whom they regularly discuss important things. Table 2 reports social network measures from our baseline data

to be strongly downwards-biased; for example, in our data, many students are isolated in the out-degree sense because they did not answer the survey, not because they do not have friends. We therefore prefer the in-degree measure. In Table A4 we also present spillover effects estimates using the number of reciprocal ties, which are social ties that fulfill both the in- and out-degree definition. Results are similar. The number of nominations a student can make was not restricted in the survey.

[16]Out of the 1,374 students enrolled at SMU in the spring term of the academic year 2024/2025, we recruited 882 students for the trial (69.2% of all students enrolled). N is thus the sum of social ties who were allocated to the treatment group (N^T), or to the control group and social ties or who were not enrolled in the study (out-of-sample).

collection, focusing on in-degree ties. For example, 27.3% of the students in the control group are isolated, that is, they are not nominated by anyone. This is the case for 28.2% of the students in the treatment group. The share of isolated students is balanced across treatment arms, as is the total number of social ties and the share of reciprocal ties.[17] This suggests that the general structure of the social network is similar across treatment and control classrooms. Table A5 and Table A6 show the same statistics by round of data collection. There is a small imbalance in the total number of social ties among the two treatment arms of the fall cohort of students, which we control for in all of our main regressions.

As illustrated by Figure A2, the control group students have on average significantly more social connections among themselves than with the treatment group. Table 2 shows that, among the students who were randomly allocated to the control group, 9.9% have reciprocal ties with the treatment group. Among treatment students, this share reaches 50.4%. The share of students who do not receive any nominations from the control group is 36.3% in the control group and 73.0% in the treatment group. The share of students who do not receive nominations from the treatment group is 68% in the control group and 36% in the treatment group. Finally, social ties from the treatment group represent 18.4% of total nominations for the control group and 55.8% for the treatment group. All these differences are statistically significant at the 1% level and large enough to be economically significant. We conclude that there is substantial variation in the degree of connectivity of students to the other treatment arm, which is the prerequisite for estimating the spillover effects models in Equation (2).

Given that not all students answered the baseline survey (the overall response rate is 57.5% in the control group and 55.8% in the treatment group, p-value = 0.513), we construct an additional proxy of student interactions based on administrative data about the students' schedules.[18] Exploiting the variation in class composition, we are able compute the share of treated classmates for each student, even for those for whom we lack baseline data. Assuming that the likelihood of spillover effects increases with the share of treated classmates a student has, we re-estimate Equation (2) using the number of treated classmates as a regressor.

The six-month follow-up survey was meant to provide additional evidence regarding the

[17] We define reciprocity as in Garlaschelli and Loffredo (2004): the share of reciprocal ties r is the number of bidirectional ties $L^{\leftrightarrow}$ over the total number of ties L: $r \equiv \frac{L^{\leftrightarrow}}{L}$. Intuitively, when all social ties are reciprocal, we would find r=1. By contrast, r=0 when no social ties are reciprocal.

[18] In the engineering school, cohorts of a given program typically take the same classes, but a significant share of students follow individualized study plans, e.g. because they failed a course in a previous year. In the business school, there is substantial variation among the students following a given course. As a result, the class composition varies and a student may have different classmates across their classes.

persistence of treatment effects on attitudes and spillover effects. Any treatment effects observed in the long run are unlikely to be driven by experimenter demand effects (Stantcheva; 2023), and we added additional questions to the survey, inquiring whether the students had discussed organ donation with their friends and family. Among the first cohort of students, the response rate to the follow-up survey was very low, which is why we interpret these results with caution. Table A7 shows that 86.1% of invited students did not respond to the follow-up survey. Among the students who had responded to baseline and endline, this share still reaches 74.8%.[19] Reassuringly, the response rate does not significantly differ between the two treatment arms (p-value 0.949). Moreover, Table A7 shows that most observable baseline covariates, with the notable exception of gender in the whole sample, do not strongly predict attrition. Finally, Table A8 shows that the observable baseline characteristics of the students who answered the follow-up survey, with the exception of mother's occupation (p-value 0.015), are balanced across treatment arms. Keeping these caveats in mind, we estimate inverse probability weights and add additional control variables (trust in the organ donation center and fear of family disapproval at baseline, respondent gender, being born in Tunis, maternal occupation) to all follow-up regressions.

4 Results

We begin by presenting evidence on the intervention's effectiveness in increasing donor registration in Subsection 4.1. We then examine the potential mechanisms underlying these effects in Subsection 4.2, followed by an analysis of treatment effect heterogeneity in Subsection 4.3.

4.1 Treatment Effects on Donor Status

A total of 43 individuals decided to add the donor status to their ID during the two "Organ Donation Awareness Weeks" at SMU and all of them gave consent to share their data with us: 21 of them were students from the treatment group and 8 students from the control group.

[19]The low response rate is likely to be related to several factors: the baseline and the endline surveys were administered in the classroom, ensuring relatively high compliance. Six months later, the students were not necessarily taken courses with the same classmates and the follow-up survey was therefore sent to the students by the university's research center. Some students had moved on to graduate studies, others had already graduated. Anecdotal evidence suggests that interest was low given that some students thought that they had already answered the same survey.

Table 3: Behavioral Outcome - ID Changes

	(1) Main	(2) Spillovers
Treatment	0.023**	0.023**
	(0.009)	(0.010)
Treatment x N^T		-0.016
		(0.013)
N^T		0.016*
		(0.009)
Control Mean	0.013	0.013
Observations	1276	1276

Notes: The table shows the estimated treatment effects on the main outcome, ID changes to add the donor status. All results are estimated using ordinary least squares (OLS) regressions. Column (1) shows the main specification as described in Equation (1). Column (2) shows results from the spillover effects regression using the number of treated students in a given student's social network (N^T) and its interaction with treatment as regressors as specified in Equation (2). All regressions control for baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Moreover, 7 out-of-sample students, and 7 professors and staff members came to change their ID after hearing about the intervention. Table 3 presents the estimated treatment effects on the students who were enrolled in the trial. Column (1) shows the result from estimating Equation (1): the treatment increases the probability that a student adds the donor status by 2.3 percentage points, significant at the 5% level. Relative to the control group mean of 1.3% this is a large effect, a 177% increase. Given that the baseline is so low, this number should be interpreted with caution, though.

Column (2) of Table 3 provides evidence in favor of our initial hypothesis of positive spillover effects to the control group. When estimating Equation (2), we find that $\hat{\alpha}_3$ is positive and marginally statistically significant at the 10% level. Hence, if we were to increase the number of treated students among a control student's social network from 0 to 1, all else equal, we would expect them to become 1.6 percentage points more likely to register as a deceased organ donor. Table A9 shows the same estimates by study round, confirming that the estimated treatment effects are positive in the two repetitions of the trial, though only

statistically significant in the larger sample. The spillover coefficients are positive in both samples, but they do not reach statistical significance in the separated samples.

As a robustness check, we estimate the same equation restricting to social ties which are reciprocal. Reciprocal ties imply that two students nominated each other, which is arguably a stronger measure of connection than a mono-directional tie. Yet, by restricting to reciprocal ties, we effectively reduce the number of observations across which we estimate spillover effects, as only a fraction of all social ties are reciprocal. Not surprisingly, the estimated spillover effects lose their statistical significance, as shown by Column "Reciprocal Ties" in Table A4. Reassuringly, the estimated coefficient remains positive and even increases in absolute size, which supports the hypothesis that reciprocal ties represent a more accurate measure of the social network. Finally, we estimate the same model using the number of treated classmates and interactions with treatment as regressors. The estimated coefficients, reported in the last column of Table A4 are close to zero and imprecisely estimated, which is consistent with classmates being a weaker proxy of actual social ties. Thus, while we positive spillover effects to the control group, which are large relative to the overall treatment effect, they are not very precisely estimated and do not survive all robustness checks.

When collecting consent forms, we asked the individuals who had just registered as organ donors whether they had discussed this decision with their friends at the university. Indeed, 75% of donors from the control group and 90% of donors from the treatment group declared that they had done so. The six-month follow-up survey also asked students whether they had discussed organ donation with their friends. Table A10 shows that in the control group, almost 60% of students declared they had talked about organ donation with their friends. Among the treatment group, this share increased by 23.9 percentage points. While we acknowledge that these findings have to be taken with a grain of salt due to the low response rate at follow-up, they suggest that the intervention induced students to talk about organ donation. In conclusion, the network data and the additional survey evidence suggest that the intervention fueled a discussion about organ donation among the treated students which seems to have spilled over to those students who did not participate in the intervention.

The estimated treatment effects imply that the proposed intervention is cost-effective. With our proposed face-to-face intervention in small groups, a team of two medical professionals could visit 6 classrooms with 30 students per day, hence create awareness among N=3,600 students per month and N=28,800 in one academic year (8 months). The main cost incurred by scaling up this intervention consists in the salaries for the medical experts, who

lead the awareness workshop, and the police officer who changes IDs. Assuming a monthly wage of 2,000 TND (USD 663) for the medical experts and the police officer, this generates a total cost of TND 48,000 (USD 15,914).[20] Based on the estimated treatment effects, we expect that 2.3% of the treated students sign up to become donors. The intervention would thus yield 662 new registered deceased donors after one academic year. We base our cost-effectiveness calculations on three further assumptions: first, according to recent data from the United Nations (2024), the probability of survival until age 85 is about 74% in Tunisia. Second, out of 1,000 total deaths, on average, only 3 qualify for deceased organ donation (Bambha et al.; 2020). Third, one donor can save the lives of up to 8 patients (HDSA, 2024), yet, the most recent numbers reported by the Tunisian authorities show that one donor on average provided organs for 3 beneficiaries (Aissi; 2022). Taking stock, if scaled up during one academic year, the intervention could facilitate 2-4 additional transplantations over a 65-year horizon at a cost of USD 15,912.[21]

These numbers imply moderate cost-effectiveness compared to other health interventions. In a review assessing evidence from several LMICs, Perry et al. (2015) find that "care group projects" - volunteers who visit families in their neighborhood to transmit important health messages - cost between USD 441 and USD 3,773 per life saved. Other health interventions are considerably less expensive: a micro-simulation study using South African data finds that a combination of Covid-19 tracing, mass testing and isolation and quarantaine centers can reduce deaths from the virus, at USD 340 per year of life saved (Reddy et al.; 2021). Most importantly, alternative treatments for organ failure such as kidney dialysis, are very expensive. Mushi et al. (2015) and Chabouh et al. (2022) estimate that the *annual* costs of hemodialysis in Tunisia amount to approximately USD 10,000 - USD 12,000 *per patient*. This figure would be even higher if indirect costs such as the patient's productivity loss were taken into account.[22] Scaling the intervention among the student population of Tunis for one academic year could therefore generate 2–4 additional transplants at a total cost lower

[20] The currency conversion is based on the exchange rate of 10 May 2025.

[21] The lower bound assumes only 3 harvested organs per donor, the higher bound assumes 8 harvested organs per donor. We make the following back-of-the-envelope calculation for the lower bound of 3 organ transplants per deceased organ donor: Number of new donors x mortality rate x rate of brain death x number of transplants $= 662 * (1 - (\frac{74}{100})) * (\frac{3}{1000}) * 3 \approx 1.5$. For the higher bound of 8 organ transplants per deceased organ donor: $662 * (1 - (\frac{74}{100})) * (\frac{3}{1000}) * 8 \approx 4.1$.

[22] Hemodialysis is the most common form of kidney dialysis. Typically administered in an outpatient facility, it consists in filtering the patient's blood to remove waste products. Hemodialysis usually requires 3 sessions per week, which can last between 3 and 5 hours. In 2022, about 12,000 Tunisian patients were on hemodialysis. There is no nationally representative data on the average length of treatment in Tunisia, but 55% of the patients sampled by Mrabet et al. (2025) had undergone hemodialysis for more than 5 years. Some patients survive on dialysis for over 10 years.

than 17 months of dialysis for a single patient.

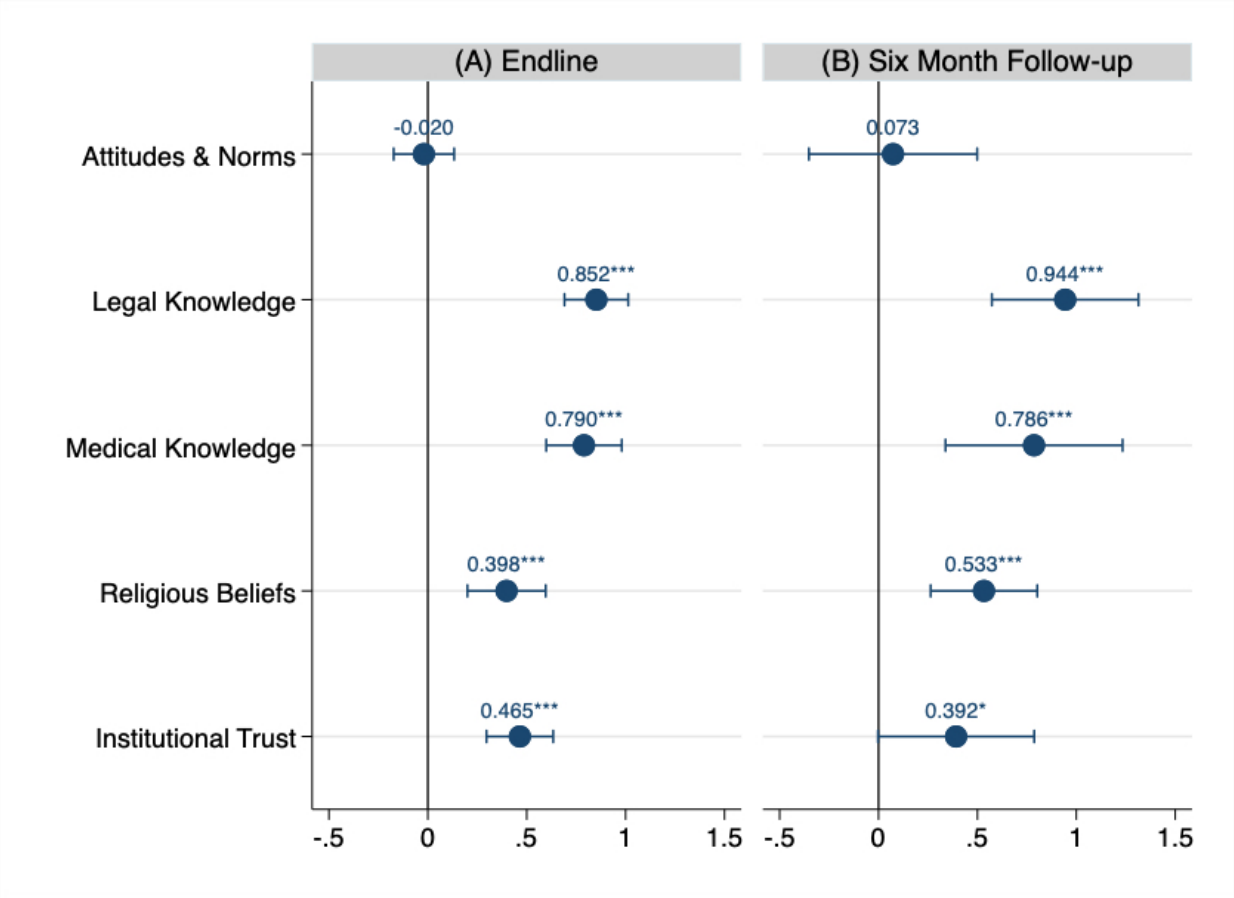
These cost-effectiveness estimates are likely to represent a lower bound. First, they do not account for spillover effects to untreated individuals, which may substantially increase the reach of the intervention. Second, there is reason to believe that even accounting for spillover effects, we would still be underestimating the effectiveness of the intervention. For ethical reasons, we needed to inform all students, faculty and staff members on campus about the "Organ Donation Awareness Weeks". The control group was thus receiving a light-touch treatment, and the surveys alone, which were administered to both treatment arms, are likely to have increased awareness of organ donation in the control group. Importantly, for measurement purposes, we needed to offer ID changes on campus, significantly lowering the logistical costs of registering as an organ donor for all students. The average share of registered organ donors in the control group is 1.3% after the trial - well above the national share of 0.16% - suggesting that simply offering the possibility of convenient on-the-spot ID changes may already have increased individuals' propensity to register. In the absence of the light-touch information and on-the-spot ID changes, the control group mean would likely have been lower and the intention-to-treat effect higher. Third, there is no long-term alternative treatment for failure of organs other than kidneys, making the benchmark of alternative treatments uninformative. Thus, while the proposed intervention's cost per life saved is at the higher end in comparison to other health interventions in LMICs, the proposed intervention appears to be highly cost-effective compared to alternative treatments.

4.2 Potential Mechanisms

Which mechanisms drive the observed treatment effect on donor registration? The collected survey data provides little evidence for large shifts in attitudes and norms: Figure 3 shows that the estimated treatment effect on the aggregated index of attitudes and norms is statistically indistinguishable from zero. This result hides some heterogeneity: Panel A of Table 4 indicates that treated students are 10.1 percentage points more likely to report feeling comfortable discussing organ donation with their families. Perhaps counterintuitively, treated students report *more* fear of discussing organ donation with their family: an 7.9 percentage point increase over a mean of 58.6%. A possible explanation is that the intervention made the possibility of family disapproval more salient. The estimated treatment effects on the remaining items of the attitudes and social norms index, even the incentivized social norms question, are imprecisely estimated and all include 0 in the 95% confidence interval. It thus

appears unlikely that changes in attitudes regarding organ donation or social norms drive the observed treatment effect on donor registration.

Figure 3: Mechanisms



Notes: The figure plots the estimated treatment effects on the secondary outcomes, aggregated to indices. The indices are standardized to have mean 0 and standard deviation 1 in the control group. All results are estimated using ordinary least squares (OLS) regressions. Positive values indicate more progressive attitudes, norms and religious beliefs, increases in knowledge and institutional trust. See Section B.2 for a full list of items by index. All regressions in Panel (A) control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. The set of controls for the regressions in Panel (B) includes the baseline outcome, if available, baseline trust in the organ donation center, baseline fear of family disapproval, respondent gender, being born in Tunis, respondent's mother being employed in the medical sector, as well as strata fixed effects. The regressions in Panel (B) are weighted using inverse probability weights. Standard errors are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Table 4: Disaggregated Mechanisms I

Panel A: Attitudes towards Organ Donation

	Feels at Ease with Donation	Comfortable Discussing with Family	Afraid of Family Disapproval
Treatment	0.025	0.101***	0.079**
	(0.043)	(0.028)	(0.037)
Control Mean	0.596	0.663	0.586
Observations	637	659	645

Panel B: Social Norms

	National	University
Treatment	-1.895	-19.834
	(1.699)	(13.026)
Control Mean	38.6	84.4
Observations	592	533

Panel C: Legal Knowledge

	Organ Sale Illegal in Tunisia	Organ Donation not Costly	Knows how to Become Donor
Treatment	0.142***	0.304***	0.427***
	(0.032)	(0.049)	(0.052)
Control Mean	0.673	0.239	0.211
Observations	599	540	656

Notes: This table reports the estimated treatment effects on the secondary outcomes item-by-item. All results are estimated using ordinary least squares (OLS) regressions. The outcomes are survey items from the endline survey, with the exception of "Afraid of Family Disapproval" all are coded such that positive values imply more progressive attitudes, norms and higher knowledge. Attitudes were measured on a 4-point Likert scale. "Somewhat agree" and "completely agree" are coded as 1, "somewhat disagree" and "completely disagree" as 0 to make the outcomes binary. Social norms were measured at the national level (on a 0-100% scale, how many Tunisians approve of organ donation?) and at the university level (insert the number of students who will change their ID). The legal knowledge items equal 1 when a respondent gave the correct answer and 0 otherwise. See Section B.2 for a full list of items by index. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Table 5: Disaggregated Mechanisms II

Panel A: Medical Knowledge

	Organs	Potential Donors	Brain Death
Treatment	1.331***	0.509***	0.204***
	(0.198)	(0.073)	(0.039)
Control Mean	1.869	0.614	0.453
Observations	669	669	570

Panel B: Religious Beliefs around Organ Donation

	Islam Encourages Organ Donation	Traditional Funeral Possible	No Religious Concerns
Treatment	0.188***	0.160***	0.061
	(0.052)	(0.041)	(0.046)
Control Mean	0.215	0.511	0.446
Observations	551	542	645

Panel C: Institutional Trust

	Trust CNPTO	Organ Donation Equitable	Organ Trafficking Uncommon
Treatment	0.296***	0.364***	0.078*
	(0.064)	(0.038)	(0.039)
Control Mean	1.470	0.348	0.413
Observations	560	592	593

Notes: This table reports the estimated treatment effects on the secondary outcomes item-by-item. All results are estimated using ordinary least squares (OLS) regressions. The outcomes are survey items from the endline survey, all coded such that positive values imply more knowledge, more progressive religious beliefs and higher institutional trust. "Organs" and "Potential Donors" are indices of knowledge scores; a respondent was awarded one point for each correct answer and lost a point for each wrong answer. The "Organs" index theoretically takes on a range from [-5,7]; the "Potential Donors" index takes on a range of [-1,2]. "Brain Death" equals 1 when a respondent knew that brain death is irreversible and 0 otherwise. "Islam Encourages Organ Donation" and "Traditional Funeral Possible" are coded as 1 when a respondent knew that Islam encourages organ donation / a traditional funeral is possible after organ donation, and 0 otherwise. "No Religious Concerns" equals 1 when a respondent somewhat or strongly agrees that they do not have religious concerns regarding organ donation and 0 otherwise. The trust item was coded on a 4-point Likert scale from 0 to 3, where 3 is high trust as in the World Values Survey (2022). "Organ Trafficking Uncommon" and "Organ Donation Equitable" equal 1 when a respondent believes that organ trafficking is not common / organ donation is equitable, and 0 otherwise. See Section B.2 for a full list of items by index. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

By contrast, Panel A of Figure 3 confirms that the intervention was highly effective in transmitting new knowledge and correcting wrong beliefs. The estimated treatment effects on knowledge are economically and statistically highly significant: the treatment led to a 0.852 standard deviation increase in legal knowledge and a 0.790 standard deviation increase in medical knowledge, both statistically significant at the 1% level. Table 4 disaggregates the legal knowledge index by item: Panel C shows that 67.3% of the students in the control group knew that the sale of organs is illegal in Tunisia. The treatment increased this share by 14.2 percentage points. Similarly, less than 24% of the students in the control group knew that the State covers the expenses related to organ transplantation. The treatment more than doubled this percentage. The treatment impacts on medical knowledge are similarly large. Column (1) of Panel A in Table 5 shows that, when asked to select from a list the organs that can be transplanted in Tunisia, students in the treatment group on average correctly identified 1.331 more organs than those in the control group. Figure A3 shows a break-down by organ: the CNPTO currently has the technology and expertise to transplant kidneys, liver, hearts, corneas, lungs, the pancreas and bone tissue. Treated students were more likely to correctly identify all of these organs and tissues. Moreover, Column (3) of Panel A of Table 5 shows that only 45.3% of students in the control group knew that brain death is irreversible. The intervention increased this share by 20.4 percentage points. These large improvements in legal and medical knowledge are likely to have contributed to increasing donor registration among the treated.

The evidence on the intervention's ability to shape religious beliefs around organ donation is positive. The aggregate index increased by 0.398 standard deviations, significant at the 1% level. Panel B of Table 5 shows that only about one in five control group students knew that Islam encourages organ donation. The treatment increased this percentage by 18.8 percentage points, a 87% increase. In the control group, half of the students knew that a traditional funeral was possible after organ donation. The treatment led to a robust 16 percentage points increase. By contrast, Column (3) shows that concerns about potential conflicts between religion and organ donation are widespread - 44.6% of the control group report being worried - and the treatment had no statistically significant impact on this outcome.

Finally, the intervention had a large and highly statistically significant impact on institutional trust. Figure 3 shows that the treatment increased institutional trust by 0.465 standard deviations. Panel C of Table 5 shows three of the four sub-components of the index, which drive this finding: first, trust in our implementation partner, the CNPTO (measured

on a 4-point Likert scale from 0 to 3), increased by 0.296 points relative to a control group mean of 1.470 points, a 20% increase. The treatment effect on trust in the medical system in general (not included in the table) was 0.061 points over a control group mean of 1.424 points but not statistically significant (p-value 0.434). Second, the treatment group was significantly more likely to agree that organ donation in Tunisia benefits all categories of persons equally: only 34.8% of the students in the control group viewed organ donation as equitable. The treatment led to a 36.4 percentage points increase, an increase of over 100%. The intervention also decreased the perceived frequency of organ trafficking: in the control group, more than one in two students stated that organ trafficking was common or very common in Tunisia. The treatment increased the share of students who believed that organ trafficking was not common or not common at all by 7.8 percentage points.

Social desirability bias and experimenter demand effects are a major concern for the interpretation of the secondary outcomes: treated students may report more progressive attitudes, beliefs and higher institutional trust to please the intervention team. As a robustness check of these findings, we therefore collected information on students' propensity to give socially desirable answers at baseline. Panel A of Figure A4 divides the sample into students with below versus above the median propensity to give socially desirable answers. The estimated treatment effects on attitudes and norms, knowledge, religious beliefs and institutional trust for the two groups are not statistically different from each other, suggesting that our results regarding these outcomes are unlikely to be driven by social desirability bias. Importantly, social desirability bias does not threaten the main finding that the treatment increases organ donor registration: Figure A5 shows that the treatment effects on the behavioral outcome are virtually the same for individuals with low and high propensity to give socially desirable answers.

Most of our findings are robust to controlling for multiple hypotheses testing: Table A11 compares p-values from the original regressions with sharpened False Discover Rate q-values following Anderson (2008) and p-values which are computed using the procedure proposed by Romano and Wolf (2016). The FDR q-values resemble the original p-values. The treatment effect on religious beliefs stays significant at the 5% level after the Romano-Wolf correction. The treatment effects on legal and medical knowledge, and institutional trust keep their statistical significance at the 1% level, emerging as robust mechanisms behind the observed increase in donor registration among the treated students.

The results from the six-month follow-up survey provide additional evidence in favor of

this conclusion. The follow-up survey was distributed six months after the intervention and it is thus unlikely that the observed treatment effects are driven by experimenter demand effects or social desirability bias. Panel B of Figure 3 visualizes the estimated treatment effects at follow-up. Even though the confidence intervals widen, the emerging pattern is very similar to what we observed at endline: treated students show large and statistically significant knowledge gains and improvements in religious beliefs and institutional trust even six months after the intervention. Tables A12 and Table A13 disaggregate the indices by question item. The results resemble those at endline. This suggests that the intervention had not only large but also persistent impact on students' knowledge, religious beliefs and institutional trust.

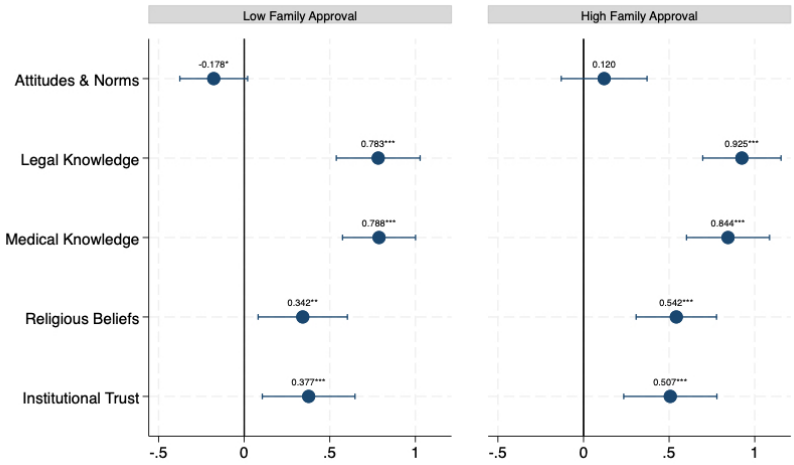
4.3 Treatment Effect Heterogeneity

We pre-registered conducting heterogeneity analyses by expected family consent, gender and religiosity. Following Anderson (2008), we construct a weighted index of expected family consent based on a student's expectations about their family's attitudes toward organ donation at baseline, parental profession (working in the medical sector or not), and parental education. The intuition is that we expect family approval of organ donation to be high when students' parents are highly educated, work in a medical profession or when the students themselves believe that their family supports organ donation. Figure 4 compares the estimated treatment effects for the group of students for whom we expect family approval to be low to the group of students for whom we expect family approval to be high. Panel A shows that the estimated treatment effects on the secondary outcomes are very similar between the two groups. Both groups show large and statistically significant increases in legal and medical knowledge as well as improvements in religious beliefs and institutional trust.[23] By contrast, Panel B of Figure 4 reveals a striking difference when it comes to the actual decision of changing one's ID to become an organ donor. The estimated treatment effect on the group of students for whom we expect low family approval is indistinguishable from zero. For students with high expected family approval, we observe a treatment effect of 4.1 percentage points, double the effect size of the intention-to-treat estimate on the whole

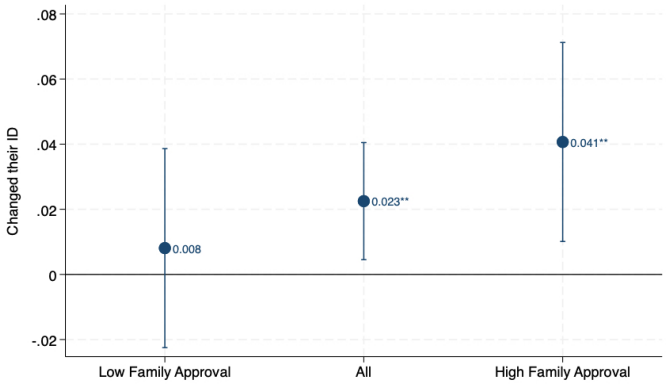
[23] One exception stands out: the estimated treatment effects on attitudes and social norms differ among the two groups (p-value 0.042). Among students expecting low family approval the treatment has a marginally statistically significant *negative* treatment impact on attitudes and social norms. This effect is driven by the item on family disapproval - students with low family approval are even more afraid of family disapproval after treatment - possibly a salience effect - and the incentivized social norms question: treated students who expect low family approval also expect fewer of their peers to become organ donors (p-value 0.087).

Figure 4: Heterogeneity by Expected Family Approval

(a) Mechanisms



(b) ID Changes



Notes: The figure plots the estimated treatment effects on the secondary outcomes aggregated to indices (Panel A) and on ID changes (Panel B) by expected family approval at baseline. All results are estimated using ordinary least squares (OLS) regressions. The indices are standardized to have mean 0 and standard deviation 1 in the control group. Positive values indicate more progressive attitudes, norms and religious beliefs, increases in knowledge and institutional trust. See Section B.2 for a full list of items by index. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

sample. Our conjecture is that family attitudes at baseline do not constrain how the treatment affects students' knowledge, religious beliefs and trust. All students appear similarly receptive to the new information. However, family attitudes seem to predict students' agency to act on their beliefs and become organ donors. Expected family approval thus emerges as

a constraint on young adults' behavior.[24]

The six-month follow-up survey asked students whether they had discussed organ donation with their family. Table A10 shows that in the control group, 47.4% of students declared they had talked about it with their families. Regression analysis provides no evidence of a treatment effect, consistent with the widespread fear of family disapproval students reported at endline (see Table 4). By contrast, 80% of the students who registered as organ donors told us that they had discussed organ donation with their families earlier, with no significant differences across treatment arms. While these findings should be interpreted with caution due to the small sample sizes and low response rate at follow-up, they suggest that the intervention may have failed to empower large numbers of students to discuss organ donation with their families. In contrast, the vast majority of the students who decided to become organ donors told us that their families were supportive of their decision.

Treatment effect heterogeneity by gender further supports this interpretation. A large body of literature suggests that women tend to make more pro-social choices than men (McDonald and Kanske; 2023). A priori, one may therefore expect larger treatment effects on donor registration among women. Instead, we find that 22 out of the 29 students who registered as organ donors (75.9%) were male. When we disaggregate treatment effects by gender in Panel B of Figure A4, the estimated treatment effects on attitudes and norms, medical knowledge and religious beliefs are statistically indistinguishable from each other among the two subsamples. The treatment effects on legal knowledge and institutional trust are significantly higher among the male respondents (p-values 0.016 and 0.065). Figure A5 reveals that the estimated treatment effects on donor registration are driven by young men. Male students are 3.6 percentage points more likely to become organ donors when allocated to the treatment group. The estimated treatment effect on female students is close to zero and not statistically significant. Considering that young Tunisian men tend to have more autonomy than young women, this is consistent with our previous finding that family attitudes may constrain young adults' choices, and constitutes our preferred interpretation. Yet, we cannot exclude that our failure to detect a significant treatment effect on female donor registration is related to the relatively smaller treatment effects on legal knowledge and institutional trust, which we observe among this subsample.

[24]This is consistent with qualitative observations we made during the data collection. Several students told our intervention team that they would have liked to change their ID but that their parents had told them not to do so. Other students asked us for the intervention material to share it with their parents, i.e. to tell them about the Tunisian fatwa encouraging organ donation.

Conducting heterogeneity analysis by religiosity is problematic. A majority of students declared practicing their religion every day, hence, the sample of less religious students is small and the treatment effects on this subgroup are very imprecisely estimated, rendering further interpretation difficult (see Figure A5).

5 Conclusions

Organ transplantation is a promising technology for many LMICs which increasingly face the burden of an aging population who is more likely to suffer from organ failure (Streit et al.; 2023). While is is relatively straightforward to install medical equipment and train medical professionals, fostering public support for organ donation remains challenging, especially in contexts with low institutional trust. Within an RCT conducted at a Tunisian university, we evaluate the impact of an expert-led informational intervention on young adults' decision to register as deceased organ donors. We find that the intervention increases donor registration by 2.3 percentage points among the treated. It is highly efficient in transmitting knowledge about organ donation and fostering trust in medical institutions, eventually leading to an increase in donor registration. The evidence also suggests that the intervention successfully created awareness about Islam's endorsement of organ donation, shaping religious beliefs, which are conducive to organ donation. The proposed intervention is cost-effective. If scaled up over the course of one academic year, it could facilitate 2-4 additional organ transplantations over the course of 65 years for a cost of less than USD 16,000. Considering that hemodialysis generates costs of USD 10,000 - USD 11,000 per patient per year and that there are no alternative long-term treatments for the failure of other organs, raising awareness of organ donation seems highly cost-effective.

The baseline data collected for this intervention allows us to draw important conclusions regarding peer effects and the role of family elders, which can help to guide future policies. Spillovers to the control group are positive and large - albeit imprecisely estimated - suggesting that peer-to-peer learning could significantly increase the impact of the awareness intervention. Family dynamics seem to play a critical role: donor registration is significantly higher among students whose families are supportive of organ donation. Since organ donation seems to be viewed as a collective rather than as an individual decision in this context, the intervention's impact could be enhanced by involving both peer networks and older family members.

A limitation of this study is external validity. While Tunisia's deceased organ donor rates are similar to those of many LMICs in the MENA region and beyond, the study was conducted in a university setting among students who are not representative of the general population. Yet, this group remains relevant and interesting, as young adults are more susceptible to new information and may spread it among their social network. Finally, targeting this age group is efficient from a medical perspective since the organs donated by young donors are, on average, of better quality than those of older donors. We therefore believe that the findings of our study can inform health policy in Tunisia and similar contexts. Future research should focus on a larger target group and explore intra-family decision-making dynamics in greater depth.

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A Additional Tables and Figures

Table A1: Baseline Balance, Students Present at Baseline and Endline

	N	Control	Treatment	Diff: C-T	p-value
A. Demographics:					
Female	452	0.536	0.473	0.063	0.244
Born in Tunis	450	0.422	0.418	0.004	0.941
Age in years	451	19.825	20.294	-0.469	0.172
Mother university education	452	0.850	0.816	0.034	0.299
Father university education	451	0.845	0.788	0.057	0.304
Mother works in medical sector	452	0.106	0.127	-0.021	0.496
Father works in medical sector	452	0.116	0.073	0.043	0.153
Practices religion	349	0.564	0.575	-0.011	0.868
High social desirability	447	0.519	0.515	0.004	0.926
High altruism	445	0.675	0.632	0.043	0.334
B. Institutional Trust:					
Medical sector	448	1.350	1.417	-0.067	0.449
CNPTO	448	1.311	1.256	0.055	0.361
C. Organ Donation Attitudes:					
Comfortable discussing with family	369	0.775	0.745	0.030	0.583
Feels sufficiently informed	339	0.572	0.620	-0.048	0.454
Wants to add status	331	0.658	0.636	0.022	0.704
Worries about family disapproving	301	0.592	0.623	-0.031	0.584

Notes: This table presents the baseline characteristics of students, restricting the sample to those who answered both the baseline and endline survey. "High social desirability" is a binary variable that equals 1 whenever a student displays above median propensity to give socially desirable answers in a subsample of questions taken from Reynolds (1982), and 0 otherwise. "Practices religion" equals 1 whenever a student stated that they practice their religion every day, 0 otherwise. "High altruism" is a binary variable equal to 1 whenever a student scores above the median in a subsample of questions from the Rushton et al. (1981) altruism scale, and 0 otherwise. The items on institutional trust are scored on a scale from 0 to 3 where 3 is high trust. The items on attitudes towards organ donation are the following: "I have sufficient knowledge about organ donation to make an informed decision about whether I want to become a donor myself."; "I feel comfortable discussing organ donation with my family."; "I would like to be an organ donor myself."; "I worry my family may disapprove of organ donation." They are scored as 1 when a student somewhat or strongly agrees and 0 otherwise.

Table A2: Baseline Balance - Spring 2025 (Round 1)

	N	Control	Treatment	Diff: C-T	p-value
A. Demographics:					
Female	933	0.402	0.394	0.008	0.852
Born in Tunis	500	0.407	0.434	-0.027	0.556
Age in years	501	20.442	20.622	-0.180	0.591
Mother university education	501	0.811	0.792	0.019	0.619
Father university education	500	0.810	0.785	0.025	0.452
Mother works in medical sector	619	0.148	0.152	-0.004	0.883
Father works in medical sector	618	0.123	0.109	0.014	0.652
Practices religion	461	0.608	0.590	0.018	0.762
High social desirability	481	0.537	0.494	0.043	0.384
High altruism	473	0.640	0.606	0.034	0.448
B. Institutional Trust:					
Medical sector	488	1.447	1.361	0.086	0.155
CNPTO	488	1.269	1.204	0.065	0.324
C. Organ Donation Attitudes:					
Comfortable discussing with family	398	0.688	0.748	-0.060	0.155
Feels sufficiently informed	352	0.546	0.580	-0.034	0.613
Wants to add status	348	0.604	0.608	-0.004	0.936
Worries about family disapproving	321	0.619	0.544	0.075	0.206

Notes: This table presents the baseline characteristics of the students of the first cohort (Round 1). "High social desirability" is a binary variable that equals 1 whenever a student displays above median propensity to give socially desirable answers in a subsample of questions taken from Reynolds (1982), and 0 otherwise. "Practices religion" equals 1 whenever a student stated that they practice their religion every day, 0 otherwise. "High altruism" is a binary variable equal to 1 whenever a student scores above the median in a subsample of questions from the Rushton et al. (1981) altruism scale, and 0 otherwise. The items on institutional trust are scored on a scale from 0 to 3 where 3 is high trust. The items on attitudes towards organ donation are the following: "I have sufficient knowledge about organ donation to make an informed decision about whether I want to become a donor myself."; "I feel comfortable discussing organ donation with my family."; "I would like to be an organ donor myself."; "I worry my family may disapprove of organ donation." They are scored as 1 when a student somewhat or strongly agrees and 0 otherwise.

Table A3: Baseline Balance - Fall 2025 (Round 2)

	N	Control	Treatment	Diff: C-T	p-value
A. Demographics:					
Female	290	0.548	0.525	0.023	0.720
Born in Tunis	291	0.391	0.475	-0.084	0.079
Age in years	290	19.059	19.066	-0.007	0.957
Mother university education	287	0.806	0.779	0.027	0.598
Father university education	288	0.819	0.820	-0.001	0.995
Mother works in medical sector	288	0.120	0.148	-0.028	0.526
Father works in medical sector	288	0.108	0.090	0.018	0.618
Practices religion	190	0.596	0.539	0.057	0.425
High social desirability	285	0.512	0.446	0.066	0.241
High altruism	282	0.627	0.653	-0.026	0.674
B. Institutional Trust:					
Medical sector	290	1.351	1.369	-0.018	0.888
CNPTO	290	1.375	1.246	0.129	0.173
C. Organ Donation Attitudes:					
Comfortable discussing with family	228	0.783	0.727	0.056	0.522
Feels sufficiently informed	197	0.678	0.646	0.032	0.538
Wants to add status	195	0.598	0.566	0.032	0.599
Worries about family disapproving	185	0.617	0.641	-0.024	0.730

Notes: This table presents the baseline characteristics of the students of the second cohort (Round 2). "High social desirability" is a binary variable that equals 1 whenever a student displays above median propensity to give socially desirable answers in a subsample of questions taken from Reynolds (1982), and 0 otherwise. "Practices religion" equals 1 whenever a student stated that they practice their religion every day, 0 otherwise. "High altruism" is a binary variable equal to 1 whenever a student scores above the median in a subsample of questions from the Rushton et al. (1981) altruism scale, and 0 otherwise. The items on institutional trust are scored on a scale from 0 to 3 where 3 is high trust. The items on attitudes towards organ donation are the following: "I have sufficient knowledge about organ donation to make an informed decision about whether I want to become a donor myself."; "I feel comfortable discussing organ donation with my family."; "I would like to be an organ donor myself."; "I worry my family may disapprove of organ donation." They are scored as 1 when a student somewhat or strongly agrees and 0 otherwise.

Table A4: ID Changes - Spillovers

		Spillovers	
	Main	Reciprocal Ties	Classmates
Treatment	0.023**	0.019*	0.029
	(0.009)	(0.010)	(0.029)
Treatment x N^T		-0.004	0.001
		(0.029)	(0.001)
N^T		0.020	-0.001
		(0.022)	(0.001)
Control Mean	0.013	0.013	0.013
Observations	1276	1276	1276

Notes: The table shows the estimated treatment effects on the main outcome, ID changes to add the donor status. All results are estimated using ordinary least squares (OLS) regressions. Column "Main" shows the main specification as described in Equation (1). "Reciprocal Ties" defines N as a student's total number of reciprocal social ties and N^T as the number of treated social ties among them. Column "Classmates" shows results from an alternative spillover effects regression where N^T is the number of treated students among a given student's classmates and N is the total number of classmates. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Table A5: Social Networks - Spring 2025 (Round 1)

	N	Control	Treatment	Diff: C-T	p-value
Isolated student	914	0.308	0.315	-0.007	0.879
Total social ties	914	1.925	1.711	0.214	0.442
Share of reciprocal ties	502	0.366	0.327	0.039	0.458
Share of reciprocal ties with treatment group	502	0.088	0.461	-0.373	0.000
Number social ties from control group	914	1.387	0.371	1.016	0.000
Number social ties from treatment group	914	0.538	1.339	-0.801	0.000
No social ties from control group	913	0.415	0.770	-0.355	0.000
No social ties from treatment group	913	0.680	0.399	0.281	0.000
Share of social ties from treatment group	914	0.197	0.530	-0.333	0.000

Notes: The baseline survey asked students to list the peers with whom they frequently discuss important things. This table restricts to the cohort of students who answered baseline in spring 2025 (Round 1). The social ties shown in this table are computed using the in-degree definition, that is, they represent the nominations *received* by a given student. For instance, a student is isolated in the in-degree sense if they were not nominated by anyone. A social tie is reciprocal when student A is nominated by student B and vice versa. The number of observations for the share of reciprocal ties is smaller as it can be only computed for students who answered baseline. For students without social ties, the share of (reciprocal) social ties to the treatment group is set to 0.

Table A6: Social Networks - Fall 2025 (Round 2)

	N	Control	Treatment	Diff: C-T	p-value
Isolated student	350	0.202	0.170	0.032	0.498
Total social ties	350	2.345	2.891	-0.546	0.093
Share of reciprocal ties	267	0.460	0.444	0.016	0.760
Share of reciprocal ties with treatment group	267	0.116	0.605	-0.489	0.000
Number social ties from control group	350	1.837	0.660	1.177	0.001
Number social ties from treatment group	350	0.507	2.231	-1.724	0.000
No social ties from control group	350	0.256	0.592	-0.336	0.000
No social ties from treatment group	350	0.680	0.224	0.456	0.000
Share of social ties from treatment group	350	0.158	0.653	-0.495	0.000

Notes: The baseline survey asked students to list the peers with whom they frequently discuss important things. This table restricts to the cohort of students who answered baseline in fall 2025 (Round 2). The social ties shown in this table are computed using the in-degree definition, that is, they represent the nominations *received* by a given student. For instance, a student is isolated in the in-degree sense if they were not nominated by anyone. A social tie is reciprocal when student A is nominated by student B and vice versa. The number of observations for the share of reciprocal ties is smaller as it can be only computed for students who answered baseline. For students without social ties, the share of (reciprocal) social ties to the treatment group is set to 0.

Table A7: Predictors of Attrition in Follow-up

	All	Responded to BL	Responded to BL and EL
A. Demographics:			
Female	-0.082***	-0.039	-0.054
	(0.030)	(0.042)	(0.056)
Born in Tunis		-0.035	-0.046
		(0.029)	(0.045)
Age in years		-0.004	0.013
		(0.018)	(0.024)
Mother university education		0.015	0.071
		(0.052)	(0.089)
Father university education		-0.011	0.014
		(0.046)	(0.076)
Mother works in medical sector		-0.010	0.031
		(0.059)	(0.070)
Father works in medical sector		0.077	0.087
		(0.051)	(0.076)
Practices religion		-0.009	-0.035
		(0.041)	(0.065)
High social desirability		-0.015	-0.055
		(0.037)	(0.048)
High altruism		-0.030	-0.086*
		(0.029)	(0.049)
B. Institutional Trust:			
Medical sector		-0.017	0.008
		(0.021)	(0.030)
CNPTO		0.018	0.065*
		(0.025)	(0.035)
C. Organ Donation Attitudes:			
Comfortable discussing with family		-0.033	-0.053
		(0.058)	(0.082)
Feels sufficiently informed		0.054	0.021
		(0.050)	(0.065)
Wants to add status		-0.055	-0.028
		(0.046)	(0.071)
Worries about family disapproving		0.086*	0.083
		(0.043)	(0.071)
Observations	882	484	284
Control Mean	0.861	0.827	0.748

Notes: This table presents the baseline characteristics of the students from the first cohort who did not respond to the follow-up survey. The second cohort of students will be invited to complete the follow-up survey in spring 2026 and is therefore not included in this table. The outcome is an indicator variable which equals 1 when a student failed to respond the follow-up survey and 0 otherwise. "Responded to BL" shows the characteristics of all students who had responded to the baseline survey. "Responded to BL and EL" restricts to attritors who had responded to both baseline and endline.

Table A8: Baseline Balance - Answered Follow-up

	N	Control	Treatment	Diff: C-T	p-value
A. Demographics:					
Female	135	0.561	0.479	0.082	0.416
Born in Tunis	96	0.447	0.483	-0.036	0.733
Age in years	98	20.051	20.356	-0.305	0.420
Mother university education	98	0.846	0.780	0.066	0.415
Father university education	98	0.821	0.814	0.007	0.927
Mother works in medical sector	119	0.059	0.191	-0.132	0.015
Father works in medical sector	119	0.078	0.103	-0.025	0.582
Practices religion	97	0.700	0.649	0.051	0.651
High social desirability	96	0.579	0.500	0.079	0.519
High altruism	96	0.658	0.672	-0.014	0.869
B. Institutional Trust:					
Government	98	1.077	1.000	0.077	0.659
Police	98	0.974	0.983	-0.009	0.952
Medical sector	98	1.359	1.492	-0.133	0.439
CNPTO	98	1.205	1.237	-0.032	0.820
C. Organ Donation Attitudes:					
Comfortable discussing with family	86	0.857	0.745	0.112	0.264
Feels sufficiently informed	75	0.531	0.535	-0.004	0.973
Wants to add status	75	0.710	0.705	0.005	0.957
Worries about family disapproving	69	0.483	0.525	-0.042	0.769

Notes: This table presents the baseline characteristics of the students from the spring cohort who answered the follow-up survey. "High social desirability" is a binary variable that equals 1 whenever a student displays above median propensity to give socially desirable answers in a subsample of questions taken from Reynolds (1982), and 0 otherwise. "Practices religion" equals 1 whenever a student stated that they practice their religion every day, 0 otherwise. "High altruism" is a binary variable equal to 1 whenever a student scores above the median in a subsample of questions from the Rushton et al. (1981) altruism scale, and 0 otherwise. The items on institutional trust are scored on a scale from 0 to 3 where 3 is high trust. The items on attitudes towards organ donation are the following: "I have sufficient knowledge about organ donation to make an informed decision about whether I want to become a donor myself."; "I feel comfortable discussing organ donation with my family."; "I would like to be an organ donor myself."; "I worry my family may disapprove of organ donation." They are scored as 1 when a student somewhat or strongly agrees and 0 otherwise.

Table A9: Behavioral Outcome - ID Changes - By Data Collection Round

	First Round		Second Round	
	(1) Main	(2) Spillovers	(3) Main	(4) Spillovers
Treatment	0.020**	0.017*	0.029	0.037
	(0.010)	(0.010)	(0.021)	(0.029)
Treatment x Share T		0.005		-0.056
		(0.036)		(0.056)
Share T		0.013		0.060
		(0.028)		(0.037)
Control Mean	0.015	0.015	0.009	0.009
Observations	882	882	394	394

Notes: The table shows the estimated treatment effects on the main outcome, ID changes to add the donor status by round of data collection. All results are estimated using ordinary least squares (OLS) regressions. Columns (1) and (3) show the main specification as described in Equation (1) for the first and the second round of data collection respectively. Columns (2) and (4) show results from the spillover effects regression for the first and second round of data respectively, using the share of treated students in a given student's social network ("Share T") and its interaction with treatment as regressors as specified in Equation (2). All regressions control for baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Table A10: 6-Month Follow-Up: Did you discuss Organ Donation with ... ?

	Friends	Family
Treatment	0.239***	0.001
	(0.071)	(0.087)
Control Mean	0.596	0.474
Observations	128	128

Notes: The follow-up survey asked respondents whether they had discussed organ donation with (i) their friends and (ii) their family. This table reports the estimated treatment effects on these outcomes, coded as 1 when a respondent declared they had discussed organ donation with their friends / family and 0 otherwise. All results are estimated using ordinary least squares (OLS) regressions. All regressions control for the baseline outcome, if available, baseline trust in the organ donation center, baseline fear of family disapproval, respondent gender, being born in Tunis, respondent's mother being employed in the medical sector, as well as strata fixed effects. The regressions are weighted using inverse probability weights. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Table A11: Multiple Hypotheses Tests

	(1) Original p-values	(2) FDR q-values	(3) Romano-Wolf
ID Changes	0.015	0.007	0.769
Attitudes & Norms	0.796	0.153	0.769
Legal Knowledge	0.000	0.001	0.001
Medical Knowledge	0.000	0.001	0.001
Religious Beliefs	0.000	0.001	0.007
Institutional Trust	0.000	0.001	0.001
Observations	1375		

Notes: Column (1) provides p-values from the original regressions at endline. Column (2) shows sharpened False Discovery Rate (FDR) q-values following Anderson (2008). Column (3) shows p-values corrected for multiple hypotheses testing using the procedure proposed by Romano and Wolf (2016). All results are estimated using ordinary least squares (OLS) regressions. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors are clustered at the class level.

Table A12: Disaggregated Mechanisms I at the 6-Month Follow-Up

Panel A: Attitudes towards Organ Donation

	Feels at Ease with Donation	Comfortable Discussing with Family	Afraid of Family Disapproval
Treatment	0.052	-0.073	-0.107
	(0.073)	(0.094)	(0.091)
Control Mean	0.702	0.719	0.596
Observations	128	128	128

Panel B: Social Norms

	National	University
Treatment	-4.175	-15.745
	(3.861)	(26.604)
Control Mean	38.2	68.6
Observations	128	117

Panel C: Legal Knowledge

	Organ Sale Illegal in Tunisia	Organ Donation not Costly	Knows how to Become Donor
Treatment	0.075	0.383***	0.380***
	(0.081)	(0.066)	(0.073)
Control Mean	0.789	0.263	0.421
Observations	128	128	128

Notes: This table reports the estimated treatment effects on the secondary outcomes item-by-item using the data collected in the six-month follow-up among the first cohort of students. All results are estimated using ordinary least squares (OLS) regressions. The outcomes are survey items from the endline survey, with the exception of "Afraid of Family Disapproval" all are coded such that positive values imply more progressive attitudes, norms and higher knowledge. Attitudes were measured on a 4-point Likert scale. "Somewhat agree" and "completely agree" are coded as 1, "somewhat disagree" and "completely disagree" as 0 to make the outcomes binary. Social norms were measured at the national level (on a 0-100% scale, how many Tunisians approve of organ donation?) and at the university level (insert the number of students who will change their ID). The legal knowledge items equal 1 when a respondent gave the correct answer and 0 otherwise. See Section B.2 for a full list of items by index. All regressions control for the baseline outcome, if available, baseline trust in the organ donation center, baseline fear of family disapproval, respondent gender, being born in Tunis, respondent's mother being employed in the medical sector, as well as strata fixed effects. The regressions are weighted using inverse probability weights. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Table A13: Disaggregated Mechanisms II at the 6-Month Follow-Up

Panel A: Medical Knowledge

	Organs	Potential Donors	Brain Death
Treatment	0.402	0.325*	0.288***
	(0.262)	(0.179)	(0.092)
Control Mean	2.614	0.719	0.368
Observations	128	128	128

Panel B: Religious Beliefs around Organ Donation

	Islam Encourages Organ Donation	Traditional Funeral Possible	No Religious Concerns
Treatment	0.119	0.180*	0.167
	(0.093)	(0.100)	(0.100)
Control Mean	0.158	0.439	0.456
Observations	128	128	128

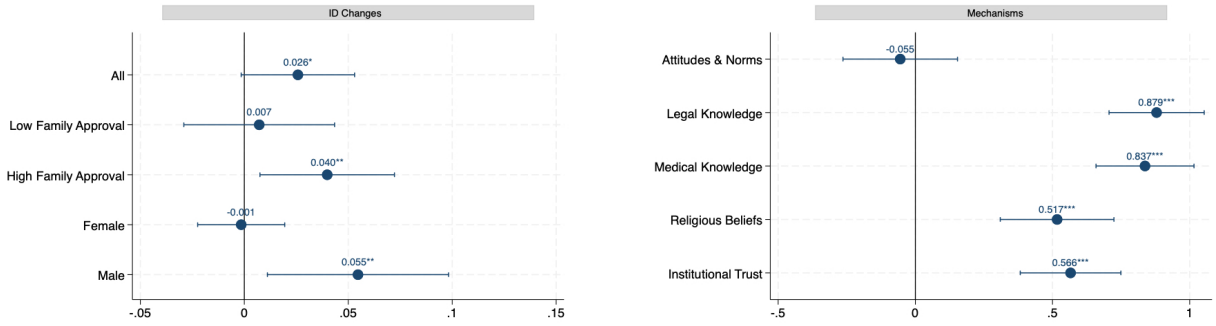
Panel C: Institutional Trust

	Trust CNPTO	Organ Donation Equitable	Organ Trafficking Uncommon
Treatment	0.261*	0.283***	-0.070
	(0.146)	(0.082)	(0.074)
Control Mean	1.404	0.246	0.316
Observations	128	128	128

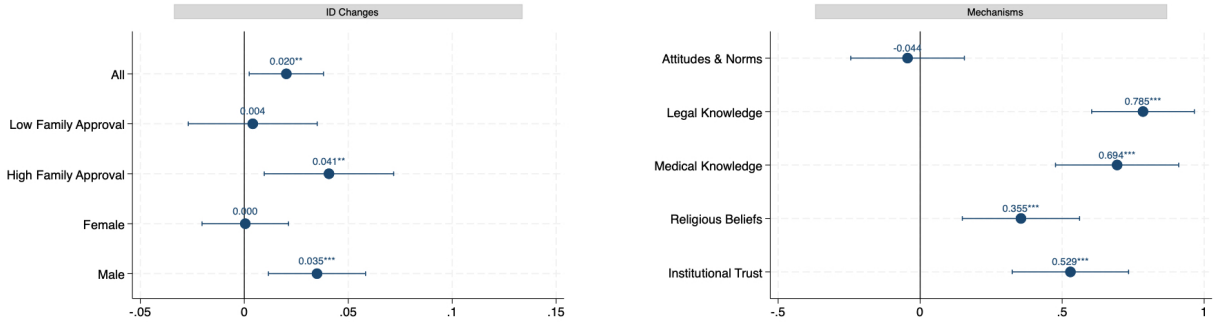
Notes: This table reports the estimated treatment effects on the secondary outcomes item-by-item using the data collected in the six-month follow-up among the first cohort of students. All results are estimated using ordinary least squares (OLS) regressions. The outcomes are survey items from the endline survey, all coded such that positive values imply more progressive attitudes, norms and higher knowledge. Attitudes were measured on a 4-point Likert scale. "Somewhat agree" and "completely agree" are coded as 1, "somewhat disagree" and "completely disagree" as 0 to make the outcomes binary. Social norms were measured at the national level (on a 0-100% scale, how many Tunisians approve of organ donation?) and at the university level (insert the number of students who will change their ID). The legal knowledge items equal 1 when a respondent gave the correct answer and 0 otherwise. See Section B.2 for a full list of items by index. All regressions control for the baseline outcome, if available, baseline trust in the organ donation center, baseline fear of family disapproval, respondent gender, being born in Tunis, respondent's mother being employed in the medical sector, as well as strata fixed effects. The regressions are weighted using inverse probability weights. Standard errors in parentheses are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Figure A1: Robustness Checks

(a) No Covariate Imputation

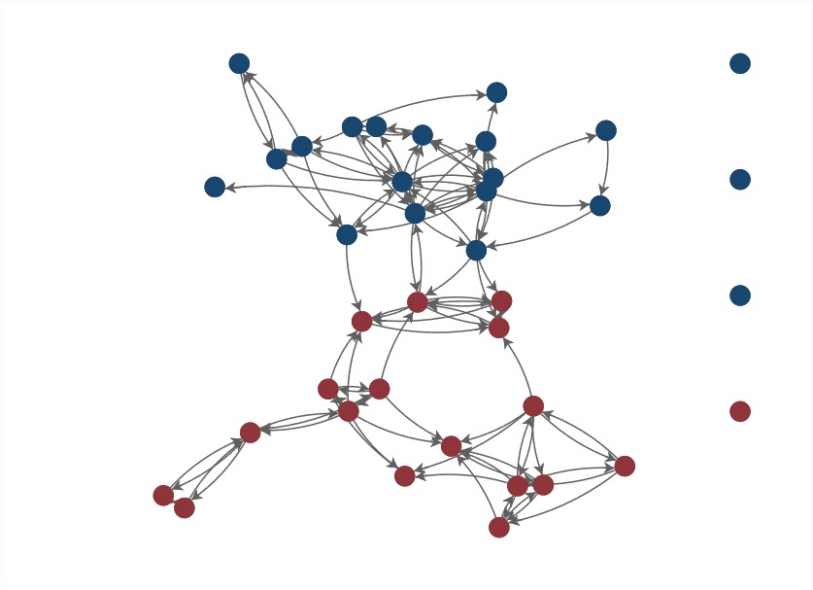


(b) No Covariate Adjustment



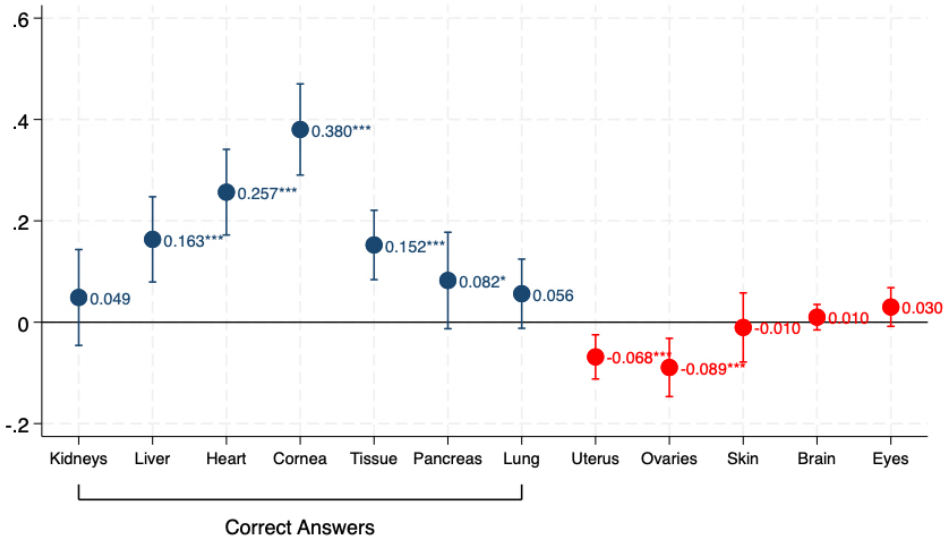
The figure plots the estimated treatment effects on ID changes (left) and the secondary outcomes (right), aggregated to indices. Panel (A) shows results without covariate imputation. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Panel (B) shows results only controlling for strata fixed effects. All results are estimated using ordinary least squares (OLS) regressions. "All" shows the treatment effect from the main specification in Equation (1). The remaining estimates derive from heterogeneity analysis based on baseline characteristics as described in Section 4.3. All indices are standardized to have mean 0 and standard deviation 1 in the control group. Positive values indicate more progressive attitudes, norms and religious beliefs, increases in knowledge and institutional trust. See Section B.2 for a full list of items by index. Standard errors are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Figure A2: Social Ties in the Classroom



The figure illustrates the social networks of two first-year classrooms from the engineering department, one of which was allocated to treatment and one of which was allocated to the control condition. Red nods represent students from the treated classroom, blue nods represent students from the control condition. The arrows represent the direction of the social ties between students.

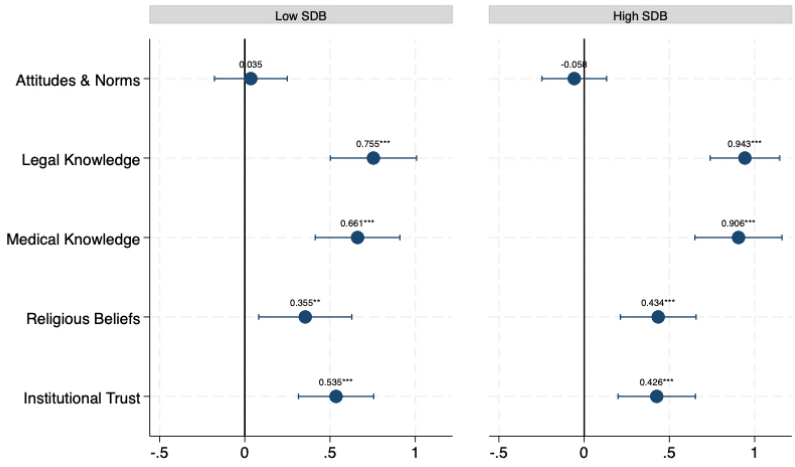
Figure A3: Which Organs / Tissues can be Transplanted in Tunisia?



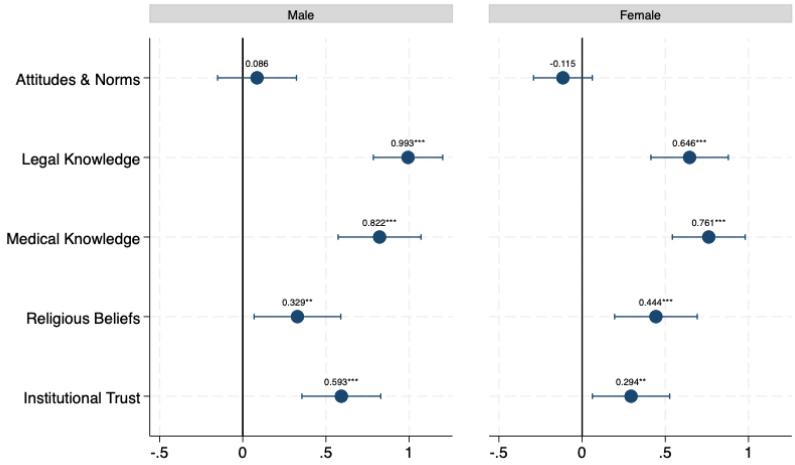
Notes: This figure disaggregates the treatment effects on the medical knowledge index reported in Panel A, column (1) of Table 4. All results are estimated using ordinary least squares (OLS) regressions. The outcomes are equal to 1 whenever a student answered that a given organ can be transplanted in Tunisia and 0 otherwise. Blue color indicates correct answers; red wrong answers. "Tissue" is short for "bone tissue". All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Figure A4: Further Heterogeneity

(a) Mechanisms by Social Desirability Bias (SDB)

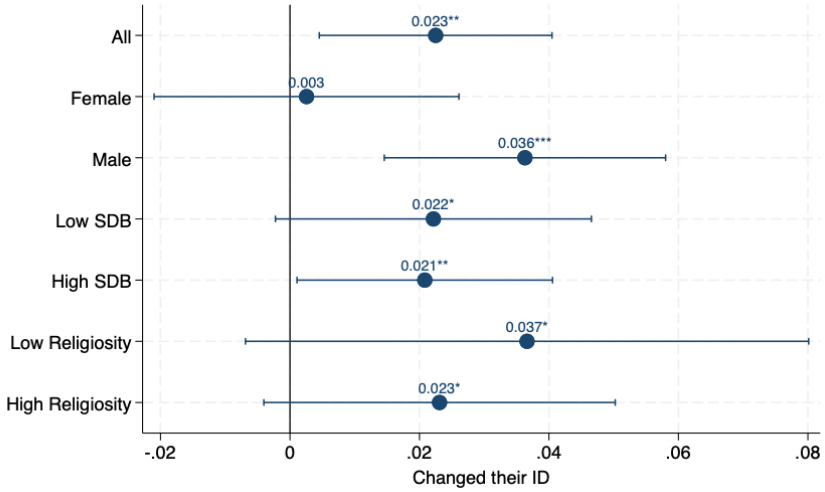


(b) Mechanisms by Gender



Notes: The figure plots the estimated treatment effects on the secondary outcomes aggregated to indices by propensity to give socially desirable answers (Panel A) and by gender (Panel B). All results are estimated using ordinary least squares (OLS) regressions. The indices are standardized to have mean 0 and standard deviation 1 in the control group. Positive values indicate more progressive attitudes, norms and religious beliefs, increases in knowledge and institutional trust. See Section B.2 for a full list of items by index. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

Figure A5: Further Heterogeneity - ID Changes



Notes: The figure compares the estimated treatment effects on ID changes from the main model with estimated treatment effects by gender, propensity to give socially desirable answers ("Low/High SDB"), and religiosity, all measured at baseline. All results are estimated using ordinary least squares (OLS) regressions. All regressions control for the baseline outcome if available, baseline trust in the organ donation center, the total number of social ties, the round of data collection and strata fixed effects. Standard errors are clustered at the class level. Asterisks indicate significance at the *** 1%, ** 5% and *10% level.

B Survey Inventory

B.1 Baseline Survey

Below, we present a subset of the question items contained in our baseline survey.

Attitudes towards organ donation

1. I have sufficient knowledge about organ donation to make an informed decision about whether I want to become a donor myself.
2. I feel comfortable discussing organ donation with my family.
3. I worry my family may disapprove of organ donation.

We use the following question item to measure stated risk preferences:

Risk aversion

Please rate your willingness to take risks, in general, on a scale from 1 to 10 where 1 means that you are not willing to take risks at all, and 10 means that you are very much willing to take risks.

We include the following questions from the Marlowe-Crowne Social Desirability Scale (Reynolds; 1982) to measure students' propensity to give socially desirable answers:

Propensity to give socially desirable answers

1. No matter who I am talking to, I am always a good listener.
2. When I don't know something, I don't at all mind admitting it.
3. I am always polite, even to people who are disagreeable.
4. I have never been annoyed when people expressed ideas very different from my own.
5. There have been times when I was quite jealous of the good fortune of others.

We use the following items from Rushton et al. (1981) to measure altruism:

Altruism

1. I have given money to a stranger who asked me for it.
2. I have allowed someone to go ahead of me in a queue in a shop.
3. I have offered to help a classmate I did not know well with a homework assignment.

We furthermore measure students' social networks with a dropdown menu, similar to Alan and Kubilay (2025):

Social Networks

We are interested in studying the social network in the university. Please choose the names of the students with whom you discuss important things. This can be any student from SMU who you spend a lot of time with. Note that you will have to choose their department and year of study first.

[Dropdown menu with student names]

B.2 Endline Survey

Below, we present the question items which were used for the construction of our secondary outcomes. These items were asked twice, at endline and at the six-month follow-up survey.

1a. Attitudes towards Organ Donation

1. The idea of my organs being in someone else's body gives me a feeling of discomfort. *(Completely disagree, Somewhat disagree, Somehow agree and Completely agree)*
2. I feel comfortable discussing organ donation with my family. *(Completely disagree, Somewhat disagree, Somehow agree and Completely agree)*
3. I worry that my family may disapprove of organ donation. *(Completely disagree, Somewhat disagree, Somehow agree and Completely agree)*

1b. Social Norms

1. In your opinion, which percentage of Tunisians approve of organ donation?

   (Slide scale from 0 to 100)
2. How many students from MSB / MedTech will choose to change their ID to become organ donors this week? We will give a 50 TND cafeteria voucher to the person who gets closest to the sign-up data.

   (Please insert the number here)

2. Legal knowledge

1. Do you know how you can declare your desire to be an organ donor in Tunisia? *(Yes - No - Don't know - Prefer not to answer).*
2. Does Tunisian law allow for the sale of organs? *(Yes - No - Don't know - Prefer not to answer).*
3. If you agree to donate a family members' organs you may end up paying extra medical bills in Tunisia. *(Correct - Wrong - Don't know - Prefer not to answer).*

3. Medical knowledge

1. Which organs can be transplanted in Tunisia? *(Kidney, Liver, Heart, Pancreas, Uterus, Ovaries, Lungs, Cornea, Skin, Bone tissue, Brain, Eyes, Don't know)*
2. From whom can organs be removed for the purpose of being transplanted? *Living persons, Dead persons (cerebral death), Dead persons (cardiac / circulatory death), Don't know, Prefer not to answer*
3. It is possible for a brain-dead person to recover from their injuries. *(Yes - No - Don't know - Prefer not to answer).*

4. Religious beliefs related to organ donation

1. What is the position of Islam towards organ donation? *(Negative: it discourages organ donation; neutral; positive: it encourages organ donation; don't know)*
2. I am worried that organ donation may conflict with my religion. *Completely disagree, somewhat disagree, somehow agree and completely agree.*
3. Is it possible to hold a traditional funeral service after organ donation? *(Yes, no, don't know)*

5. Trust in medical institutions

1. How much confidence do you have in the medical system in Tunisia? *(A great deal, Quite a lot, Not very much, None at all, Don't know, Prefer not to answer)*
2. How much confidence do you have in the CNPTO?[a] *(A great deal, Quite a lot, Not very much, None at all, Don't know, Prefer not to answer)*
3. How common is organ trafficking in Tunisia in your opinion? *(Not common at all, Not very common, Common, Very common, Don't know, Prefer not to answer)*
4. Do you feel that organ donation benefits all categories of persons equally in Tunisia? *(Yes, absolutely; Yes, mostly; No, not really; No, not at all; Prefer not to answer).*

[a] Centre National pour la Promotion de la Transplantation d'Organes

B.3 Follow-up Survey

To gather more information on the importance of peers on individual decision-making, added a number of additional questions to the follow-up survey:

1. Have you discussed organ donation with your family ?
2. Have you discussed organ donation with your friends at university?
3. If you have recently decided to change your ID to become an organ donor, who had the most influence on your decision? *(a lot of influence, some, not very much, none)*
    - Friends at university
    - Friends outside university
    - Siblings, cousins
    - Parents
    - Medical experts
    - Social media

C Instructions for the Intervention Team

CNPTO representatives:

Before the intervention, verify that you have a USB key with the presentation and sufficient informational flyers and brochures with you. Make sure to arrive to the classroom at the scheduled time. After introducing yourself and the CNPTO, briefly announce the topic and ask all people present if they consent to attending the presentation. Anyone who feels uneasy about the topic is allowed to leave the room during the presentation.

The lecturer will help you set up the powerpoint presentation. Limit the presentation to about 15 minutes and follow the slides closely. After this, participants have 10 minutes to ask questions. At the end of the presentation, distribute flyers and brochures, then thank the lecturer and the students before leaving the room. The lecturer will distribute the link / QR code to the endline survey.

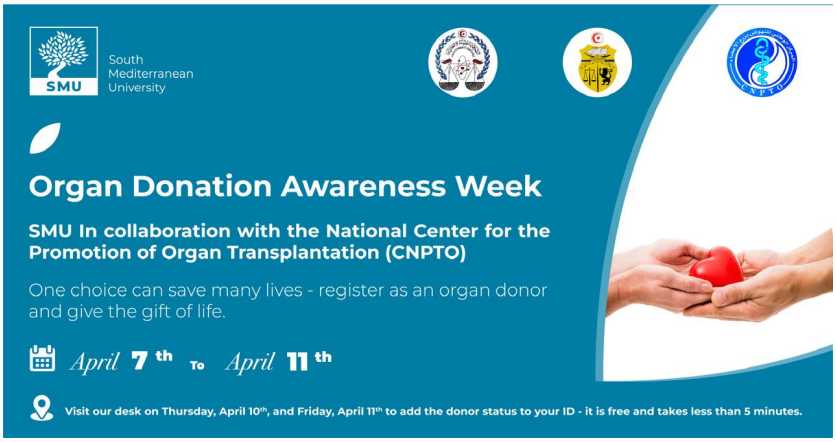
Police agent and photographer:

Greet the students and introduce yourself. Explain the procedure of adding the donor status to one's ID to them. Use neutral language throughout and do not influence their decision in any way. If they want to change their ID, ask them to sign the relevant forms and take finger prints. The photographer will then take a biometric photo.

Once the new ID is issued, ask the student whether they consent to sharing their decision with the research team. Hand them one printed copy of the privacy statement and two copies of the consent form. Give them time to read the forms and explain any points that may be unclear. If they consent to sharing their decision, ask them to sign the consent forms. They can keep one copy for themselves. Please collect the other copy and hand it to the research team at the end of the day.

D Implementation Pictures

(a) Poster advertising the intervention



(b) Organ donation awareness intervention, 7 April 2025

(c) Filling in the registration form for ID changes, 10 April 2025

(d) Donor registration, 10 April 2025

(e) Taking fingerprints, 10 April 2025

(f) Newly issued IDs, 18 April 2025