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The Impact of an Educational Video on Physician Confidence and Comfort Level in Discussing Autopsies

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The Impact of an Educational Video on Physician Confidence and Comfort Level in Discussing

Autopsies

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Abstract

Background: Autopsy rates have declined since the 1970s despite the procedure's benefit to families and medical science. Two well-documented reasons for the declining autopsy rate are physicians' lack of knowledge about autopsies and lack of confidence in offering them.

Objective: The primary aim of this study was to evaluate the impact of a brief educational video on physicians' comfort level, confidence, and knowledge regarding autopsy discussions. The objective was to address the declining autopsy rates by enhancing physicians' confidence and comfort level in offering autopsies to families. In addition, this study aimed to investigate physicians' practices of consenting for an autopsy and the common barriers they encountered.

Sample: The sample consisted of 37 physicians practicing in Davidson County who cared for adults, children, or both. **Method:** An online survey was sent to 300 physicians who work in

Davidson County, resulting in a sample of 37 participants. The Wilcoxon signed-rank test was used to evaluate the pre- and post-video survey responses. Free-text comments were assessed with qualitative content analysis. **Results:** The survey revealed a significant increase in

participant comfort levels ($p < .001$) and knowledge ($p = .002$) from pre-survey to post-survey. However, there was no statistically significant change in confidence levels ($p = 1$). The most frequently reported barrier was the emotional distress of families when discussing autopsies.

Conclusion: Effective communication about autopsies requires physicians to engage in sensitive and empathetic conversations with families, enabling families to make informed decisions. To facilitate this, physicians should feel comfortable and confident explaining the procedure.

Additionally, the availability of educational materials, support staff, and clear communication on the cost of the procedure are essential elements for allowing families to make an informed decision.

Keywords: Autopsy, Post-mortem examination, Consent, End-of-life care, Physician Experience

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The Impact of an Educational Video on Physician Confidence and Comfort Level in Discussing Autopsies

Postmortem examinations, also known as autopsies, are considered the ultimate diagnostic test and gold standard for determining the cause of death in individuals of all ages (Goldman, 2018; Reed et al., 2021; Tanko et al., 2021). Generally, there are two types of autopsies: medicolegal autopsies, funded by the state for investigative purposes, and hospital or clinical autopsies, requiring a physician to secure familial consent (Griffiths et al., 2018; Hoyert, 2023). While this study addresses barriers to hospital or clinical autopsies, it is noteworthy that both types are equally represented in official vital statistics records (Hoyert, 2023), and the procedural protocols remain consistent regardless of the context (Griffiths et al., 2018).

The roots of postmortem examinations trace back to 300 BCE, with the first autopsy investigating the cause of death occurring in 1302 (Tikkanen, 2024). Autopsies experienced a significant advancement in the 1800s when cellular pathology was incorporated into the examination, a practice that remains important today (Tikkanen, 2024). Since the 1960s, the basic requirements for autopsies have changed minimally, mandating a gross examination of organs and a histological examination of the heart, lungs, brain, liver, and kidneys (Bundock & Corey, 2019).

In contemporary times, autopsies persist as a crucial tool for medical research, disease monitoring, quality assurance in healthcare practices, public health surveillance, education, and bereavement follow-up (Alfsen et al., 2022; Goldman, 2018; Van der Tweel & Taylor, 2013). As of 2018, autopsies identified diagnostic errors that, if appropriately diagnosed, could have led to life-prolonging treatment in 9% of all hospital deaths in the U.S. (Goldman et al.). Autopsies have also significantly contributed to enhancing providers' understanding of disease symptoms,

diagnostic accuracy, and clinical practice standards (Ekanem & Vhrithhire, 2015). Notably, during the COVID-19 pandemic, autopsies played a pivotal role in comprehending the disease's progression, enabling clinicians to adapt and enhance treatment plans (Scarl et al., 2022).

In addition to uncovering diagnostic errors and improving treatment strategies, autopsies can have a broader societal impact. An official death diagnosis from an autopsy allows trends and characteristics of deaths to be monitored by public health officials, impacting the resources given to research and public health interventions (Bundock & Corey, 2019). For example, autopsies can benefit public health by detecting contagious diseases or environmental hazards, such as the identification of the West Nile virus as the source of a 1999 encephalitis outbreak (Ekanem & Vhrithhire, 2015; Vignau et al., 2023). For families, autopsies can provide closure and an explanation for their loved one's passing, helping alleviate the burden of self-blame and aiding in the healing process (Fjærestad et al., 2020; Scarl et al., 2022). When an autopsy is not performed, there is a missed opportunity to evaluate the clinician, the treatment, the diagnostics, and the entire healthcare system that the patient was a part of (Kaoje et al., 2017).

Despite the multiple benefits of an autopsy, the number of autopsies being performed in the United States has been steadily decreasing since the 1970s (Hoyert, 2023). The number of autopsies performed dropped from 239,591 autopsies per 2,148,463 deaths (11.2%) in 1990 to 249,337 autopsies per 3,383,729 deaths (7.4%) in 2020 (Hoyert, 2023). In addition, hospital rates have dropped from 40-60% in the 1970s to less than 5% in 2022 (Aljerian, 2022). In 2020, the highest autopsy rate was for those aged 15-24 (62.6%), and the lowest rate was for those aged 85 and older (0.6%) (Hoyert, 2023).

This decline can be traced back to the 1970s, when the Joint Commission on Accreditation of Hospitals (now known as the Joint Commission), driven by financial concerns,

eliminated the requirement for 20% of hospital deaths to undergo autopsies (Goldman, 2018). This, in turn, reduced the expectations for physicians to order them routinely (Goldman, 2018). Other barriers leading to the decline in autopsies include religious obligations of the families, costs, and lack of rapport between physicians and families (Kelly et al., 2018; Lewis et al., 2018; McPherson et al., 2017; Spierson et al., 2019).

Lastly, a well-documented reason for the declining autopsy rate is that clinicians do not routinely offer autopsies to families (Griffiths et al., 2018). It should be noted that obtaining consent for post-mortem examinations differs from other procedures, as the professional asking for consent is someone other than the one who will perform the procedure (Wood et al., 2021). Consequently, physicians often face barriers to consenting to an autopsy, such as a lack of knowledge about the procedure, a lack of comfort describing the procedure, and a lack of confidence to answer questions from families (Alfsen et al., 2022; Griffiths et al., 2018; Lewis et al., 2017; Reed et al., 2021; Robertson et al., 2021; Wood et al., 2021). These barriers physicians face often lead to families not being asked if they would like an autopsy for their loved ones. Nevertheless, clinicians must possess adequate knowledge and understanding of the procedure to support families in making informed decisions (Wood et al., 2021). The current study aims to address these barriers by improving physicians' comfort level and confidence in seeking consent for autopsies.

Problem Statement

Despite their critical role in medical research, disease monitoring, public health surveillance, and providing closure to grieving families, the number of autopsies has been steadily decreasing (Hoyert, 2023; Algerian, 2022). This decline poses a multifaceted challenge with implications for healthcare quality, research, public health, and the well-being of families

coping with loss. There are many factors have contributed to this decline, including costs, religious obligations of families, lack of rapport between physicians and families, and physicians not routinely offering them (Kelly et al., 2018; Lewis et al., 2018; McPherson et al., 2017; Spierson et al., 2019). In response to these challenges, this study aims to enhance physicians' comfort levels and confidence in obtaining autopsy consent, increasing the likelihood that physicians feel equipped to offer them routinely.

Purpose

The primary objective of this study was to evaluate the effectiveness of a brief educational video in enhancing physicians' comfort and confidence in initiating discussions regarding the option of autopsies with patients' families. The educational video incorporated evidence-based recommendations from existing literature on autopsies, optimal approaches for obtaining consent from families, and insights into the significant benefits of completing an autopsy. Additionally, this study aimed to improve physicians' understanding of the autopsy procedure by presenting information in a clear, non-graphic manner. By providing accessible and comprehensive insights, we aimed to empower physicians with the knowledge and skills necessary for engaging in these important conversations with families to contribute to improved patient care and informed decision-making.

Hypothesis

This author hypothesizes that an educational video about autopsies, how best to approach families when consenting for autopsies, the benefits of an autopsy, and how to explain the procedure in non-graphic and respectful language will increase physicians' report of confidence and comfort level in offering autopsies and knowledge about the procedure.

Review of Evidence

Barriers to autopsies

When families are asked if they would like an autopsy for their loved one, healthcare providers have significant influence over families' decisions, which can either facilitate or impede the process (Lewis et al., 2019b). A key barrier to the initiation of autopsies, as extensively documented in the literature, is the discomfort and lack of confidence of physicians when obtaining consent from grieving families (Lewis et al., 2017; Reed et al., 2021; Robertson et al., 2021). Many other barriers exist, as well, such as religious obligations, financial considerations, and the absence of a strong rapport between physicians and families (Kelly et al., 2018; Lewis et al., 2018; McPherson et al., 2017; Spierson et al., 2019). These obstacles collectively underscore the complexity of the decision-making process surrounding autopsies and the need to address the multifaceted barriers involved.

In Islam and Judaism, for example, cutting and removing organs, tissues, and fluids from the deceased is forbidden (Lewis et al., 2018). Many Muslims and Jews also believe that the body should be buried as soon as possible, which does not allow time for a complete autopsy (Auger et al., 2018; Lewis et al., 2018). In addition, some families may have a different philosophy on what the soul may experience after someone has died or be concerned about the procedure's invasiveness or potential to cause more harm to the body (Griffiths et al., 2018; Lewis et al., 2017; Lewis et al., 2018; Lewis et al., 2019b; Spierson et al., 2019). Depending on the families' philosophy of death, burial, and the afterlife, an autopsy may not be something they desire (Lewis et al., 2018). Minimally invasive autopsy alternatives may have a higher acceptance rate, but often, families are also not offered this option (Ben-Sasi et al., 2013; Lewis et al., 2018b).

Many cost-related factors also may prevent autopsies from being ordered and completed (McPherson et al., 2017). Because autopsies are not covered by private insurance, Medicaid, or Medicare, non-legally mandated autopsies can cost families anywhere from \$2,000 to \$5,000 in Tennessee (ETSU, n.d.; Ruan et al., 2016; Wadhwani, 2017). On a systems level, hospital management may disincentivize some providers from ordering an autopsy due to the high cost to the institution (McPherson et al., 2017). In addition, the number of pathologists in the U.S. declined by 17% from 2007 to 2017 (Lundberg, 2019), which may have contributed to a hospital culture where autopsies are not encouraged or routinely offered (Bundock & Corey, 2019; McPherson et al., 2017).

Lastly, a perceived lack of rapport between physicians and families has been reported as a common barrier that physicians face, likely leading to the lack of confidence and comfort to have the conversation during a distressing time (Ekanem & Vhritherhire, 2015; Lewis et al., 2017; Lewis et al., 2019; Reed et al., 2021; Scarl et al., 2022; Spierson et al., 2019). In one survey, nurses felt that they should be the ones to ask for consent due to the rapport gained with the families but felt like they needed to have the appropriate training to do so (Reed et al., 2021). Other literature has suggested that nurses, who often serve as the primary and most enduring point of contact with patients, can be beneficial to include in the conversation—a topic to be further explored in subsequent discussion (Mjornheim et al., 2015; Spierson et al., 2019).

Suggestions on the autopsy conversation

Once a physician has decided there is a need for an autopsy, there is still an issue of how to approach the conversation, how to provide support, and what details of the procedure to discuss with family members. The conversation about the autopsy with patients' families has been described as a meaningful conversation that clinicians should perform with great care and

sensitivity (Fjærestad et al., 2020; Griffiths et al., 2018; Lewis et al., 2019b; McPherson et al., 2017; Robertson et al., 2021; Wiener et al., 2014). However, physicians' lack of rapport with families can hinder the conversation (Griffiths et al., 2018; Spierson et al., 2019). If there is a lack of rapport between the physician and the patient's family, the literature suggests including other healthcare team members who traditionally spend more direct time with families to offer emotional support (Griffiths et al., 2018; Mjornheim et al., 2015; Spierson et al., 2019). In addition to nurses, chaplains or psychologists may also be beneficial (Griffiths et al., 2018; Lewis et al., 2019b; Mjornheim et al., 2015; Robertson et al., 2021).

During the conversation describing the autopsy, using words such as “dignity” and “respect” can help reinforce the notion that the autopsy is another part of the patient's journey where they will be treated with care (Lewis et al., 2019b; Scarl et al., 2022; Zehm et al., 2020). It can also be reassuring to families if the clinician names the pathologist performing the autopsy, reiterating that they are another physician who is part of the patient's medical team (Lewis et al., 2019b).

If a family agrees to hear more about the procedure, the physician can provide an explanation using clear and straightforward terminology and without graphic details to show sensitivity to grieving families (Zehm et al., 2020). For example, physicians can describe the autopsy as a standardized medical procedure that examines the body internally and externally to provide helpful information about the cause of death (Zehm et al., 2020). Because some families may have a fear of their loved one being disfigured, it is also important to educate families that the typical Y-shaped incision on the chest would likely not be seen under a shirt if the family chooses to hold a viewing or open-casket funeral (Lewis et al., 2019; Scarl et al., 2022; Zehm et al., 2020).

Other studies have shown that providing written materials for the family to read during the conversation or to take home can benefit some families (Lewis et al., 2019b; Robertson et al., 2021; Wiener et al., 2014). If material is given to the families, it should be delivered at a Grade 8 readability or less (Robertson et al., 2021). Another strategy is to discuss the options for a post-mortem examination with the family and then give them privacy to decide (Lewis et al., 2019b; McPherson et al., 2017).

If families have questions, physicians can answer neutrally instead of sharing their opinions to avoid families feeling pressured to make a particular decision (Lewis et al., 2019b). Instead, physicians can inform families about the possibility that their family member's autopsy could help other patients with the same diagnosis in the future (Griffiths et al., 2018; Lewis et al., 2017; Robertson et al., 2021; Sullivan et al., 2019; Zehm et al., 2020). In summary, discussing autopsy options with families requires knowledge about the procedure and a level of comfort and confidence to discuss the procedure with families. Involving healthcare team members with closer connections, using dignifying language, and providing clear, empathetic information can facilitate understanding and informed decision-making, respecting the delicate nature of the conversation. (Lewis et al., 2019b).

Minimally invasive autopsy alternatives

Minimally invasive post-mortem examinations have been found to have higher parental consent rates than traditional autopsies and can be an alternative that clinicians offer to families to increase consent rates (Griffiths et al., 2018; Lewis et al., 2017a). Examples of minimally invasive postmortem examinations include magnetic resonance imaging (MRI), computed tomography (CT), the minimally invasive autopsy with laparoscopically assisted sampling (MinImAL) procedure, and the minimally invasive tissue sampling (MITS procedure) (Griffiths

et al., 2018). Postmortem cross-sectional imaging, such as MRI and CT, can still provide excellent anatomical information but does not require an incision, which some families may find important (Griffiths et al., 2018). Additionally, the MinImAL procedure, also known as minimally invasive tissue sampling, is a needle-based approach that collects samples from major organs without opening the body (Rakislova et al., 2021). Although an incision is still required in the MinImAL procedure, it is significantly smaller than a standard autopsy incision (Hutchinson et al., 2019). The MinImAL method is also less expensive than a traditional autopsy, which may be an incentive for some families or institutions (Hutchinson et al., 2019).

Another option is the MITS procedure (Munguambe et al., 2021; Tanko et al., 2021). The MITS procedure includes sampling six tissue cores from each organ with a biopsy needle for microscopic examination (Munguambe et al., 2021; Tanko et al., 2021). The MITS procedure was found to be less time-consuming for pathologists and less expensive to perform than a traditional autopsy (Tanko et al., 2021). In addition, the MITS procedure had a higher consent rate among families and clinicians than traditional autopsies (Munguambe et al., 2021). As mentioned, minimally invasive options can be beneficial for clinicians to offer to families who prefer not to do a traditional autopsy due to religious or cultural beliefs (Lewis et al., 2018). Regardless, researchers found that non-invasive imaging was preferred by some families even after receiving education on the benefits of a standard autopsy (Lewis et al., 2019a).

The reasons for the decline of autopsies are complex, sensitive, and multifactorial. Many barriers to obtaining autopsy consent exist, including physicians' and families' religious, philosophical, and cultural beliefs. These barriers have led to decreased autopsy rates, and missed opportunities for expanding medical knowledge, aiding with families' grief, and improving future patient outcomes (Lewis et al., 2017; Lewis et al., 2018). To increase autopsy

rates, physicians can approach the topic with sensitivity and compassion and provide informative education without graphic details (Zehm et al., 2020). To assist with the conversation, physicians can involve other staff, such as nurses or chaplains, to give families additional emotional support in grieving (Lewis et al., 2019b). Physicians can also offer minimally invasive autopsy alternatives to patients' families as an option to consider and then give privacy to decide (Lewis et al., 2018).

To be able to approach families with the option of an autopsy, physicians must first know what the procedure entails and the best techniques on how to explain it. Without knowledge about the procedure and its benefits, a physician cannot fully explain the option to families or answer questions, leaving families without a fair opportunity to know the official cause of death for their loved ones. Therefore, this study aims to determine if a brief educational video can increase physicians' confidence and comfort in discussing an autopsy and their knowledge of what occurs during the procedure.

Theoretical Model

The Health Belief Model (HBM) has been a frequently used theory in healthcare since its inception in the 1950s, often used for analyzing patient behavior change (Sharma, 2022). However, its application has also been adapted to evaluating behavior change in healthcare workers, which is how it was used in this study (Cheung et al., 2019). The HBM encompasses six vital constructs that have the potential to influence behavioral change, including perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Sharma, 2022). In this study, the potential behavior change being examined is the act of offering an autopsy to patients' families. Each of the six constructions will be explained in relation to the potential behavior change. See Figure 1.

Perceived susceptibility is an individual's perception of the likelihood of adverse outcomes if a specific behavior is not adopted (Sharma, 2022). In this study, perceived susceptibility is the physicians' perception of the potential negative impacts on patients' families or healthcare knowledge if autopsies are not offered. Similarly, perceived severity involves an individual's subjective understanding of the potential harm or seriousness of the behavior if it is not done (Sharma, 2022). In this study, the consequences entail the lack of closure or information about the patient's death for the family and the missed opportunity to contribute to medical research and future patient care. In essence, perceived susceptibility focuses on the likelihood of adverse outcomes, while perceived severity emphasizes the subjective understanding of the seriousness or harm associated with not doing the behavior.

Next, perceived benefits are the individual's comprehension of the advantages associated with a specific action (Sharma, 2022). To enhance the participants' perceived benefits, the educational video emphasizes communicating the potential insights into disease processes, the provision of closure to families, and possibly enhancing future health outcomes to amplify perceived benefits. Perceived barriers represent the individual's recognition of obstacles or reasons that may hinder the adoption of the behavior (Sharma, 2022). The literature suggests that physicians often encounter challenges in describing the autopsy procedure, experiencing discomfort in discussing it and needing a more comprehensive awareness of the benefits (Sharma, 2022). Due to these factors, the act of offering an autopsy can be a daunting task.

Furthermore, cues to action are facilitators, prompting individuals to perform the specific action (Sharma, 2022). In this study, the intervention aims to educate physicians on the benefits of the autopsy, what occurs during the procedure, and how to effectively communicate the procedure in a sensitive and non-graphic manner. Notably, when perceived susceptibility or

severity is low, achieving effective cues to action becomes more challenging (Sharma, 2022). Ideally, the education from the video will act as a facilitator for physicians to offer autopsies because they will feel more confident and comfortable with the topic.

Lastly, self-efficacy plays a pivotal role, representing an individual's confidence in their ability to carry out a specific behavior (Sharma, 2022). Within this study, the evaluation of participants centers on assessing their comfort level and confidence in offering autopsies. To reduce stress about performing the behavior, participants often benefit from being given practical steps (Sharma, 2022). Notably, there is an inverse relationship between self-efficacy and perceived barriers, underscoring the importance of addressing these facilitators and barriers to enhance self-efficacy (Sharma, 2022).

The HBM model was used to understand the intricate relationships between physicians' attitudes, behaviors, and communication practices regarding discussions on autopsies with patient families. This researcher hypothesizes that introducing an educational video encompassing a comprehensive analysis of the benefits of autopsies, recommendations for communication, and an overview of the procedure will significantly increase physicians' confidence and comfort levels in initiating an autopsy. Using the HBM framework, this project aims to provide insights that can lead to a more compassionate and informed approach to the autopsy discussion.

Project Design

Clinical Setting

Davidson County was selected as the study location due to its alignment with the project's stakeholders, who work for the Davidson County Health Department and are members of Davidson county's Child and Infant Death Review team. The survey and educational

intervention were administered online via email to physicians practicing in Davidson County, Tennessee. The educational video did not include explicit or graphic content, ensuring it could be conveniently completed at any location and at the participants' preferred times.

Project Population

The target population consisted of physicians practicing in Davidson County who provide healthcare to adults, children, or both. Eligibility criteria for participation included being a practicing physician in Davidson County who expressed willingness to participate in the study. While the primary stakeholders of this project review child deaths in Davidson County, the eligibility criteria were expanded to include physicians caring for adults, as well. This expansion was motivated by the need to recruit a larger sample size and the potential to compare responses between physicians caring for adults and those caring for children.

Exclusion criteria included physicians primarily working outside of Davidson County. Additionally, physicians employed as medical examiners or pathologists were excluded, as their roles might introduce bias related to autopsies. Obstetricians were also excluded, given the distinct criteria governing the requirement for autopsies in infants. A nonprobability sampling method, referred to as snowball or referral sampling, was employed to maximize the sample size. This sampling approach is particularly suitable when studying specific social groups that are challenging to access (Crosby & Salazar, 2021). The sampling process was initiated with a "seed," represented in this context by the initial thirty physicians personally known to the author. This seed group was emailed the survey and asked to forward it to their colleagues (Crosby & Salazar, 2021).

Data Collection Instruments

Physician confidence and comfort level were measured using a survey developed by the author. A total of 32 questions were asked. The survey questions were adapted from a survey entitled “Professionals’ Practices and Views Regarding Neonatal Postmortem: Can We Improve Consent Rates by Improving Training?” The study's primary author, Dr. Hannah Spierson, granted permission to this author to adapt the survey questions for this project. Dr. Spierson also reviewed and approved the changes made to the survey for this study. See Appendix A.

Spierson et al. designed the survey to inquire about physicians' perspectives in six key areas: how they request consent for autopsies, their educational background, utilization of support staff during conversations, perceived barriers to offering autopsies, knowledge about autopsies, and personal beliefs regarding autopsies (2019). Spierson’s survey was developed in collaboration with parents who had experienced the loss of a child (Spierson et al., 2019). To establish reliability, 10 respondents participated in oral interviews following the completion of the survey to deepen the authors’ understanding of their experiences (Spierson et al., 2019). For this study, the survey was adapted to include participants who also care for adults.

The survey begins by asking if the participants agree to participate and if they are practicing physicians caring for patients in Davidson County. Next, the participants were asked about their confidence and comfort with consenting for autopsies on a Likert scale. Participants were also asked if they knew what occurred in the autopsy procedure. See Appendix A.

Next, the five-minute educational video was automatically shown without participants having to click on an external link. After the video, participants were asked again about their confidence and comfort level with consenting for autopsies. They were also asked again if they knew what occurred during the procedure to measure if their knowledge level had changed. Lastly, participants were asked five demographic questions. The demographic questions asked

the participants which patient population they cared for, which setting they worked in, how long they had been a physician, and if they identified with a religion. In total, answering the survey questions and viewing the video was completed by participants in 14 minutes, on average. See Appendix A.

Data Collection Process

The survey was emailed to a total of 300 physicians between September 26, 2023, and October 23rd, 2023. In the email, physicians were asked to please forward the survey to colleagues who may have been interested. The project's stakeholders were also asked to forward the survey to their colleagues. The survey remained accessible until November 1, 2023. Data from the survey was stored on the Qualtrics server until all responses were completed, and then the data was downloaded on this author's password-protected and private computer.

Risks and Benefits to Human Subjects

The Institutional Review Board of the author's university granted this study an exempt status. Informed consent was secured from all participants before they completed the survey. Physicians were afforded the flexibility to complete the survey at their convenience. Responses to the survey remained anonymous, and no personal identifiers were collected.

Participation in the study offered several benefits to the physicians involved. By engaging in the survey questions and viewing the educational video, participants were given the opportunity to reflect on their practices and beliefs surrounding offering autopsies. In addition, participants were provided with evidence-based practices for navigating the sensitive conversation with patients' families. Additionally, the physicians were informed that their participation could lead to a deeper understanding of the factors influencing autopsy rates, ultimately improving physician training in discussing an autopsy to improve rates.

Results

Participant Demographics

A total of 37 physicians participated in the survey ($N = 37$). Although there was a total of 37 participants who contributed to the survey, not all participants answered every question. Of the 35 respondents who answered the question, the most frequently reported level of experience was 10-15 years ($n = 10$, 28.57%). Of the 34 respondents who answered the question, a slight majority reported mainly caring for adult patients ($n = 17$, 55.88%). Most participants identified as Christian ($n = 20$, 58.82%). Of the 33 respondents who answered the question, the most frequently reported specialization of participants was critical or intensive care ($n = 11$, 33.33%) or palliative care ($n = 8$, 24.24%). Lastly, out of 36 respondents who answered the question, most participants reported they had witnessed an autopsy at some point in their career ($n = 20$, 54.05%). See Table 1.

Quantitative findings

Most participants were either not satisfied (40.00%) or neutral (34.29%) with their previous training in offering autopsies to families (Table 2). Of 31 respondents, the majority (87.10%) reported giving verbal information to families (Table 4). The majority (54.84%) were unsure of what educational material their hospital had (Table 5). In addition, most participants (66.67%) reported that they did not bring up the cost to families because they did not know what the cost would be (Table 6).

Most participants (60.00%) reported it was helpful to have nurses present during the autopsy discussion (Table 7 and Figure 1). When asked about barriers, most participants (77.78%) reported the emotional distress of the families (Table 8 and Figure 2).

Many participants (44.44%) disagreed that autopsies are now less valuable due to advances in medical technology. Thirteen participants (35.14%) agreed that minimally invasive autopsies are an acceptable alternative to traditional autopsies. In comparison, twenty participants (55.56%) neither agreed nor disagreed that minimally invasive autopsies have higher consent rates among families. Lastly, fourteen participants (38.89%) neither agreed nor disagreed that an autopsy would discover new significant information, and fourteen (38.89%) agreed that an autopsy would find new significant information (Table 9).

Pre-intervention vs. post-intervention findings

The Wilcoxon signed-rank test was used to evaluate the pre-intervention and post-intervention survey findings. The mean rank and range statistics were used for summarizing variables, as the Wilcoxon test assesses the data rankings rather than the data itself. See Table 10.

Six participants reported an increase in their confidence level in answering questions from family members after watching the educational video. Six participants also reported a decrease in their confidence level. Twenty-three participants reported that their confidence level remained the same. The mean rank for both the pre-survey and post-survey was 1.50. The range for the pre-survey was 2-5 and 3-5 for the post-survey. Therefore, the change in confidence level between the pre-survey and post-survey was not statistically significant ($Z = 0.00$, $p = 1$, $r = 0.00$).

Twenty-four participants reported increased comfort levels in describing the procedure after watching the video, while two reported a negative difference. The mean rank for the pre-survey was 1.19, and the mean rank for the post-survey was 1.81. The range for the pre-survey

was 1-5 and 3-5 for the post-survey. Participants' comfort level significantly increased from the pre-survey to the post-survey ($Z = 4.21, p < .001, r = 0.71$).

Fourteen participants reported increased knowledge of what occurs during the autopsy procedure after watching the educational video. The mean rank for the pre-survey was 1.33, and the mean rank for the post-survey was 1.67. The range for the pre-survey was 1-3 and 2-3 for the post-survey. The participants' knowledge level significantly increased from the pre-survey to the post-survey ($Z = 3.12, p = .002, r = 0.53$).

Qualitative Findings

All participants were given the option to write additional comments on four of the survey questions. A total of 22 comments were made. Five comments were about delegating the autopsy conversation to another team member. One participant wrote "Beside RN often asks about autopsy at time of death." Another participant wrote, "Usually, our residents or APPs do this." Four participants made recommendations on how to approach the autopsy conversation and two participants made comments about cost. Lastly, four comments were about barriers they experienced. For example, one participant wrote, "I prefer to ask about autopsy prior to death, but my biggest barrier to navigate is timing the discussion around family distress/memory making. See Table 11.

Discussion

Quantitative Findings

In this study, the most cited barrier to the autopsy discussion reported by the sample of physicians was the emotional distress of families following the death of a loved one. This was also the most significant barrier in an older study by Hull et al. (2007). Although emotional distress of the families has not been found to be the most significant barrier in more recent

studies, it has still been consistently reported as a common barrier to consenting (Lewis et al., 2017; Scarl et al., 2022; Spierson et al., 2019).

Approximately half of the participants in this study identified religious or cultural beliefs of families as a barrier. This finding is in line with the results of recent surveys by Algerian (2022) and Spierson et al. (2019), although other studies have reported this barrier less frequently (Ben-Sasi et al., 2013; Olowookere et al., 2020; Scarl et al., 2022).

In contrast to previous research, only a minority of participants identified lengthy paperwork as a significant barrier. This discrepancy with studies such as that of French et al. (2020) may be attributed to differences in sample characteristics or institutional practices. Notably, an expert interview with a palliative care nurse practitioner conducted by this author highlighted paperwork as the most significant barrier, indicating potential variations in experiences across healthcare professionals. It could also indicate that the paperwork is being delegated to advanced practice providers or nurses.

A notable finding was the neutral or dissatisfied attitudes towards previous training on discussing autopsies, suggesting a gap in educational preparation. This differs from the results of Spierson et al. (2019), where satisfaction with training was high. This difference could possibly be explained by the participants in Spierson et al.'s study, which took place in the UK (2019). Additionally, inconsistent communication practices were reported by many participants of this study, emphasizing the need for nationally standardized approaches in discussing autopsies with families.

Regarding educational resources, approximately half of the participants were uncertain about the materials offered by their hospitals, reflecting a need for improved accessibility and awareness of available resources. These findings are consistent with the surveys of Spierson et

al. (2019) and Wood et al. (2021). Similarly, due to uncertainty, most participants did not address the cost with families, highlighting the importance of transparency and providing comprehensive information to facilitate informed decision-making.

Participants predominantly used verbal communication to discuss autopsies, consistent with previous findings (Spierson et al., 2019). However, this differed from studies where written materials were more commonly provided (Wood et al., 2021). Such differences likely stem from institutional policies and resource availability. This discrepancy most likely reflects individual hospitals' policies and available resources.

Participant's beliefs on minimally invasive autopsy alternatives were varied. When asked if they believed minimally invasive autopsies were an acceptable alternative, an equal number of participants disagreed, were neutral, and agreed. Most participants agreed or were neutral when asked if minimally invasive autopsies had a higher consent rate amongst families. This finding was surprising, as minimally invasive autopsies have been found to be significantly more acceptable and have higher consent rates in multiple studies (Ben-Sasi et al., 2013; Lewis et al., 2018a; Lewis et al., 2018b; Lewis et al., 2019a; Munguambel et al., 2021).

The findings related to numerous barriers underscore the complex dynamics involved in these conversations. The many participants who reported that nurses, chaplains, and bereavement counselors were helpful to include in the conversation also highlights the benefit of a team-based, multidisciplinary approach to a challenging task. These aspects should be considered when developing interventions to improve communication strategies in the future. In addition, future studies may benefit from asking more questions about facilitators in the conversation.

Pre-intervention vs. post-intervention findings

Many social and behavioral psychology theories support the importance of confidence in behavior change (Lucero & Chen, 2020). One may gain knowledge and competence about a topic, but without confidence in the ability to perform the behavior, the behavior change may not occur (Lucero & Chen, 2020). In this study, most participants reported that they were very confident in answering questions about autopsies from patients' family members in the pre-intervention survey. These findings align with similar studies (Spierson et al., 2019; Wood et al., 2021). When asked the same question about confidence level after viewing the educational video, most participants reported the same level of confidence. The number of participants reporting an increase in confidence was equal to the number reporting a decrease in confidence following the educational intervention.

An equal number of participants also reported a decrease in confidence levels. No other studies to date have reassessed confidence levels in discussing autopsies after an educational intervention, making it impossible to compare and know if this finding is out of the ordinary. There are many possibilities of why this unexpected finding may have occurred. Firstly, it raises the question of whether the educational video was effective in describing the procedure, although the results of the comfort level and knowledge level questions would point to this not being the case. It could also suggest that confidence is a multifaceted construct influenced by various factors such as experience, background, and personal opinions of autopsies and that education would not necessarily change it. It could also identify a flaw in how the question was phrased, as it did not directly ask if their confidence changed from watching the video. Lastly, it could simply indicate that the participants already felt confident in answering questions from families and that an educational video would not change their beliefs, as the pre-test confidence score was

4.14 out of a possible 5. By contrast, the mean pre-test comfort level score was 3.26 out of a possible 5.

In contrast to the unexpected findings related to confidence levels, the study revealed significant positive outcomes in terms of increased comfort levels in describing the autopsy procedure and enhanced knowledge among participants. The significant increase in comfort levels suggests that the educational intervention effectively taught how to describe the procedure in a non-graphic and sensitive way that was appropriate for families. This finding was encouraging, as physicians' ability to convey information clearly and empathetically ensures that families are well-informed and empowered to make decisions.

The significant increase in knowledge about the autopsy procedure further supports the hypothesis that targeted educational interventions can positively impact physicians' understanding of the subject matter. This positive outcome may suggest that even brief educational interventions can significantly impact knowledge levels.

Qualitative Findings

Qualitative comments provided additional insights, particularly regarding the delegation of autopsy discussions to other team members. The findings suggested a need for more explicit roles and responsibilities within healthcare teams to address communication challenges effectively. This was consistent with the expert interview with the palliative care nurse practitioner, who informed this author that the task of consenting is often delegated to nurse practitioners or medical residents. In addition, the comments regarding communication strategies and the discussion of autopsy costs point to this part of the conversation needing additional attention in future interventions. Exploring effective communication strategies and addressing

costs-related concerns could contribute to physicians feeling more prepared to have more comprehensive and patient-centered autopsy discussions.

Strengths and Limitations

The potential positive impact of physicians participating in the study included improved end-of-life discussions and experiences for patients' families, which could potentially increase autopsy rates and ultimately improve diagnostics and treatments for patients in the future. In addition, the professional quality of the educational video this author created in an instructional recording studio using Light Board technology was a strength of the project. Lastly, the survey questions could be considered a strength, as they were created by experts in the field in collaboration with patients' families (Spierson et al., 2019).

The first limitation was the lack of diversity among the participants due to the snowball sampling method used. Most participants had over five years of experience, worked in intensive or critical care, worked for one hospital, and identified as Christian. It is not evident if these demographics played a significant role in the findings, but it is important to note that the sample was not widely diverse. Additionally, the survey was sent to 300 physicians, while only 37 responses were recorded.

In addition, an expert interview with a palliative care nurse practitioner revealed that nurse practitioners and nurses often have the autopsy conversation with families instead of physicians. Therefore, including nurse practitioners and nurses within the target population would be essential in future studies. Similarly, a future study may benefit from including nurses as well, as they often have more established rapport with families and can be beneficial to both the provider initiating the conversation and the families (Mjörnheim et al., 2015; Reed et al., 2021; Rosenbaum et al., 2000; Spierson et al., 2019). Lastly, a weakness was the snowball

sampling method, which is not random and makes the results less generalizable (Crosby & Salazar, 2021).

Conclusion

In conclusion, this study sheds light on the current state of Davidson County physicians' confidence, comfort level, and knowledge of discussing autopsies, emphasizing the need for targeted interventions to improve communication practices. While the lack of improvement in confidence levels was unexpected, the positive outcomes in comfort and knowledge levels highlighted the potential of educational interventions to positively impact physicians' preparedness for discussing autopsies.

Asking a family about an autopsy is a complex and challenging conversation to have. However, autopsies must be offered to allow families the choice to have more information about their family member's cause of death and to ensure medical data continues to be collected to improve future patient outcomes. Enhancing communication surrounding autopsies is crucial for ensuring that families are well-informed, empowered, and supported during challenging times. By addressing the identified gaps and building on the positive outcomes of the intervention, healthcare professionals can contribute to a more compassionate and transparent approach to autopsy discussions.

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Appendix

Table 1
Demographic Data

Demographic Variable	<i>n</i>	%
Patient Population (<i>N</i> = 34)		
Mainly adults	17	55.88
Mainly pediatrics	13	38.24
Both adults and pediatrics	2	5.88
Years of Experience (<i>N</i> = 35)		
0-5	2	5.71
5-10	8	22.86
10-15	10	28.67
15-20	7	20
20+	8	22.86
Area of Practice (<i>N</i> = 33)		
Intensive or Critical care	11	33.33
Palliative Care	8	24.24
Emergency Medicine	4	12.12
Internal Medicine	4	12.12
Cardiology	2	6.06
Neurology	2	6.06
Oncology	2	6.06
Religion (<i>N</i> = 34)		
Christianity	20	58.82
Judaism	4	11.76
Hinduism	3	8.82
Islam	1	2.94
Not affiliated	6	17.65
Viewing of Autopsy (<i>N</i> = 36)		
Yes	20	54.05
No	15	40.54
Could not remember	1	2.70

Note. *N* = 37.

Table 2*Participants' Satisfaction Level of Training for the Autopsy Conversation*

Satisfaction Level	<i>n</i>	%
Extremely Dissatisfied	2	5.71
Dissatisfied	14	40.00
Neutral	12	34.29
Satisfied	4	11.43
Very Satisfied	3	8.57

Note. *N* = 35.**Table 3***Participants' Frequency of Giving Information*

Frequency	<i>n</i>	%
Always	6	16.22
Most of the time	6	16.22
Fifty percent of the time	5	13.51
Sometimes	10	27.03
Never	5	13.51
Never (I delegate to staff)	5	13.51

Note. *N* = 37.**Table 4***Type of Information Provided*

Type of Information	<i>n</i>	%
Verbal	27	87.10
Written	1	3.23
None	3	9.68

Note. *N* = 31.

Table 5*Participants' Satisfaction Level of Educational Materials for Families*

Satisfaction Level	<i>n</i>	%
Extremely Dissatisfied	0	0.00
Dissatisfied	3	9.68
Neutral	0	0.00
Satisfied	3	9.68
Very Satisfied	3	9.68
I am unsure what materials my hospital has	17	54.84
My hospital does not have any educational material	5	16.12

Note. *N* = 31.**Table 6***Participants' Decision to Discuss Cost with Families*

Response	<i>n</i>	%
No, as I do not know the cost for families	24	66.67
No, as autopsies are free at my hospital	11	30.56
Sometimes, if I believe they can afford it	0	0.00
Yes, I inform families of the cost they must pay	1	2.78
Yes, I inform families that I personally will pay	0	0.00

Note. *N* = 36.

Table 7*Helpful Team Members for the Autopsy Conversation*

Response	<i>n</i>	%
Nurse	21	60.00
Chaplain	12	34.28
Bereavement Counselor	12	34.28
Social Worker	11	31.43
Psychologist	1	2.86
None or Unsure	6	17.14

Note. *N* = 35. The percentages do not equal 100% as this was a select all that apply question.

Table 8*Barriers to the Autopsy Conversation*

Response	<i>n</i>	%
Emotional Distress of the Families	28	77.78
Cultural and Religious Beliefs of the Families	20	55.56
Lack of Rapport with Families	6	16.67
Workload of the Staff	5	13.89
Length of Time to Receive a Report	5	13.89
Financial Cost to the Families	5	13.89
Long Paperwork Required	5	13.89
Adverse Publicity from Autopsies in the Media	4	11.11
Lack of a Pathologist Available	1	2.78
No Barriers	1	2.78
Financial Cost for Myself or my Hospital	0	0.00
Lack of Evidence on the Values of Autopsies	0	0.00

Note. *N* = 36. The percentages do not equal 100% as this was a select all that apply question.

Table 9*Participants' Beliefs about Autopsies*

Question Prompt	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%	n	%
Autopsies are less valuable now due to the advances in medical diagnostics.	6	16.22	16	43.24	7	18.92	7	18.92	0	0
Minimally invasive autopsies are an acceptable alternative to a conventional autopsy.	6	16.22	7	18.92	9	24.32	13	35.14	1	2.70
Minimally invasive autopsies have a higher consent rate among families.	0	0	1	2.70	20	54.05	11	29.73	4	10.81
An autopsy will identify significant new information regarding the cause of death.	1	2.70	2	5.41	14	37.84	14	37.84	5	13.51

Note. $N = 36$.**Table 10***Pre-intervention and Post-intervention Results*

Measure	Pre-Intervention		Post-Intervention		Z	p	r
	Mean Rank	Range	Mean Rank	Range			
Confidence	1.50	2-5	1.50	3-5	0.00	1	0.00
Comfort	1.19	1-5	1.81	3-5	4.21	< .001	0.71
Knowledge	1.33	1-3	1.67	2-3	3.12	.002	0.53

Table 11

Participants' Qualitative Survey Responses

Question Prompt	Theme	Quote
How often do you provide families with information, either verbally or in writing, to assist them in making the decision about an autopsy after a patient's death? - If you delegate this to staff, please explain		"All ED deaths are generally discussed with the Medical Examiner's office and assigned autopsy in accordance with established protocols. The majority of ED deaths are unexpected and, hence, often have autopsies performed."
		"Only certain situations warrant the discussion about autopsy."
	Delegation	"Sometimes, my ICU fellow has the discussion instead of me."
	Delegation	"Bedside RN often asks about autopsy at time of death."
When obtaining consent for an autopsy, do you discuss the cost with the family? - Other (Please describe below)	Delegation	"Usually, our residents or APPs do this, although I have personally done autopsy conversations under a research intent."
	Cost	"The decision for autopsy is generally made by the medical examiner in the ER. If a family requests an autopsy when it is not necessarily recommended, I defer questions of cost to someone more familiar with the process."
	Cost	"Yes, I discuss it, but it's free to patients' families at my hospital."
Please provide comments on any aspect of obtaining consent for an autopsy	Education Recommendations	"I usually explain that an autopsy is a way to find out more about what happened to their child. I have explained other potential benefits to some families, but I have found that aside from families who worry about what it will do to the body, most families have a ready answer and feel strongly about it."
	Delegation	"Working in the ED, the decision for autopsy is made by the Medical Examiner (child, unexpected death, suspected foul play), and discussion with the family never occurs. Or if any discussion with the family occurs, it is

done by the charge nurse after discussion with the ME or their representative.”

Barriers

“I was taught how to ask for autopsies when I was a resident. They are INCREDIBLY valuable to explain contributors to death and provide additional knowledge. However, you need to have a QUESTION you are asking the pathologists to answer. I think for me, the barriers are not usually with the patients/families but rather that communication between the treatment team and the autopsy team is less optimized. I also think there is a HUGE value in attending the organ reviews after the autopsy procedure, particularly since I am usually the person calling the family a month later to discuss the results. I also think education about autopsies can be improved...”

Education Recommendations

“There are times when an autopsy can be very helpful for a diagnosis or family to find closure. But often, especially when we are aware of the diagnosis, I counsel families that I do not suspect we will find new information. I try to be very honest and manage expectations.”

“It’s required to ask prior to filling out the report of death at my hospital. so, it theoretically is supposed to be done every time you call a death.”

“Utility is highly variable in my patients.”

Delegation

“I am a palliative care physician and only sometimes discuss autopsy with family. I am comfortable doing so, but sometimes the ICU team handles this role.”

Barriers

“I prefer to ask about autopsy prior to death, but my biggest barrier to navigate is timing the discussion around family distress/memory making.”

		“I think it depends on why the patient died as to whether or not I think the autopsy will provide useful additional information!”
	Barriers	“Usually, obtaining consent after the death of a patient is already a very distressing time for parents, and it is often difficult to have a full and meaningful conversation about the option of an autopsy.”
	Barriers	“In oncology, autopsies of metastatic disease would be very informative for research but limited by funding and protocols that can actually collect and make use of the information.”
Please provide comments/suggestions on any aspect of the educational video	Education Recommendations	“One thing I learned in fellowship was that if a family doesn’t want an autopsy of the whole body, I can offer an area like the abdomen or thorax, but that area is more useful diagnostically than an organ because nearby vessels and other structures can then be included. This may be helpful in the video as well.
	Education Recommendations	“Suggestions on disclosing to family that they may not receive a diagnosis and length of results.”

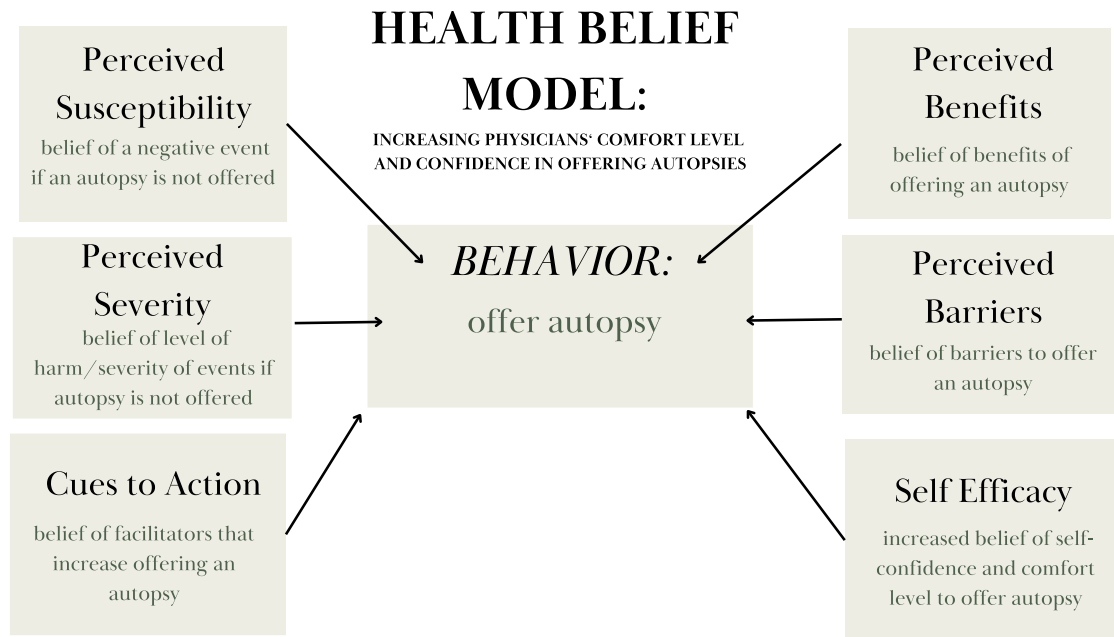
Figure 1

Figure 2

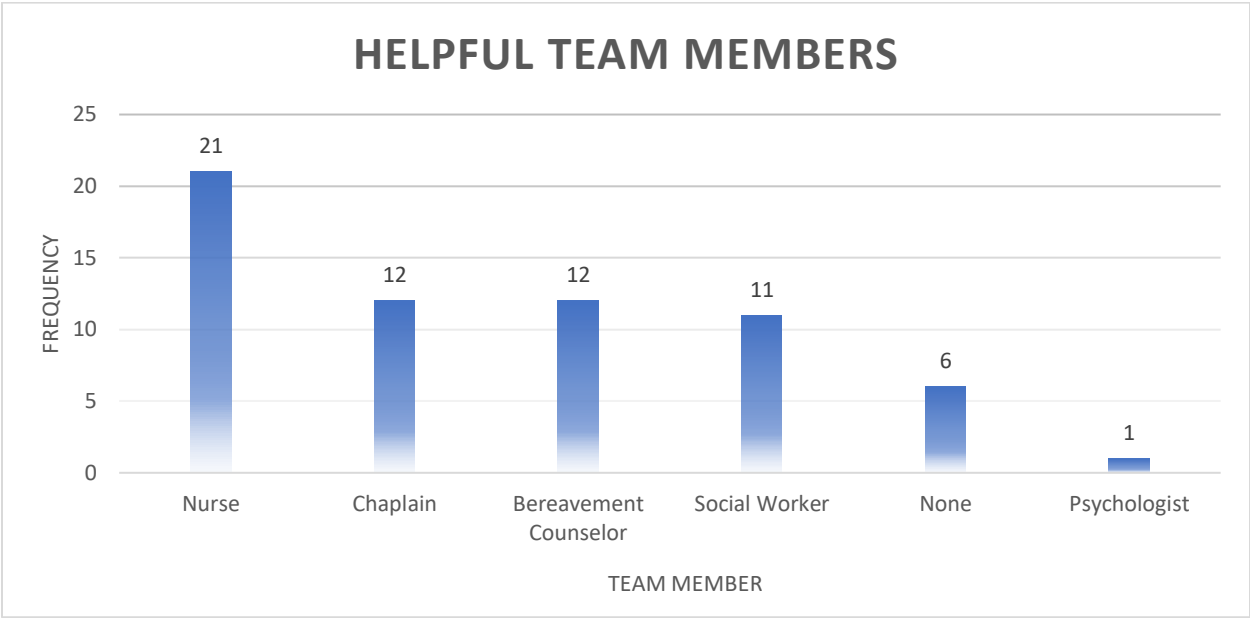
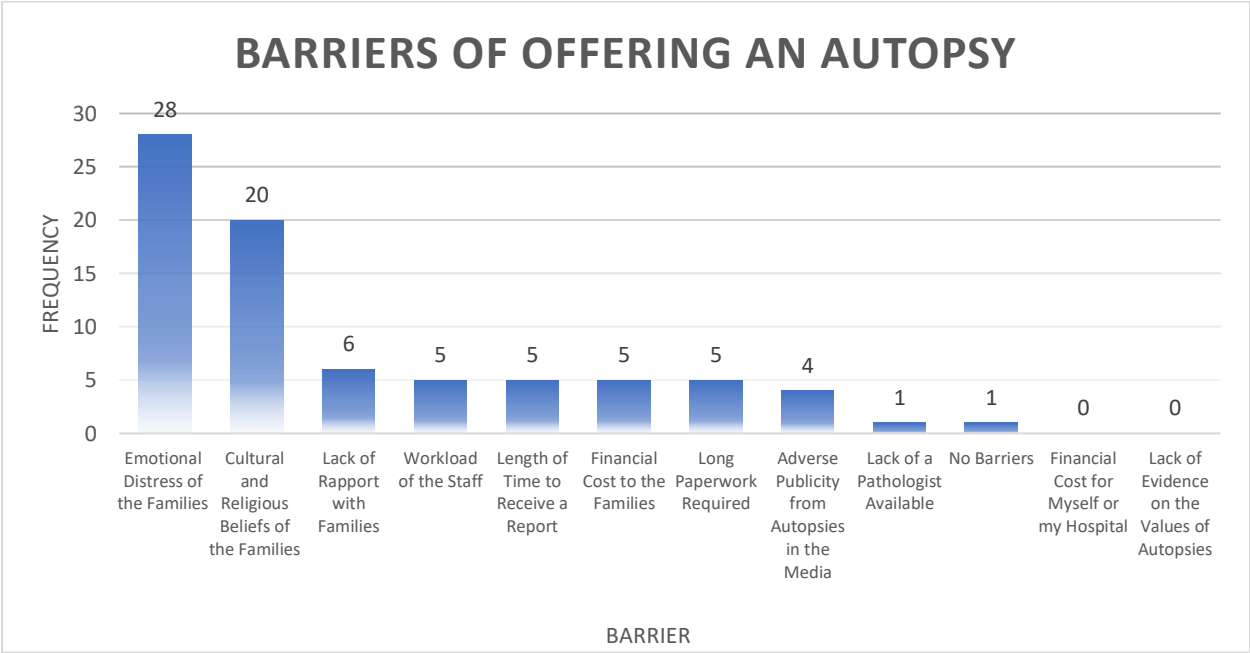


Figure 3



Appendix A

Thank you for your interest in our study, "The Impact of an Educational Video on Physician Confidence and Comfort Level in Discussing Autopsies."

Principal Investigator: Joy Owings, RN, DNP student, Graduate School of Nursing Faculty. Advisor: Dr. Laura Gray, RN, Ph.D., Graduate School of Nursing.

You are invited to participate in a research study about whether a brief educational video increases physicians' confidence and comfort level in discussing autopsies with families after a patient's death.

Participants can benefit from having an opportunity to reflect on their knowledge, opinions, and beliefs about autopsies. Participants can also benefit from the educational video, which outlines the autopsy procedure steps and gives suggestions on how to approach the topic.

The survey will take you less than ten minutes to complete. Please know you can choose to stop participating at any time during the survey.

We will protect your privacy by recording all responses anonymously and storing data on a private, password-protected computer. Information collected may be shared with other researchers involved in this project. We will not share any information that could identify you with others outside the research team. If the results of this study are published or presented, any identifiable information will not be used.

If you have questions about this research study, please contact Joy Owings at joy.owings@bruins.belmont.edu or Dr. Laura Gray at laura.gray@belmont.edu.

If you have questions about your rights as a research participant or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact David Gregory, PharmD, Provost and Executive Vice President for Academic Excellence, (615) 460-6400 or david.gregory@belmont.edu.

- ☐ I agree to participate in this study
- ☐ I do not agree to participate in this study

0% 100%



Are you a practicing physician that cares for patients in Davidson County?

- ☐ Yes
- ☐ No

0% 100%



How confident do you feel about discussing an autopsy with a patient's family?

- ☐ Very confident
- ☐ Confident
- ☐ Neither confident nor unconfident
- ☐ Not confident
- ☐ Extremely not confident
-

How comfortable do you feel answering questions from families about the autopsy procedure?

- ☐ Extremely uncomfortable
- ☐ Somewhat uncomfortable
- ☐ Neither comfortable nor uncomfortable
- ☐ Somewhat comfortable
- ☐ Extremely comfortable
-

How often do you provide families with information, either verbally or in writing, to assist them in making the decision about an autopsy after a patient's death?

- ☐ Always
- ☐ Most of the time
- ☐ About half the time
- ☐ Sometimes
- ☐ Never
- ☐ If you delegate this to staff, please explain below

0%  100%



What kind of educational information do you provide to families about the autopsy?

- ☐ I give verbal education
 - ☐ I give them written material
 - ☐ I do not provide any information
-

Please indicate your satisfaction with the autopsy education materials available at your hospital:

- ☐ Very satisfied
 - ☐ Satisfied
 - ☐ Not satisfied
 - ☐ My hospital does not have any educational materials
 - ☐ I am not sure what educational materials my hospital has
-

Please indicate your satisfaction with the training you have received on offering an autopsy to a patient's family:

- ☐ Very satisfied
 - ☐ Satisfied
 - ☐ Neither satisfied or dissatisfied
 - ☐ Not satisfied
 - ☐ Extremely dissatisfied
-

When discussing the option of an autopsy, what other team members do you think are helpful to be present?

- ☐ Nurse
- ☐ Chaplain
- ☐ Bereavement counselor
- ☐ Social worker
- ☐ Psychologist
- ☐ None
- ☐ Other (Please describe below)

When obtaining consent for an autopsy, do you discuss the cost with the family?

- ☐ No, as I do not know the cost for the families
- ☐ No, as autopsies are free at my hospital
- ☐ Sometimes, as I only offer it if I believe they can afford it
- ☐ Yes, I inform the families of the cost they will pay
- ☐ Yes, I inform the families that I personally will pay
- ☐ Other (Please describe below)

Select the barriers you experience when obtaining autopsy consent from families:

- ☐ Lack of rapport with families
- ☐ The emotional distress of the families
- ☐ The workload of the staff
- ☐ The length of time it takes to receive a report on the findings
- ☐ The financial cost for the families
- ☐ The financial cost to me or my institution
- ☐ The lack of evidence on the value of autopsies
- ☐ Cultural and religious beliefs of the families
- ☐ Adverse publicity regarding autopsies in the media
- ☐ The lack of a pathologist available to do the autopsy
- ☐ The long paperwork required
- ☐ Other (Please describe below)

Have you ever witnessed an autopsy?

- ☐ No
- ☐ I can't remember
- ☐ Yes

Do you know what happens during the autopsy procedure?

- ☐ Yes
- ☐ I know a few things
- ☐ No

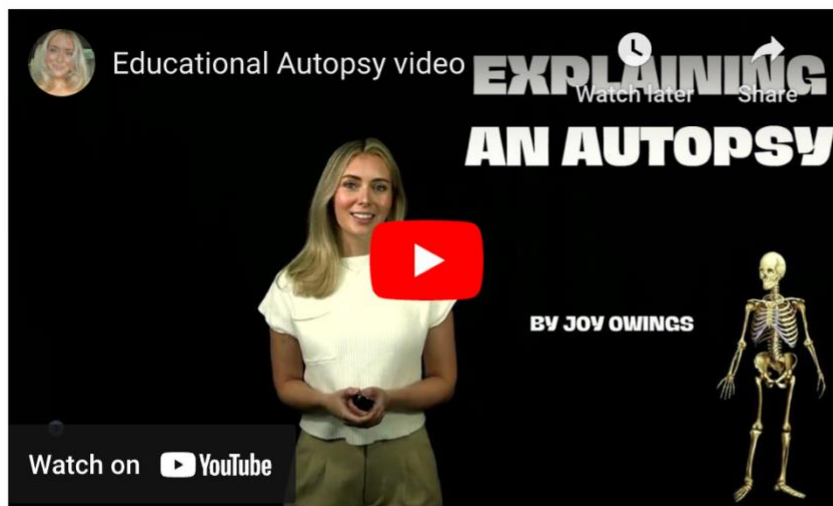
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Please rate your level of agreement for the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Disagree	Strongly disagree
Autopsies are less valuable now due to the advances in medical diagnostics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimally-invasive autopsies (MRI scan, genetics, or metabolic testing with laparoscopic biopsies) are an acceptable alternative to a conventional autopsy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Minimally-invasive autopsies have a higher consent rate among families than conventional autopsies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An autopsy will identify significant new information regarding the cause of death.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide comments on any aspect of obtaining consent for an autopsy:



0%  100%



How confident do you feel about discussing an autopsy with a patient's family?

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- ☐ Neither confident nor unconfident
- ☐ Not confident
- ☐ Extremely not confident
-

How comfortable do you feel answering questions from families about the autopsy procedure?

- ☐ Extremely comfortable
- ☐ Somewhat comfortable
- ☐ Neither comfortable nor uncomfortable
- ☐ Somewhat uncomfortable
- ☐ Extremely uncomfortable
-

Do you know what occurs during the autopsy procedure?

- ☐ Yes
- ☐ I know a few things
- ☐ No
-

Please provide comments/suggestions on any aspect of the educational video:

0%  100%



Do you mainly take care of pediatric or adult patients?

- ☐ I mainly care for pediatric patients
- ☐ I take care of both pediatric and adult patients
- ☐ I mainly care for adult patients
- ☐ I am an OBGYN, medical examiner, pathologist, or work in a non-clinical setting
-

How long have you been a physician?

- ☐ 0-5 years
- ☐ 5-10 years
- ☐ 10-15 years
- ☐ 15-20 years
- ☐ 20+ years
-

Which hospital system do you work for?

- ☐ Vanderbilt
- ☐ HCA/Tristar/Centennial
- ☐ Ascension/St. Thomas
- ☐ Meharry Medical Group
- ☐ Other (Please describe below)

0%  100%



What is your medical specialty?

- ☐ Emergency medicine
- ☐ Critical/Intensive care
- ☐ Internal medicine
- ☐ Family medicine
- ☐ Palliative care
- ☐ Oncology
- ☐ Other (Please describe below)

Please select your religious affiliation:

- ☐ Jewish
- ☐ Muslim
- ☐ Christian
- ☐ Hindu
- ☐ Buddhist
- ☐ Mormon
- ☐ Prefer not to answer
- ☐ Other (Please describe below)

0%  100%



Thank you for completing the survey. Your valuable input greatly contributes to our research efforts.

Please consider sharing this survey with colleagues who may be interested.

Please know that all responses are confidential, and no personal information is collected. Your data is used solely for research purposes.

Thank you for your participation and support. Please contact me if you have questions or need more information about our study.

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