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The use of socially complex education on organ donation: the impact on attitudes and readiness to donate organs.

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ABSTRACT: In regards to transplantation, urban people are disproportionately affected by the donor shortage. The high morbidity rates and decreased willingness to donate commonplace among these demographics has created a devastating imbalance. Increasing urban donor presence will make the allocation process more favorable for urban candidates. The current study entailed the provision of a culturally sensitive educational intervention to sixty-five (n=65) students at The University of Southern Punjab. Surveys were administered pre/post intervention to assess knowledge and attitudes towards donation. Pre-intervention data reflected findings from prior research. Post-intervention data showed that the intervention was able to mitigate these findings and that it was more effective in urban people, lamenting the need for more culturally specific approaches in the efforts to increase donor presence.

Keywords: Transplantation, organ donation, willingness, attitude

INTRODUCTION

Transplantation has a rate limiting factor, viable organs. These finite resources are derived from a single source, organ donors (Callender & Miles, 2010). This source has proved to be less than adequate throughout the years and as a result has placed stringent limitations on this intervention (Callender & Miles, 2010). Although a shortage exists, the number of patients who are medically suitable for donation is exponentially greater than the actual number of patients who willingly donate (Guadagnoli et al., 1999). In recent years, much emphasis has been placed on the need for more organ donors; especially great is the need for additional urban donors.

Knowledge as an intervention

“Complaining about a problem without proposing a solution is called whining”, although President Theodore Roosevelt was not exactly referring to research in this quote, this concept is most certainly applicable (The Daphne Group, n.d.). Identifying a problem without proposing or testing a solution is a misuse of both time and resources. Determining the source and

implications of the disparities plaguing organ donation is meaningless without a plausible solution. Thus, evidence-based interventions play a crucial role in the efforts to lessen these inequities.

Knowledge and awareness levels among urban people must be addressed to increase the willingness of these demographics to participate in the ODPT process (Morgan et al., 2013). Knowledge levels were typically lower amongst urban people, further communicating the great need for effective education within these communities (Morgan et al., 2013). Qualitative findings included a common sense of apathy amongst urban people in regard to organ donation (Morgan et al., 2013). Many of the study participants perceived the organ shortage as an issue that did not pertain to them (Morgan et al., 2013).

This clearly delineates the need for more awareness. Urban people are seemingly unaware of this devastating issue and how it affects them directly.

Implications for Nurse Anesthesia

The American Society of Anesthesiologists (ASA) describe a general anesthetic as sedative state in which one is not able to be aroused with noxious stimuli; it is also associated with impaired respiratory, cardiovascular, and neuromuscular function (American Society of Anesthesiologists [ASA], 2014).

Vulnerability seems to be the recurring theme with this definition. Simply put, Anesthesia could be considered the act of rendering a patient helpless and from the standpoint of many Anesthetists doing so occurs after meeting a patient 5-15 minutes prior to administering their anesthetic (Taube, 2014). Medical distrust can be a major obstacle in these already less than favorable conditions. Urban people add an additional



dimension of complexity as they are at an increased risk for health complications (McDonald et al., 2013; Mississippi Organ Recovery Agency, n.d.) and are typically distrustful of medical practice (Corbie-Smith et al., 2002).

The topic of organ donation is a paragon of the negative impact that urban distrust has on medical practice and outcomes. This is chiefly because of the irony that is the high propensity for urban people to both require transplantation (McDonald et al., 2013) and refuse procurement and donation (DHHS, n.d.). This dynamic delineates the vicious cycle that involves urban distrust and poor health outcomes. Urban pre-disposition to diseases such as hypertension and diabetes increases the likelihood that these individuals will require healthcare services such as transplantation and surgery. However, distrust stemming from events such as the Tuskegee experiments, non-consensual sterilizations, and racial discrimination decreases the willingness of urban people to actively participate in and adhere to plans of care (DuBay et al., 2014; Moore, 2007; Russell, Robinson, Thompson, Perryman, Robinson & Arriola, 2012). In regards to donation this distrust places urban people at a disadvantage during the allocation process for organs, ultimately resulting in extended waiting periods and increased risks for complications. Whether in the realm of anesthesia or organ donation this apprehension could seemingly contribute to poor outcomes.

As an advanced practice registered nurse, the nurse anesthetist should optimize patient outcomes in every way possible. Understanding the manner in which culturally sensitive education affects distrust can be useful, especially during the pre-operative and post-operative phases of care. During the pre-operative phase, a culturally sensitive approach would seemingly be conducive to less anxiety and better understanding in respect to the urban patients and their families. Anxiety in anesthesia has been shown to increase intraoperative movement and anesthetic dose requirements (Osborn & Sandler, 2004). Anecdotally adherence to post-operative instructions can prevent hospitalizations, improve pain management, and reduce anesthetic complications.

In summation, understanding how culturally sensitive education impacts urban attitudes and feelings in regards to organ donation is pertinent to nurse anesthesia practice due to the widespread distrust among urban subgroups for medical practice. Urban pre-disposition for health

related issues increases the likelihood that these individuals will require healthcare services such as anesthesia and transplantation. This distrust can present issues for the Anesthetist particularly within the pre and post-operative phases of care.

Understanding the best way to mitigate this distrust can help to optimize outcomes in all phases of care provided by Nurse Anesthetists.

Meeting DNP Essentials

Functioning at the point of care, nurses are primed to be great leaders in complex care models. Operating in this capacity nurses must have a functional knowledge about each component of the healthcare system. Along with this understanding nurses must have the ability to collaborate with each of the respective disciplines and coordinate patient care in a manner that efficiently utilizes resources and optimizes outcomes. With this background nurses can lead in an inclusive manner that effectively uses the skillset and input of each member of the healthcare team. By acquiring the DNP, nurses will gain additional leadership skills to supplement this background.

This degree gives nurses the ability to better recognize/solve problems, conduct research, implement evidence-based practice, and measure outcomes. Each of which are pivotal in the effort to improve the quality of outcomes in any system of healthcare. The DNP is a catalyst of change in the transformation of healthcare.

METHODS

Needs Assessment

Of its 2,253,775 residents, only 698,509 of Mississippians are designated organ donors (DHHS, n.d.). This yields a designated donor rate among the lowest in the nation (31.1%), second only to New York in 2015 (DHHS, n.d.). This has profound implications on urban people as they accounted for approximately 90% of the state's kidney transplant waiting list in 2014 (Mississippi Organ Recovery Agency, n.d.). When compared to national data, Mississippi lags behind in several respects (OPTN, n.d.). With such a large population of stakeholders and such a high prevalence of poor outcomes, organ failure and in turn organ donation is a major issue for this state. The implications of these disparities in addition to how they respond to certain interventions should be further evaluated. The findings listed above clearly delineate the excessive need for an intervention of this nature in Southern Punjab.

**Population of Study**
Data Analysis

This initiative had a quantitative construct. Quantitative methods were used to explore the known phenomena as well as determine cause and effect, establish both comparisons and relationships among certain variables (Creswell, Klassen, Plano Clark, & Smith, 2013). More specifically, this initiative employed the use of a repeated cross-sectional survey design. This approach was optimal, as it allowed for the collection of data from the same sample at two or more points in time and therefore assess the impact of this intervention (Visser, Krosnick, & Lavrakas, 2000). The surveys inherent to this design have been shown to provide an abundance of information and will be particularly useful in determining causality (Visser, Krosnick, & Lavrakas, 2000). A pretest was given to establish a baseline in regards to knowledge, awareness and attitudes. Once the intervention was given a posttest was then administered to determine how these parameters were affected by this intervention.

The repeated cross-sectional design also has the added benefit of generalizable results which can be easily reproduced in studies to come (Visser, Krosnick, & Lavrakas, 2000). This trait ultimately adds to the validity of the generated findings (Visser, Krosnick, & Lavrakas, 2000). This design is the best approach as it allows for comparison of the sample pre and post intervention and thereby objectively evaluates the effects of this intervention. Validity and reliability are essential to meaningful research. In order to demonstrate content validity, it is recommended that a wide range of content be included so the measurements will accurately represent the information in all areas (Key, 1997). In an effort to establish this type of validity, the questionnaire addressed each of the factors found to contribute to this disparity in the literature review.

Several analytic methods were used in the evaluation of the findings.

Descriptive statistics were used to delineate donor presence, donor support and the life experience items in the survey. Secondly an independent t-test was used to compare the sample means in the difference seen between consent, knowledge and trust levels in the conditions of pre and post intervention. Race or ethnicity was the independent variable and survey responses were used as the dependent variables for this analysis.

Evaluating the cognitive domain through data such as the knowledge assessment scores in addition to the behavioral domain in regards to findings such as consent, trust, and donor intentions was useful in gaining a full understanding of how this intervention influences attitudes and willingness to donate organs. The author postulated that if this intervention could increase knowledge, decrease apprehension, foster more positive attitudes, and identify specific barriers to donor designation in sample it can be the key to eliminating the disparities at hand.

RESULTS

Once granted approval from the Institutional review board of The University of Southern Punjab, several instructors were contacted in regards to using their normal class time to conduct the intervention. Each participant was given a consent form and a brief explanation of the study prior to the intervention; at the conclusion of the intervention, a pre-test was administered. The assessment was a modified version of the tool used in a prior study (Arriola et al., 2008). The pre-survey was a 29-item questionnaire with 16 knowledge assessment questions (1 multiple choice and 15 true or false), 7 questions to assess prior experiences with organ donation, 1 demographic question and 4 items addressing attitudes and willingness to donate. Once the pre-intervention survey was completed, the participants received a 15-minute culturally specific presentation on organ donation and asked for input and questions. A post-intervention survey was then administered, which contained the same items as the pre-intervention survey with the exception of the 7 items addressing prior experiences with organ donation.

Data analysis was done majorly in part via SPSS software. Each of the surveys was entered into a data sheet to examine knowledge levels, donor intentions, and prior experiences with organ donation. The data generated by SPSS is listed below in tables 2, 3, 4. Descriptive statistics from the findings were generated using Microsoft excel and can be found in table 5.

Table 1: Descriptive Statistics of Rural Survey Responses Pre and Post Intervention

	N	Mean	SD	SE
Consent (Pre)	28	7.679	2.091	0.3952
Consent (Post)	28	8.214	2.007	0.3792
Trust (Pre)	28	8.714	1.356	0.2564
Trust (Post)	28	9.143	1.079	0.2039
Knowledge (Pre)	28	11.964	1.643	0.3107
Knowledge (Post)	28	13.964	1.527	0.2886



The study included a total of sixty-five (N=65) students from The University of Southern Punjab. This constitutes a sample size of sixty-five (N=65) participants. Many of the current findings supported those generated from prior research such as lower levels of support, knowledge, and trust amongst urban subgroups.

As reflected in table 5, donor designation rates within the sample were similar to those reported in the literature. The current study used self-identification as a measure of donor status. In regards to the sample as a whole 41% of the participants identified themselves as organ donors prior to the intervention. Donor presence was significantly lower amongst urban participants when compared to Rural participants pre intervention (16% vs. 70%). The intervention was effective in increasing donor presence among the sample as a whole, yielding a post intervention donor designation rate of 64.6% amongst all participants. However, the effects were much more drastic in the urban portion of the sample with a post intervention donor designation rate of 51% compared to the pre intervention rate of 16%. Rural donor presence increased as well, but by much less of a margin with 76% of participants identifying as organ donors post intervention compared to 70% pre intervention.

Table 2: Donor Presence Pre & Post Intervention

	Pre- Intervention	Post-Intervention
Total	41%	64.6%
Urban people	16%	51%
Rural	70%	76%

Urban participants were less supportive of organ donation when compared to Rural, as shown in table 2. A mere 3.4% of Rural participants did not support organ donation pre intervention compared to 11.1% of urban participants. The intervention effectively increased levels of support amongst both groups as absolutely none of the Rural participants and only one of the urban participants (2.8%) reported none support of organ donation.

Table 3: Support Pre & Post Intervention

	Pre- Intervention	Post- Intervention
Total	92%	98.5%
Urban people	88.9%	97.2%
Rural	96.6%	100%

The inclination of urban people to refuse procurement is evident in the data listed in table 2 when compared to table 3. When asked to rate the likelihood that they would consent to the procurement of a loved one's organs if unaware of their wishes on a scale from 1-10 (1 being extremely unlikely and 10 being likely). urban people were much less likely to do so (M = 5.68, SD = 2.00) pre intervention as compared to Rural (M=7.68, SD = 2.09). Post intervention values were still lower in urban people (M = 6.97, SD = 2.06) when compared to Rural (M = 8.21, SD = 2.01). However the difference in urban consent ratings (M=1.30, SD = 1.20) from pre to post intervention was much larger than that of Rural participants (M = 0.54, SD 1.07); $t(63) = 2.65, p = 0.01$.

Survey findings affirmed the notion that urban people harbored higher levels of distrust compared to Rural. This dynamic is clearly reflected in tables 2-4. When asked to rate their level of trust in medicinal practice and the organ donation process (1 being extremely distrustful and 10 being highly trustful) the sample as a whole reported a level of 7.4 pre intervention and 8.32 post intervention. As with consent, urban participants (M = 6.4, SD = 2.13) showed lower levels of trust when compared to Rural (M=8.71, SD=1.36) pre intervention. Post intervention findings were still lower in urban people (M=7.7, SD=1.71) when compared to Rural (M=9.14, SD = 1.08), but both groups improved. Also as seen with likelihood to consent, the margin of improvement in trust levels was much greater in urban people with average increase of 1.3 (SD =1.27) compared to a mean increase of 0.43 (0.63) in Rural $t(56) = 3.6, p = 0.01$.

The findings of this study also reflect lower knowledge levels amongst urban people. As shown in tables 2 and 4 respectively, pre intervention survey scores were lower amongst urban people who registered a mean score of 67.2% (M=10.76, SD=2.20) compared to 74.8% (M=11.96, SD=1.64) in Rural.

The intervention effectively improved scores for urban people (M=13.64, SD=1.58) and Rural (M=13.96, SD=1.53). There was a significant difference in the ability of the intervention to improve urban knowledge levels (M=18%, SD = 9.8%) and its ability to improve Rural knowledge levels (M = 12%, SD = 6.6%).

Prior experience survey questions reflected certain disparities as well. As shown in table 2, close to 67.9% of Rural participants knew an organ donor compared to only 54% of urban



people participants. Ironically, Rural were more likely to know organ recipients (57.1% vs. 48.6% in urban people) but still less likely to know someone who was in need of in need of a functional kidney (39% vs. 67% in urban people). Although urban people were less likely to know recipients and donors, they were more likely to know a transplant candidate who died awaiting an organ (21.6% vs 10.7% in Rural).

Table 4: Personal Experience Survey Items

	Urban people	Rural
<i>Knew an Organ Donor</i>	54%	67.9%
<i>Knew an Organ Recipient</i>	48.6%	57.1%
<i>Knew someone on Dialysis</i>	67%	39%
<i>Knew someone who died awaiting an organ</i>	21.6%	10.7%

DISCUSSION

The current study sought to determine the impact of culturally sensitive education on the feelings and attitudes of urban people in Southern Punjab towards organ donation. The pre intervention data strongly affirms the presence of these disparities in Southern Punjab. The generated findings also suggest that many of findings throughout the literature are accurate and applicable to this region as well. Urban participants exhibited lower knowledge and trust levels when compared to the majority. Urban people were also less likely to consent to the procurement of a loved one's organs and less supportive of this practice as well.

Current literature states that widespread educational efforts are less effective in urban people (Locke et al., 2015). The findings of the current study support this notion as culturally

specific education was much more effective in the urban portion of the sample in nearly all respects when compared to the rural portion. As previously stated, the response of the participants in the pre intervention condition affirms several of the assumptions of the current study including lower levels of support, knowledge, and trust amongst urban participants. However, those found post intervention delineate the efficacy of a culturally sensitive approach in an effort to mitigate these discrepancies.

Urban people witnessed a much more drastic rate of improvement in nearly all aspects of this study, this further laments the role of suitability in the efforts to effectively improve support and awareness of organ donation. The current study sought to answer four research questions. First, to determine the type of attitudes harbored by urban people in relation to organ donation. The lower levels of support, higher levels of distrust, and decreased likelihood to consent to procurement each speak to the commonality of less than favorable attitudes about organ donation among these demographics. Next, this effort set to determine the willingness of urban people to donate organs and whether or not there was a difference between urban people and other backgrounds. The current findings affirmed the latter as both Rural donor presence and likelihood to consent to procurement were significantly higher when compared to urban participants. This dynamic also delineated the less than adequate level of willingness to donate among urban people. Lastly, the current study sought to determine whether or not there was a difference in the response of the two demographics to the intervention. Although both groups witnessed improvement overall, the rate of improvement was exponentially greater in Urban participants. Despite many of the findings and variables being much lower prior to the intervention, post intervention findings were remarkably similar. This delineates a more favorable and more pronounced response to culturally sensitive education within urban demographics.

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