

Impact of Education on Physician Attitudes Toward Computed Tomography (CT) Utilization and Consent

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Impact of Education on Physician Attitudes toward Computed Tomography (CT) Utilization and Consent

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Objective:

With increasing focus on the risks of radiation exposure from CT scans, we set out to determine whether emergency physician attitudes and their predictions of ordering behaviors could be influenced by education.

Methods:

We surveyed emergency medicine resident and attending physicians at a tertiary suburban, level I trauma center with a yearly census of 74,000. The emergency medicine dually accredited residency has 56 residents in a 4-year program.

IRB approval was obtained after expedited review. Education was mandatory for those in attendance at the grand rounds and department meeting where presentations occurred. However, participation in the research survey was voluntary and anonymous for all participants.

Physicians were given a baseline survey that encompassed personal demographics, attitudes toward consent, knowledge of patient adverse reactions, and ordering behaviors. Thereafter, a brief power point presentation was given regarding CT scan risks. Subsequently, each participant received a matched follow up survey which was completed and returned in a sealed envelope with their baseline survey to a restricted access collection box. The survey format included yes/no and multiple-choice questions. Specifically, physicians estimated the number of scans they ordered per shift, the type of scan they most frequently ordered, the risk factors they considered prior to ordering a CT, and the influences that impacted the studies they ordered. Data analysis was performed using simple frequencies and Pearson's chi square.

Results:

A total of 75 physicians participated in the study; 69% (52/75) were residents and 31% (23/75) were attendings. Of those surveyed, 34% were females and 66% were male; 95% were white, and 99% non-Hispanic.

Ordering a CT in which an adverse event occurred was reported by 43% (32/75) of respondents. Some (13%;10/75) reported they did not know if informed consent was required for CT scans ordered from their Emergency Department. Pre education, 89% (67/75) reported sometimes ordering a CT due to a consultant request that they did not think was indicated and 92% (69/75) reported that they sometimes ordered a CT to appease a patient or family. 85% (64/75) reported that they sometimes ordered a CT scan defensively due to malpractice risk.

After the education session, physicians were more likely to believe a patient should give informed consent prior to CT (p=0.047; 52/74 before, 63/74 after) and predicted that they would be more likely to verbally discuss the risks/benefits of CT with their patients all of the time (p=0.002; 4/75 before, 18/75 after).

Compared to their estimated current ordering patterns, education did not significantly influence their predictions of sometimes ordering 'defensive' CTs due to malpractice risk (p>0.999; 64/75 before, 65/75 after).

Conclusions:

After a brief education session about the risks of CT utilization, physicians are significantly more likely to believe that patients should give informed consent prior to CT scan. Additionally, education influenced physician predictions that they would be significantly more likely to verbally discuss the risks and benefits of CT with their patients all the time. However, education does not appear to significantly influence physician predictions of sometimes ordering a 'defensive' CT scan due to malpractice risk.

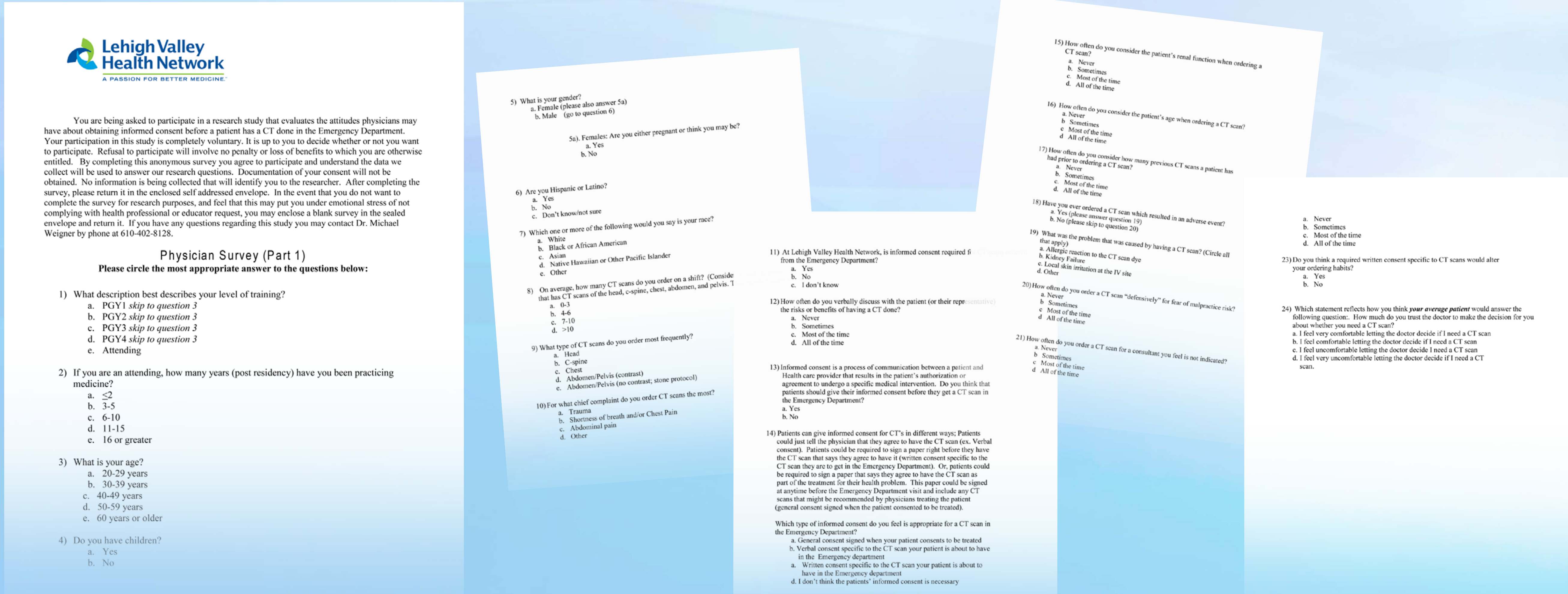
Table 1.

	Demographic Characteristics	Percent
Level of Training	PGY1	19
	PGY2	19
	PGY3	16
	PGY4	16
	Attending	31
Age	20-29 yrs	25
	30-39 yrs	59
	40-49 yrs	8
	50-59 yrs	6
	60+ yrs	1
	Female	35
Gender	Male	65
	Head	70
What Type of CT Scan do you Order Most Frequently?	Abdomen/Pelvis (contrast)	23
	Abdomen/Pelvis (no contrast)	7
For What Chief Complaint do you Order CT Scans the Most?	Trauma	57
	Abdominal pain	39
	Other	4
Is Informed Consent Required for CT Scans Ordered from the Emergency Department?	Yes	11
	No	76
	Don't know	13

Table 2.

Percent Change in Physician CT Scan Reported Prediction of Behavior Following Brief Educational Intervention Regarding Informed Consent

	Options	Percent Pre Education	Percent Post Education
How often do you verbally discuss with the patient (or their representative) the risks or benefits of having a CT done?	Never	1	1
	Sometimes	44	23
	Most of the time	49	51
	All of the time	5	24
How often to you consider the patients renal function when ordering a CT scan?	Never	0	0
	Sometimes	10	12
	Most of the time	41	38
	All of the time	48	50
How often do you consider the patients age when ordering a CT scan?	Never	1	1
	Sometimes	18	15
	Most of the time	30	39
	All of the time	51	45
How often to you consider how many previous CT scans a patient has had prior to ordering a CT scan?	Never	1	4
	Sometimes	37	31
	Most of the time	47	43
	All of the time	15	23



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