Journal of the Academy of Forensic Nursing

Volume 1 • Number 2

Journal of the Academy of Forensic Nursing

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Journal of the Academy of Forensic Nursing

Editorial

"Still" Making Sense of the Senseless: Two Decades Later

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During a recent conversation with a forensic nursing student who was exploring the motivational intent behind a seemingly "senseless crime" repeatedly splashed across the national news media, I suddenly found my thoughts rushing back to a conversation I had almost 20 years ago with a colleague regarding those exact same words. That conversation ultimately led to a paradigm shift in my perspective as a forensic nurse that would forever change my professional philosophy and clinical practice. If you would humor me, I would like to share some history and context about that conversation and concept which I believe to be still relevant two decades later….

In my role as a forensic nurse (for three decades this year), I have often been presented. with tales of interpersonal violence and disturbing stories of heinous crimes, such as domestic violence, child abuse, and murder. Many of the crimes noted are often referred to colloquially as "senseless acts." Such senseless acts typically reflect underlying aggressive motivations, behaviors, and even, at times, gruesome displays, which are seemingly incomprehensible to both the public and the health care community; especially when contextualized within the societal norms and expectations of respect for the sanctity of life.

This leads to the previously mentioned conversation, which transpired early in the year 2003 - when a sage colleague challenged me to rethink the use of this word (i.e., "senseless") within the context of forensic nursing (Clements, 2004). In effect, this challenge led me to the realization that, it is not enough, or even appropriate, to refer to even the most outrageous behaviors or criminal acts as *senseless*; especially given that one of the basic professional tenets of forensic nursing is to actually "make sense of the senseless". Of note, I recently just found a commentary on this in an issue of *Psychology Today* – where the author (Samenow, 2013) stated: "the next time you read about a "senseless" crime, remember that, from the criminal's standpoint, it makes a lot of sense". Additionally, Slutkin (2016), a physician, raised poignant food-for-thought when he asked "But why do we believe violence is senseless? Is it because we believe that the people committing the violence are doing so for no reason? Or could it be that violence is

occurring for reasons that make no sense to us? In other words, if we think of something as senseless, maybe we just don't understand it sufficiently?". Apparently, this "senseless act" phenomenon truly is a social construct that remains a challenge for other disciplines as well.

Over the past 20 years, in addition to words, like "senseless", I have become increasingly aware of other descriptors that are often used in conjunction with forensic clients and their behaviors, and that these words are not necessarily helpful or proactive for the provision of comprehensive forensic health care. For example, I have often heard the term "disturbing behaviors" applied to offenders with mental or developmental delays, or clients with psychosis, or even those along the spectrum of autism presentations. As I have thought about this term, I stop and remind myself, "To whom are these behaviors 'disturbing'?" Are the behaviors disturbing to the client or we, as forensic nurses? And, ultimately, isn't it our professional role to find out "why" these behaviors are disturbing instead of just "labeling" them as such in a stigmatizing manner? *Words have power* and Forensic Nurses must recognize the power of words when describing their clients.

In the end, I am hopeful I will continue to strive to be a more "sensitive" forensic nurse when confronted by "senseless" behaviors – as it would seem to be the most "sensible" thing to do. Making *sense of the senseless* is one of the strengths of forensic nursing because we are "translational" professionals, exploring meaning as method to promote safety, recovery, and navigate the justice system. As I listen for the human story behind each act of violence and crime, sometimes it can be heart wrenching, and can bring an array of other related emotions. However, if we are to truly make "sense" of the "senseless" we must be "sensitive" to what is being seen, heard, and felt – and not just rely on "descriptor" words that are used to quantify things nor apply adjectives that are often used to stereotype and stigmatize.

*In memory of Dr. Shirley Smoyak, PhD, RN, FAAN - Editor-in-Chief, *Journal of Psychosocial Nursing and Mental Health Services* (1981-2022)

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Journal of the Academy of Forensic Nursing

Research

Recognition of Trauma Informed Care Responses in Forensic Nurses

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Received: July 12, 2023 Accepted: Sept 18, 2023

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Abstract

Trauma is universal, affecting health and behavioral choices. Trauma Informed Care (TIC) principles guide healthcare providers to avoid re-traumatization. States now mandate TIC education. Adequate information integrating TIC principles in forensic nurse education exists. However, application of TIC principles in forensic nurse practices remains elusive to measurement. The study purpose is to explore forensic nurse knowledge before, and following basic TIC interventional education, recognition of TIC responses necessary to inform and promote behavior changes. The design is pre-, educational intervention, post-, and post-post survey that measures change in TIC intervention recognition. The analysis is a descriptive, correlational study to discover learning trends in practicing forensic nurses. Nineteen forensic nurses participated in the pre-test, intervention, post-, and/or post-post-test. The results revealed that nurses with >3 years' and <10 years' experience in nursing and forensic nursing are more likely to recognize TIC in variety of situations. When implemented consistently, TIC benefits all.

KEYWORDS

Trauma Informed Care, TIC, forensic nurse, forensic nurse educator, universal screening

Recognition of Trauma Informed Care Responses in Forensic Nurses

Globally, forensic nurses care for all populations traumatized by violence. The American Nurses Association (ANA) recognized the specialty of forensic nursing in 1995. Since then, forensic nurses emerged in nursing, while providing and improving the care quality for society's most vulnerable populations. Many nurses enter into forensic nursing by caring for the sexually assaulted population however, forensic nurses provide specialized care for a variety of patients who are experiencing acute and long-term health consequences associated with trauma (Academy of Forensic Nursing, 2022).

Violence and trauma are universal, affecting anyone at any time during their life with reactions that are based on their developmental stage and perceptions of their personal life experiences (Speck, Johnson, et al., 2023; Speck, Robinson, et al., 2023). The impact of trauma affects brain development, disease formation, and coping skills, where the reactionary behaviors from trauma are predictable. For many individuals with complex trauma backgrounds, clinical presentations include mental health concerns, substance use or misuse, physical health conditions, disease, or early death (Felitti et al., 1998; Speck, Robinson, et al., 2023). In healthcare, assessing, identifying, and treating trauma occurs at three levels: macro (state or national policy and legislation), meso AKA mezzo (organizational in communities of stakeholders), and micro (provider to patient). Regardless of intervention, violence and the subsequent trauma remains a public health challenge since trauma exposures frequently are not recognized or identified in healthcare settings, and often remain unaddressed (Levenson, 2014).

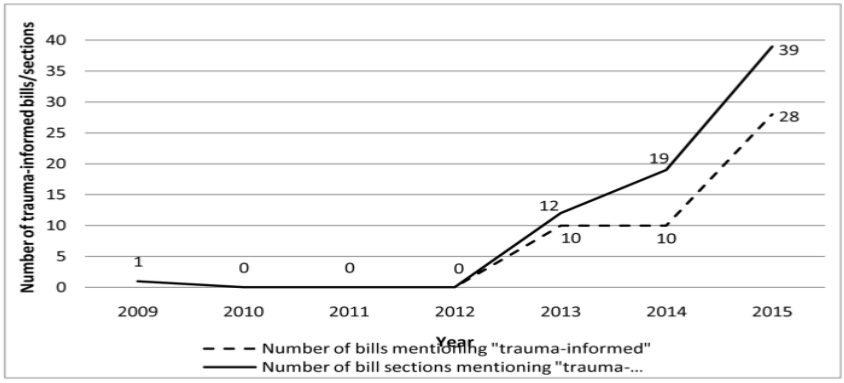
Literature Review

Trauma-Informed Care

Understanding that trauma is universal (National Academies of Medicine & Committee on the Future of Nursing 2020–2030, 2021; Substance Abuse and Mental Health Services Administration, 2014) is inadequate to guide the forensic nurses' education (Speck, Dowdell, et al., 2022). Scaffolding education uses learning theory and Bloom's taxonomy to identify the steps in learning that begin with knowledge, recognition and application, and the testing thereof (Speck et al., 2022). The six core principles in trauma informed care to learn are: (1) safety- physiologic and psychological; (2) trustworthiness and transparency; (3) empowerment; voice and choice; (4) collaboration and mutuality; (5) peer support; and (6) cultural, historical and gender acknowledgment (Substance Abuse and Mental Health Services Administration, 2014). When healthcare providers apply the six principles of TIC to practice, there is an expectation of positive adaptation and healing (Cutuli et al., 2019; Dowdell & Speck, 2022; Substance Abuse and Mental Health Services Administration, 2014). A recent federal (macro) approach is the 10-year effort to pass trauma-informed care (TIC) continuing education legislation for government bureaucracies and healthcare providers (Purtle & Lewis, 2017), demonstrated in Figure 1.

Figure 1

Trends in legislative proposals introduced in US Congress between December 22, 2009, and December 30, 2015 that mentioned "trauma-informed" and/or "trauma informed."



Source: Purtle, J., & Lewis, M. (2017).

As a result of funded mandates, healthcare systems responded and trends for teaching TIC are increasing (Purtle & Lewis, 2017). While the new *Essentials* from the American Association of Colleges in Nursing [AACN] (American Association of Colleges of Nursing, 2021a) do not mention trauma-informed care, the National Academies of Medicine report entitled, *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity* (National Academies of Medicine & Committee on the Future of Nursing 2020–2030, 2021) mentions TIC care seventeen times and trauma seventy-seven times. Additionally, TIC is a guiding principle in Forensic Nursing Core Competencies for Generalist Level 1 and Advanced Forensic Nursing Practice Level 2, incorporating trauma-informed care principles in all aspects of forensic nursing.

Understanding that trauma is universal (National Academies of Medicine & Committee on the Future of Nursing 2020–2030, 2021; Substance Abuse and Mental Health Services Administration, 2014) is inadequate to guide the pedagogical scaffolding necessary for structured learning in the community of forensic nurses. When teaching TIC principles and subsequent interventions to forensic nurses, a deliberate pedagogical approach is essential (Dowdell & Speck, 2022; Speck, Dowdell, et al., 2022), threading nursing domains and performance measures throughout (AACN, 2021a). Subsequently, nurses promote higher levels of wellness by using TIC strategies and skills in *hopes of mitigating the impact of trauma on development of trust,* which is the essential goal in the first nurse-patient encounter. The expected outcome is avoiding judgement and retraumatization while promoting the other five TIC principles. Currently, there are no studies related to knowledge acquisition (remembering and understanding), recognition or retention of TIC principles in nursing practices. Consequently, lack of recognition of TIC actions in vignettes by a population of forensic nurses with and without previous exposure to TIC continuing education contributes to the obvious lack of and inconsistent application of or innovation using TIC principles (Speck et al., 2022). Blooms' learning theory promotes remembering and understanding, which includes the learning basic principles and underlying attributes of TIC in a direct patient encounter with a forensic nurse and is the focus of this study.

Forensic Nursing Education

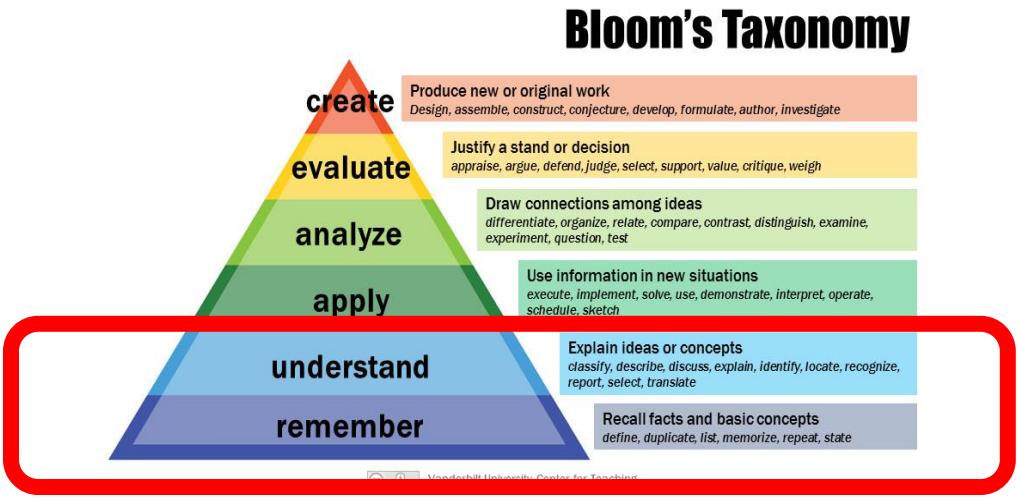
Learning theory guides all educators, providing models and frameworks for learning outcomes (AACN, 2021a; Wilson, 2016, 2013, 2005, 2001). Professional nursing organizations such as the AACN, use nursing theory to guide pedagogy and nursing education (AACN, 1998, 2006, 2011, 2021b; Baron, 2017). Bloom's taxonomy is one framework for the mechanisms by which new knowledge is acquired and for educators, guides foundational activities by informing and identifying increasingly complex ways of knowing, thinking, and applying (Anderson et al., 2001; Speck et al., 2022). In nursing education, Bloom's model helps establish and unify learning goals of remembering and understanding (Anderson et al., 2001; Wilson, 2016, 2013, 2005, 2001), and provides an organized set of learning objectives while encouraging higher-order thought in students when there is mastery of lower-level cognitive skills (Anderson et al., 2001; Forehand, 2005). Bloom's taxonomy model has six levels that classify thinking: Remember (copying, defining, listening, outlining and memorizing); Understand (annotation, summarizing, paraphrasing and contrasting); Apply (articulating, examining, implementing and interviewing); Analyze (categorizing, breaking down, organizing and questioning); Evaluate (arguing, testing, assessing and criticizing); and Create (collaborating, devising, writing and mixing) (Anderson et al., 2001; Forehand, 2005; Speck et al., 2022).

Nurses, in all clinical specialties and settings, are professional lifelong learners who routinely acquire new information. Continuing education in forensic nursing tends to focus on application of specific psycho-motor experiences (Bloom et al., 1956; Ferguson & Faugno, 2009; Mahoney, 2012; Mitchell et al., 2022) using the "see-one, do-one, teach-one" method of acquiring skills and knowledge (Speck et al., 2022). Using Bloom's Taxonomy, the first level is *remember* knowledge acquisition, thinking, and knowing (Anderson et al., 2001; Forehand, 2005). The second level of learning is *understand* with Bloom's Taxonomy that addresses interpretation, classification, comparison, and being able to explain concepts. Concept application is the ability to use information in new situations (Anderson et al., 2001). The *apply* level is viewed as the capability to synthesize information and connect different ideas to be evaluated (Anderson et al., 2001; Forehand, 2005). Knowledge acquisition is the driving force behind all three levels, which explains how new knowledge and learning are integrated into the learners' actions, attitude, values, motivation, and skillset.

Nursing education favors knowledge acquisition (remembering, understanding) before application with critical thinking and application of knowledge in the care of patients and families. Unfortunately, critical thinking (apply) captures a testable lower level of knowledge in forensic nursing, where creative thinking is more complex and harder to evaluate. The complexity often integrates concepts in designed circumstances and requires demonstration of learner approaches to include application of the same knowledge in a variety of forensic nursing situations, reflective in Bloom's taxonomy. Basic entry level nursing education requires critical thinking, which uses remember and understand to apply, with the purpose of deconstruction of the new knowledge for the application to predictable situations. For the purposes of exploring forensic nursing education, the adaptation and modifications in forensic nursing education reveals a pattern and order of thinking unique to forensic nursing practice and education. For faculty, threading forensic nursing core competencies through an assigned creative thinking product is more difficult to assess (Speck et al., 2022) and the subject of future research. The pedagogy used in this study focused on the first two levels in Bloom's Taxonomy – knowledge and thinking (remember and understand) where highlighted pedagogy at this level is in Figure 2.

Figure 2

Bloom's Taxonomy, highlighting in red foundational principles of learning



Used with permission https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/

Aim of Study

The aim and purpose of the study was to *identify gaps in remembering knowledge and recognition* through understanding principles of TIC using case scenarios in a sample of experienced forensic nurses during the Covid-19 pandemic, recognizing that application is a psychomotor skill.

Methods

The descriptive, correlational study utilized a survey design in a Northeastern state with a sample of forensic nurses. The study used the traditional educational method (specifically, a narrated power point presentation) and pre-, post-, and post-post-test surveys. Survey Monkey™ was the platform for all surveys. Institutional review board (IRB) approved the study as exempt (Stonybrook University New York - SUNY IRB2021-00102). Experienced forensic nurse educators and researchers (the raters) constructed case scenarios and questions *a priori*. The study measured recognition of TIC knowledge through case scenarios, accompanied by questions. The common permission seeking answers, elicited from each scenario, was necessary to create a non-judgmental person-centered recognition of TIC. As such, the raters established face validity and enjoyed a high level of agreement about the scenarios and questions eliciting Bloom's recognition of TIC correct actions. The one educational intervention and TIC recognition in the survey answers created causal ambiguity (unable to assign cause and effect), where establishment of internal ("likely" causal) and external validity (generalizable) of the survey tool requires more study.

The pre-, post-, and post-post-test used the same 25-question survey, which consisted of 12 socio-demographic questions related to their nursing and forensic experience, as well as exposure to TIC education, and 13 questions that queried knowledge and application about the topic of TIC, specifically *seeking permission* to create safety, voice, and choice. All questions were edited for common errors in scenarios, for instance corrections occurred for confusing, leading, or ambiguous situations, answers, and distractors before administration. The cases used

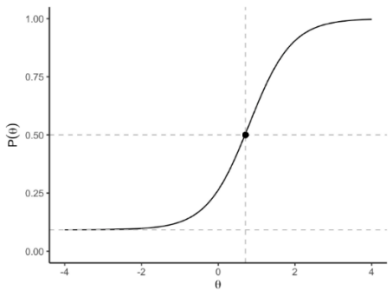
reflected common clinical nursing experiences by forensic nurses and required the participant to demonstrate recognition of TIC *seeking permission* responses through learning application of new knowledge in the same pre-, post-, and post-post survey, demonstrated in Supplemental Table 1.

The administration of the pre-test survey was completed prior to the educational intervention, which was a virtual presentation using narrated PowerPoint slides, highlighting principles of TIC application. A post-intervention test was immediately deployed after the intervention. Another survey deployment five to eight months asked participants to take the post-post-test survey. At the end of the study, the statistician received a de-identified aggregate data transmission via electronic transfer with a data dictionary.

The validity and reliability of questions to evaluate TIC education in healthcare providers are evaluated using an item response theory (IRT) model. IRT refers to a set of mathematical models that aim to explain the relationship between a latent ability or proficiency (denoted θ, as TIC knowledge here) and its observable manifestations (e.g., multiple-choice questions). IRT focuses on the pattern of responses and considers responses in probabilistic terms for the individual question and did not focus on composite variables and linear regression theory to measure all questions. A 2-parameter logistic (2PL) IRT model is fitted in this study, and called "goodness of fit" (i.e., the extent to which observed data match the values expected by theory). which accounts for item discrimination (i.e., the ability of an item to differentiate between respondents with different levels of TIC knowledge) and item difficulty (i.e., the likelihood of a correct response, expressed as the TIC knowledge level at which 50% of the participants is estimated to have a correct answer). The method excludes two items (item 7 and item 8) from the IRT model because all participants have the correct answers for these two questions. The model's goodness of fit is evaluated using M2 statistics and root mean square error of approximation (RMSEA) index. A visual depiction of the relationship between item parameters (discrimination and difficulty) and participants' TIC knowledge levels is presented in an *item characteristic curve* (ICC). An ICC is a function that shows the relationship between latent knowledge level (θ) and the probability of answering an item correctly. The latent knowledge level (θ) is expressed on a continuum that is much like a standard score, with a mean of zero and a standard deviation (SD) of 1. Figure 3 is an example of ICC.

Figure 3

Example of item characteristic curve (ICC) representing learning



In the ICC above, the item discrimination is represented by the steepness of the curve (i.e., the steeper the curve, the larger the item discrimination) and the difficulty is the locations of θ where there is a 50% chance of getting the item correct. All individual survey items were summarized as frequency and proportion using a statistical analysis software (SAS 9.4).

Results

Model fit: the results suggest a good model fit, e.g., model that is well-fitted produces more accurate outcomes, and is evidenced by the comparatively low and non-significant M2 statistic (M2=17.5, p=.85) and a very low RMSEA (close to 0).

Item discrimination: The values of the discrimination parameters ranged from -1.39 to 3.89. This parameter is a measure of how well an item differentiates individuals with different knowledge levels. Larger values, or steeper slopes, are better at differentiating people. A slope also can be interpreted as an indicator of the strength of a relationship between an item and latent knowledge level, with higher slope values corresponding to stronger relationships. The results suggest that items Q3, Q6, Q9, Q12, and Q13 have the high discrimination power (ordered) while items Q1, Q5, Q2, and Q10 have the low discrimination power. Interestingly, items Q4 and Q11 have negative discrimination against participants' TIC knowledge levels, indicating that participants with higher TIC knowledge level have a lower likelihood of answering correctly.

Item difficulty: The values of the difficulty parameters ranged from -6.29 to 1.99. Difficulty parameters are interpreted as the value of the data that corresponds to a .50 probability of answering correctly at or above that location on an item. The difficulty parameters show that the items cover a wide range of the latent knowledge level below 0, indicating most items have low difficulty.

The item parameters (discrimination and difficulty) estimates are shown in Table 1.

Table 1

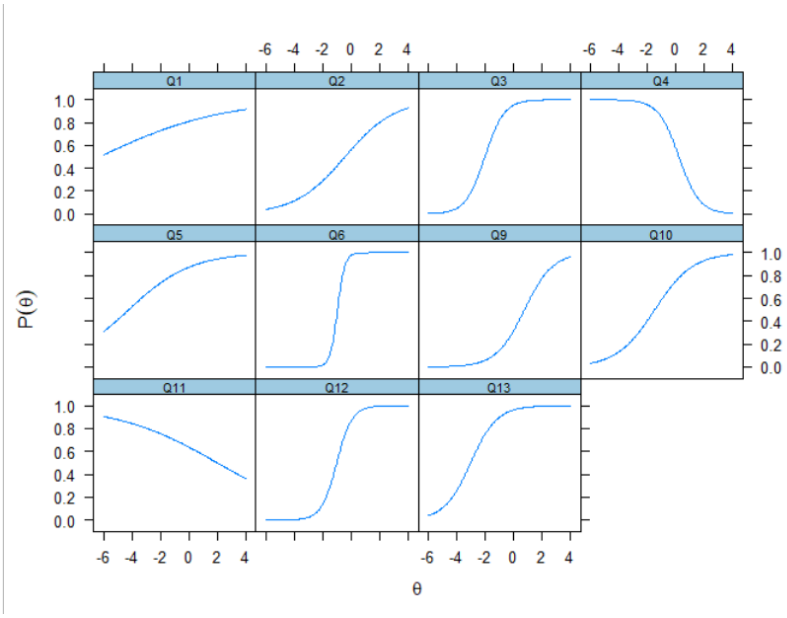
Item parameter estimates

Item	Discrimination	Difficulty
Q1	0.23	-6.29
Q2	0.57	-0.44
Q3	1.48	-2.01
Q4	-1.39	0.22
Q5	0.46	-4.24
Q6	3.89	-0.96
Q9	1.01	0.76
Q10	0.75	-1.49
Q11	-0.28	1.99
Q12	1.86	-1.01
Q13	1.08	-3.02

The relationships between item parameters (discrimination and difficulty) and participants' TIC knowledge levels are illustrated in question ICC curves that indicate levels of learning demonstrated in question answers and are visually depicted in Figure 4.

Figure 4

Participants' TIC knowledge levels and learning ICC



Study Participants

The pre-test survey was sent to nurses practicing in a forensic healthcare setting. Thirty-two (100%) received the pre-test and 22 (68.8%) healthcare providers finished the survey with two (0.9%) having partially completed the pre-test leaving a final sample of 20 (63%) having completed the pretest. Nineteen study participants attended the educational intervention and 10 (31%) completed the post-test immediately following the Zoom meeting. Five to eight months later, 21 received the post-post-test survey, which was administered via Survey Monkey™ and 14 nurses completed the post-post-test, accounting for the dropout during the Covid-19 pandemic and some variability in the results. The expectation for retention during the Covid-19 pandemic was realized with lower participation. Demographic characteristics are in Table 2.

Table 2

Description of the participant sample characteristics (N=20)

How many years have you been in Nursing practice?	3-5yr	6	30%
	6-10yr	2	10%
	>10	12	60%
Have you had TIC education?	0=no	4	20%
	1=yes	16	80%
How many years have you been practicing Forensic Nursing?	1=<1year	9	45%
	2=1-2yr	2	10%
	3=3-5yr	5	25%
	4=6-10yr	3	15%
	5=>10	1	5%

What is your highest level of education in nursing?	2=masters	4	20%
	3=baccalaureate	12	60%
	4=AD	4	20%
Are you a member of a professional Forensic Nursing organization?	1=None of the above	3	15.79%
	3=IAFN	11	57.89%
	6=AFN/IAFN	3	15.79%
	8=IAFN/ENA	2	10.53%
Have you had education about Trauma-Informed Care?	0=no	4	20%
	1=yes	16	80%
How much exposure have you had to trauma-informed care (continuing ed or classes)?	None=0	3	15%
	1-2 times=1	3	15%
	3 or more times=2	14	70%

The results of the pre and post survey questions were examined in relation to *nursing practice-experience* (Supplemental Table 2), *forensic nursing experience* (Supplemental Table 3), and *knowledge of trauma informed care* (Supplemental Table 4). Results were identified as contributory (green), non-contributory (yellow), and obvious knowledge or recognition (red). The researchers conducted a qualitative analysis of each question to determine themes as possible barriers to recognition post education, identifying the yellow coded questions to be non-contributory, using themes from the green questions as comparison. *A priori* themes were identified as barriers or contributors to learning knowledge and identification of new learning. Non-contributory or mixed data, as defined by learning in the post-test and coded as yellow, included questions: Q2, Q4, Q5, Q10, Q11. Questions that had contributory data, as defined by learning in the post-test, were coded as green (Q1, Q3, Q4, Q6, Q9, Q12, Q13).

Evaluation of each question resulted in elimination of two, coded red, where all participants answered correctly in all three surveys (Q7, Q8). Of the remaining questions (n=11), analysis of recognition knowledge as determined by the correct answer, keyed as 1 in data dictionary, appeared under three conditions – years in nursing, years as a forensic nurse, and previous trauma informed care education exposure.

For all groups and questions, except for Q7, Q8 and a few outliers, there was demonstration of new knowledge, remembering, and recognition on the immediate post-test survey. There was no discernable retention of new knowledge or recognition in the post- post-test survey when compared to years in nursing, years as a forensic nurse and in trauma informed care exposure. Familiar scenarios reflected old learning and no new knowledge acquisition, remembering or recognition. In participants with >10-years' practice-experience dropped from pre- to post-post-test on all questions except Q9, Q12, implying familiarity and previous knowledge and recognition. Thematic analysis of participant characteristics using Blooms Taxonomy as a framework for possible explanations is in Table 3.

Table 3

Thematic analysis of question results based on participant characteristics
(Refer to Figure 2. Bloom's Taxonomy)

Themes (Bloom's Levels)	Possible explanations
Implicit Beliefs and Bias (Remember, Recall)	When TIC information contradicts beliefs, there was little learning and sometimes outright rejection of new information by not remembering
Explicit Bias and Actions (Understand, Identify, Recognize)	Answers from previous learning that were not seeking permission with TIC were chosen frequently and created a barrier to full knowledge and recognition of new material
Person-centered care (Understand, Recognize)	Answers that addressed provider needs were chosen frequently, implying a lack of understanding about how to implement TIC in all environments and situations
Experience as RN <3 or > 3 years as nurse (Knowledge, Understand)	They did better on immediate post-test but not as well as post post-test, implying short memory is good for the post-test, but not retained over time in the post- post-test survey.
Clinical Scenario Familiarity (Knowledge, Understand, Retention)	Participants demonstrated comfort (DV, rape) with specific scenarios, demonstrated better learning outcomes, implying previous exposure. In addition, familiar scenarios among forensic nurses resulted in pre-test accuracy and no learning

Limitations

The small sample was a convenience sample of volunteers from one regional area in a Northeastern state. The design required a group with limited characteristics (forensic nurses) for data analysis. The main limitation of quasi-experimental pre-test–post-test design is the threat to internal validity (cannot determine cause) with *a priori* scenario and answer development. The development of case scenarios and TIC answers occurred *a priori* using subject matter experts to establish face validity. Internal and external construct validity was not established (due to a lack of sensitivity to the variable of *seeking permission* in repeated answers) and authors recommend further study. Surveyed during Covid-19, nurses experienced a significant stress, possibly contributing to a lack of retention of unfamiliar or new information in a single educational intervention. For any participant, online education may be limiting, and survey completion takes additional time away from other activities or has environmental distraction, resulting in extended post-post survey completion. Reduced reinforcement opportunities of the newest evidence-based information, e.g., practice simulation, is a limitation, which also may affect learning recall during post and post-post surveys.

Discussion

Research about TIC recognition in practice is lacking. The design of the study used educational pedological theories and frameworks to deconstruct learning to determine the foundational gaps in the earliest stages of remembering (Bloom's Stage 1) and understanding (Bloom's Stage 2). This study showed higher TIC knowledge levels have a lower likelihood of answering selected TIC questions correctly. As a knowledge-intensive profession, nursing defines one's capacity for effective action as application following critical analysis (Gaffney, 2021). Experienced forensic nurses in this study possess a mix of experiences, values, contextual information, and insights to enhance their decision-making skills and should show high knowledge attainment. To examine TIC knowledge (remembering) and recognition (understanding) in a sample of experienced forensic nurses, the study findings include: (1) participants with 5 or more years of nursing *did not demonstrate* new learning (remembering or understanding) , particularly in questions that have newer situations (e.g., pronouns or culture of systems [tribal law, child protection laws]); (2) learning about TIC occurred with variation among individuals, and as such, choosing ICC statistical analysis represents the single unique question only, not questions as a group, allowing for thematic discussions; (3) baseline knowledge with specific questions was good (Q1, Q2) possibly representing previous knowledge and education; (4) without experience with patient populations (incarcerated, elder) the learner choices reflected difficulty in transitioning knowledge from remembering and understanding to recognition of TIC (Q5, Q10); and (5) considering previous knowledge levels in individual participants resulted in higher learning levels because several questions involved females (Q3, Q6, Q9, Q12 and Q13), sexual assault situations (Q3, Q12), intimate partner violence (Q6, Q9), and situational management in an emergency (Q12), all associated with current and familiar participant practices.

Two questions contained existing knowledge, where all participants answered correctly (Q7, Q8), so the two questions were not included in the overall study results. The same familiarity reflects confidence in *or* failure to reflect new learning by choosing the wrong answer, regardless of experience level. Authors took note that one question with legal advocacy language, "It's not your fault," was persistently chosen as the correct answer by two participants. The answer is not person-centered (AACN, 2021) and is a nurse-centered directive that relieves the discomfort of the vicarious trauma when listening to a horrific lived experience. The authors question the moral conflict (e.g., feeling powerless to change the event occurrence) faced by forensic nurses caring for persons with trauma, which disconnects the person from the initial TIC delivery intervention while trying to establish safety. This suggests that nurses previous learning about victims or personal trauma experiences influences remembering and understanding of rationales for the individual nurse's behavior during the provision of TIC in person-centered care and is an area of future educational research. Given persons enter nursing with a strong desire to deliver compassionate care that relieves pain, whether emotional or physical, the authors also believe that adoption of behavioral changes requires practice using simulators and simulation (Barsalou, 2009). Trauma focused behavioral change is person-centered in nursing practice, meeting AACN *Essentials,* and reflective that nurses often need the same peer support, compassion, and caring offered with a TIC intervention.

Education strategies that are trauma-focused and person-centered employ connectiveness (Stange, 2009) and increase meta-cognitive creativity (i.e., intentional thinking about how you think and learn), and therefore how the nurse improves knowledge (recognition and understanding). Strategies based in connectiveness theory, where learning is experiential is best

influenced by a group of learners (e.g., called nodes in connectiveness theory), and reflects peer exchange and support. One supportive peer method is *Extension for Community Healthcare Outcomes* (ECHO) (McBain et al., 2019). In ECHO, to minimize barriers to learning, information exchanges are structured to challenge the individual learner with new and conflicting education and experiences through a socialization process. Evidence presented by experts, and not the self-promoting personalities, social movements, or organizational positions provide opportunities for repetitive information in different ways that connect with the lived experiences of the learner; and require distinct and unique methods for those with less experience, trauma experiences, and those with decades of experience. ECHO is necessary for consensus when best practices are absent. In this study, the unique learner experience without connectedness or ECHO's peer feedback is one explanation that recognizes a reason for the absence of new learning. Surprisingly, those not demonstrating new learning in this study were nurses with five or more years of experience. The authors believe that there are additional strategies to facilitate reduction of moral conflict and to use evidence to explain and promote understanding of the value of the TIC results in behavior change after years of practice. Consequently, TIC learning does not occur using an instructional power point or in one session, but rather a discussion about TIC evidence, theories, frameworks, and methods that promote person-centered care and support the individual nurse's reflection about their own learning, behaviors, and current need for change.

TIC, while not in the AACN *Essentials*, is necessary for the core competency, person-centered care delivery. The forensic nurse behavioral response includes a clear understanding of person-centered trauma-informed care and is essential to change explicit bias and remove judgement, thereby providing compassionate care. The development of the forensic nurse's expertise through competency demonstrations is developed over time through successful patient encounters in culturally diverse patient populations, where they are reviewing and revising their knowledge base. Outside of graduate programs, forensic nursing education is primarily found in continuing education. Universities and healthcare institutions must also be aware of nurses' roles and forensic responsibilities by developing and making TIC learning available. For nurses, that means empowering the nurse to recognize and understand that patient-centered care reveals autonomous patient decisions based on their lifetime of experiences, not nursing directives or actions. Acknowledging the person's autonomy is a notion easy to accept and verbalize, but harder to implement. For many people, including forensic nurses, behavior change(s) are often difficult when challenged with integration of new information. The recognition of TIC responses in this study's case scenarios found improved recognition of trauma-informed approaches post the educational intervention. The population of forensic nurses in this study did not maintain post-test scores on the post-post-test, suggesting that *additional learning strategies are needed.*

Implications for Practice in Education of Forensic Nurses

The implications for educators of TIC utilize theoretical and pedagogical methods. In nursing one method is clinical mentoring commonly is used to transfer knowledge from those with experience to those who are new to the role (Gaffney, 2021). Forensic nurses with more experience have an obligation to mentor and precept new or younger forensic nurses thereby providing them with the opportunity for peer validation with practice actions and to extrapolate key knowledge (Gaffney, 2021). Another method is when senior mentors who are educators provide the transition for newer forensic nurses through educational strategies that implement Blooms' levels of learning, from knowledge acquisition to meta-cognitive manipulation of

situations that differ from familiar populations. The core competencies for forensic nurses build on the AACN Essentials (AACN, 2021a) with further clarification of the domains of forensic nurse practices that include how to apply TIC principles, reframe issues, and identify alternative solutions to clinical and ethical dilemmas when practice populations present uniqueness unfamiliar to the forensic nurse. These methods proposed provide a framework for measuring growth in the specialty of forensic nursing (Speck et al., 2022).

The concept of connectiveness guides the learner of tomorrow and has implications for forensic nurses. The method of creating *nodes* of like learners begins to innovate and implement TIC principles. One place for learning application of TIC is in simulation spaces that are free from distractions, creating safe spaces for learners. To successfully transition knowledge from the mentor to the novice or naïve forensic nurse, learning requires repetitive, scheduled practice using the new understanding of information in the application of TIC principles in the clinical setting, such as using the CPR model of learning. Other strategies for nurses include distribution of new learning in shorter peer sessions that use the mentor in their leadership capacity to facilitate the conversation to build on existing knowledge when addressing unique populations or situations. Using the ECHO Model as a method to bring experts and mentors together assists new learning as nurses respond to situations where peers share support, guidance, and feedback in a safe learning environment (McBain et al., 2019). For example, forensic nurses avoid overwhelming the learner by discussing one TIC principle per educational session, with the group bringing a complex case, and the mentor shares professional experience and evidence-based knowledge from the literature, not opinions. Another model promotes simulator and simulation learning where educator mentors create the pedagogical approach to TIC scenarios where students have the opportunity to build on knowledge, and then practice sub-sets of learned skills in real-life situations to enhance memory (Barsalou, 2009; McBain et al., 2019). Each of these methods use connectiveness theory and science to enhance passive (absorption, assimilation, consideration, translation) and active (thinking, discussing, challenging, analyzing) learning (Barsalou, 2009). All the active learning methods encourage mentor guidance, exchange, and debate about unfamiliar population scenarios, which helps imprint new TIC knowledge into long term memory and creates a path for continuing learning in forensic nurse populations.

Conclusion

A trauma-informed approach to care uses a framework that realizes trauma exists, recognizes the effects of trauma, responds with trauma-informed knowledge, and resists traumatization on an organizational and personal interaction level (Substance Abuse and Mental Health Services Administration, 2014), and is a person-centered care approach for nurses. The conclusion is that the science of teaching and learning creates environments for behavior change. This article identified theories, frameworks, methods, and principles of TIC necessary for the forensic nurse. Forensic nurses with more experience understand, utilize their knowledge and clinical information to make decisions swiftly and efficiently (Gaffney, 2021). With changing generations, evidence to support traditional methods of teaching knowledge is essential. However, conventional methods do not demonstrate meta-cognitive thinking when applying new knowledge past critical thinking *application* levels of learning. Knowledge is essential and the initial application of knowledge is the “bread and butter” for educators. If forensic nurses are to change nurse-centric behaviors to person-centered TIC, they first must recognize the value of the specific behavior to adopt as new behavior and recognize that the traditional ways of teaching are not effective, and the implication for being ineffective is particularly necessary for forensic nurse

educators. Recognizing that change in behavior is based on personal values, teachers often turn to innovative conceptual designs to encourage metacognitive advanced practices. Often this means stripping away old knowledge and nurse-centric thought, followed by nurse-centric actions. The behavior changes require implementing TIC person-centered actions and TIC principles and nursing ethics that foster person-centered care. TIC requires acceptance of the person and respect without judgement to facilitate patient autonomy, through respect and genuine caring and compassion, and willingness to be transparent in support the person's choices by seeking permission and giving voice and choice to all.

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Journal of the Academy of Forensic Nursing

Research

A Qualitative Multiple Case Study Analysis: The Elopement Process from Domestic Minor Sex Trafficking (DMST)

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Received: March 23, 2023 Accepted: Aug 24, 2023

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Abstract

Domestic Minor Sex Trafficking (DMST) is the fastest growing crime globally. Vulnerable adolescents are primary targets of sex traffickers. DMST delays adolescent development following their treatment during and environmental conditions while in *The Life*. This qualitative study reveals elopement decisions are fraught with *barriers to elope* and *seeking safety*. The research uncovered a non-linear process that affects their development, that is described in the conceptual models: *The War MAZE©* and *Conquering the War MAZE©*. These new insights help healthcare providers identify *readiness to elope* and *elopement victory* by recognizing the adolescent's barriers to elopement. The results explain DMST elopement from a developmental perspective by analyzing qualitative data from survivor voices, which supports gender equity and empowerment of women. The findings inform healthcare providers in planning inclusive trauma-informed care approaches and unbiased research designed to safeguard DMST survivors during their recovery processes.

Keywords: domestic minor sex trafficking (DMST), elopement, adolescent development, MAZE, non-linear, qualitative, survivor of DMST, lived experience of DMST

A Qualitative Multiple Case Study Analysis: The Elopement Process from Domestic Minor Sex Trafficking (DMST)

Human trafficking (HT) is the fastest growing crime in the world, and behind drugs, is the second-leading illegal enterprise globally, affecting more than 12.3 million people worldwide (Anthony et al., 2017; Chohaney, 2016). In 2000, a wide range of public health practitioners and researchers globally met to understand HT and thus, how to prevent it. The resulting legislation describes HT as a form of modern-day slavery that involves the "recruitment, transportation, transfer, harboring, or receipt of individuals" (Trafficking Victims Protection Act, 2000) by using ploys for recruitment, supported by forced behaviors and manipulation. Traffickers control the entire person and their activities for the purposes of exploitation (Fedina et al., 2019), typically for financial gain. Prevalence of human trafficking is unknown; therefore, research designs and methodologies are inadequate and difficult to measure. The result is inconsistent findings among researchers. Even so, research results over time resulted in improved understanding about HT (Roe-Sepowitz et al., 2015).

The sexual exploitation of children in the United States (US) remains a public health concern encouraged by fraud, force, or coercive enticement to engage in commercial sexual practices (Tidball et al., 2016), known as domestic minor sex trafficking (DMST) (Goldberg et al., 2017). In prosecution involving DMST in the US, legislation excludes *proof* of fraud, force, or coercion in minor children (Clawson, 2009). As such, healthcare providers in contact with minors in health care, need only report the minor as a child abuse victim to engage child protective services and law enforcement who remove the adolescent from the environment. Therefore, healthcare provider involvement and intervention on behalf of the adolescent victim of DMST is of highest importance.

Literature Review

Labor and *sex trafficking* are the two primary types of human trafficking. Surveys identify over 25 trafficking typologies (Anthony et al., 2017), and DMST is one type of sex trafficking. Nonetheless, a literature review requires full understanding about all types of human trafficking to inform and focus on the experience of DMST. When a minor, DMST is transactional sex. Transactional sex comprises all forms of sexual acts and exposures that involve the reception or giving of valuables to any participating person. With adolescents, transactional sex occurs in the form of pornography, prostitution, live-sex shows, massage parlors, stripping, military prostitution, mail-order brides, and sex-tourism, among others. As a minor, participation is *survival sex,* defined as transactional commercial sex practices that are meeting the personal survival needs of the child. As such, the minor is a casualty of felonious exploitation in exchange for payment in the form of shelter, food, money, or any other valuable commodity, such as drugs (Choi, 2015; Nichols & Heil, 2015).

Theory shapes thinking about research, which helps define concepts, guides research questions, and directs data analysis. Often borrowed from other disciplines, theoretical foundations inform nursing research and practice, offering a unique perspective about phenomena of interest. US anti-trafficking groups acknowledge human trafficking is a human rights violation, and they associate the act with slavery, exploitation, and violence. Therefore, escape from the trafficking environment is an area of interest. The challenge is that no single theory offers a

comprehensive view about DMST elopement. Elder's life course theory (Elder, 1994) and Biderman's theory of coercion (Biderman, 1957) are two Human Based Right Approach (HBRA) perspectives informing DMST elopement research, summarized in Table 1.

Table 1

Theoretical Guiding Frameworks Guiding Research

Theory	**Tenets**	**Principles**
Elder's Life Course Theory	Events do not occur in isolation, but rather that experiences in one situation and at one time influence an individual's environment and affect later experiences in multiple contexts	*Social relationships* (human lives in social relationships with relatives and friends throughout life) *Historical effects* (an environmental consequence where social change affects an individual's successive life patterns) *Social timing* (the incidence, duration, sequence of roles, relevant expectations, and beliefs based on age).
Biderman's Theory of Coercion	Provides a framework with methods, effects or purposes, and variants of actions to maintain control of victims.	*Isolation* deprives victims of all social support. *Monopolization of perception* fixes victims' attention on immediate predicament. *Induced debility and exhaustion w*eaken mental and physical ability to resist. *Threats* cultivates anxiety and despair. *Occasional indulgences* provide positive motivation for compliance. *Demonstrating omnipotence* suggest the pointlessness of resistance. *Degradation* makes the cost of resistance more damaging to self-esteem than is to surrender. *Imposing trivial demands* develop habits of compliance.

Researchers generally lack access to persons with the DMST experience and consequently, the research saturation reflects areas that answer: *What is victimization*? *Who is a victim*? *How is a victim made*? and *Where are the locations of victimization*? The dearth of research findings related to adolescent growth and development during DMST are important constructs to understand. Of note, is that they co-occur with development of the brain, and predict adolescent developmental milestones. Neuroplasticity explains a brain's ability to change, which begins at birth, continues through puberty, and throughout one's life, slowing in older ages. The interruption of blood flow to the brain is trauma, resulting in brain changes and function (Evans, 2020; Hopper, 2017; Hossain et al., 2010). Depending on the level of violence and type of violence experienced, high levels of physical head and neck trauma (strangulation or blows to the head), or coercive emotional manipulation produce hormonally driven oxidative stress, which results in neurochemical changes. The hormones create hypoxic and-or anoxic environments, where the degree of injury and eventual functional abilities are variable (Hopper, 2017), and without oxygen, the structures of the brain shrink and die. Irrespective, oxidative stress on the brain (e.g., frontal, parietal, and temporal cortices) affect cognitive growth, memory, and emotional perceptions. Combined continuous physical and emotional stress creates dysregulation (McEwen, 2004; Selye, 1998), and subsequently, increases injury and delay to normal development. Often studied is a stressful environment and the significant impact on mental health (Fuhrmann et al., 2015; Levine & Schumacher, 2017) and adverse psychological outcomes (Basson, 2012; Estes, 2001; Kotrla, 2010). However, as choices for survival increase, the behavioral choices seen in healthcare circles receive maladaptive labels. In reality, the behaviors are a *normal response to abnormal events* and related to primal survival. Advocacy literature

promotes the notion that a person is "whole," and therefore the traumatic experience affects all part of a person (Clawson & Grace, 2007; Williamson, 2010). Nursing literature is reporting adverse outcomes from the developmental stages, and personal view about bio-psycho-social-spiritual self, encouraging reflection about the lived experience and the influence on personal decisions and current health status. Still, the formative understanding about repetitive coercive trauma on growth and development is not well understood or researched.

Knowledge about adolescence informs the analysis of DMST experiences and decisions by exploring the developmental stages and milestone activities such as critical thinking, identity development, peer identification and emotional separation from parents during early (Allen & Waterman, 2020; Christie & Viner, 2005; Dinizulu et al., 2014; McIntosh & Phillips, 2011). As such, the traffickers use a myriad coercive and deceptive practices that produce a primal fear in the adolescent (Sanchez et al., 2019). Children and adolescents are neither psychologically nor emotionally equipped to respond to repeated and prolonged experiences of repetitive and coercive traumas, which creates a multiplicity and complexity of outcomes during captivity experiences, called complex trauma (Hardy et al., 2013; Author et al., 2019). The previous research about DMST elopement experience is linear (Baker et al., 2010; Evans, 2020; Gonzalez et al., 2019; Hammond, 2014), and researchers' discussions acknowledge adolescent naiveté, but the stages of adolescent growth and development are excluded from consideration. The absence of exploration considering stages of adolescent growth and development was one basis for this study, which sought to analyze survivors' reflections about the elopement process from DMST during their adolescence.

Method

The purpose of the study is to qualitatively analyze survivor statements, seeking emerging themes associated with the elopement process. Case study methodology design explores the experiences of adult survivors of sex trafficking during adolescence. Case study methodology focuses on occurrences, activities, or other precise events as a mean of comprehending a phenomenon through the individuals' lived experiences (Yin, 2018). As a research method, an exploratory multiple case study provided a way to understand, compare, and identify concepts within and across survivors' experiences with the elopement process from trafficking. The multiple cases studies research design promotes data collection through a voluntary semi-structured interview, elicited text and participant observation, allowing for the development of a conceptual framework guided by the case similarities and differences. The measurement for validity used four strategies for trustworthiness see Table 2.

The *research assumptions* include (1) there are identifiable themes unique to the trafficked population of *never-served* vulnerable persons (Speck et al., 2008) and discovery leads to future interventions facilitating and studying the elopement process, specifically during intersection with health care providers, law enforcement officials, and social advocates; (2) there is an individual's identity, social status, or circumstances of DMST have no bearing on their right to liberty and safety from DMST, or avoidance of exploitation and trauma; and (3) there is an expected moral obligation in nursing to protect the human rights of vulnerable *never-served* populations, including DMST population. As such, the *ethical considerations* included a full review for human subject protection, obtained from a university's Institutional Review Board #Pro2019000128. The 10-month study of semi-structured interviews resulted in data for analysis. Excerpts from journal writings, drawn pictures, podcast, and magazine article provided comparison with interview data. Transcription of the interviews allowed the researcher to listen and create field notes, verifying

interview transcriptions, uploading to *NVivo12* for qualitative analysis. Data defined any replicative relationships within the case studies, and similarities and differences through a cross-case analysis. Coding identified over-arching themes and sub-themes, allowing all plausible elopement process interpretations. The inclusion criteria was (1) 18 years or older, (2) able to read and speak English, (3) willingness to talk about trafficking experience, (4) at least two years out of trafficking, (5) provide contact information of therapist or counselor and/or post-exit or post-elopement (used interchangeably), or counseling program, (6) access to a computer or a smartphone, and (7) trafficked in New Jersey, New York, or Pennsylvania during their adolescent years.

Results

The multiple case study included an adequate sample of four female participants. They ranged in age from 34 to 52 years (Mean = 42.5 years). Seventy-five percent of participants identified themselves as White and 25% identified themselves as mixed. The age of entry to trafficking ranged from 12 to 17 years (Mean = 15.4 years). Educational level *at entry into trafficking* was 75% High School, and 25% 6th grade. Recruitment method was 50% ploy[1] with runaway and waiting boyfriend (ploy-john[2]), 25% modeling ad (ploy-john)**,** and 25% music-industry-entourage (ploy-john). Trafficking location included 50% (PA), 25% (NJ), and 25% (NJ and NY). The elopement location included 25% (PA), 25% (OH), 25% (HI), and 25% (FL). Elopement age ranged from 18 to 44 years (Mean = 30.8 years). Elopement educational level was 50% (some college), 50% (High School dropout). Counseling relationship in years ranged from 6 months to 8 years (Mean = 3.4 years). Education level *at the time of interview* was 50% Associate Degrees, 25% some college, and 25% High School diploma. Sex trafficking in years ranged from 1 to 32 years (Mean = 15.4 years).

Major Theme: Out of The War

Life is a myriad of conflicts, not a detached domain from the rest of society. Often, war is an inevitable human experience, full of the best and worst of human nature. During war, one cannot effectively fight unless the person identifies the enemies, occurring only through careful awareness of the signs and patterns that reveal hostility (Greene, 2007). Wars are not won by just declaring it won, but rather with strategic course decisions and refined maneuvers, revealed by all participants. The major theme was Out of the War. The term *Out of the War* explained mastery of the DMST circumstance and formation of elopement plans. The participants talked about developing and testing their elopement strategy through practice, until mastering the war milieu. Taking steps toward elopement is a process. Confidence improves and talent in mastery of the environment increases, providing internal peace and innovations in winning strategies while still in *the Life*[3]...but, also for life after DMST. As explained uniquely by each of the participants, to win equals elopement, and *Out of the War.* One spoke about how it took years to finally exit *the Life, Out of the War*. She said,

[1] Definition: showing skill in achieving one's ends by deceit or evasion in a plan or action designed to turn a situation to one's own advantage, and in this case the business of DMST Dictionary, C. (2020). *Cambridge Dictionary*. https://dictionary.cambridge.org/us/dictionary/english/ploy

[2] *Ploy-john* is the trafficker.

[3] *The Life* is the verbatim language used by participants in the study when summarizing their lived experience while in DMST.

> *I was thinking about it for many years… every time I got arrested, I thought about it. But did I have a real way out? Not really…. just kept going back to the person I was living with [who trafficked me]…it was like ...to be "out of the war"*

Related Theme: The War

The cyclic re-immersion informed the related theme, *The War,* which was a coercive and contrived category of barriers, created by the traffickers. *The War* is the participant description about the DMST lived experience. Several participants explained that eloping from *the War* was a test in survival. Their lament was some survive, and others perish. Predictably, they express developmental understanding and growth during their lived journey through DMST.

Sub-Theme 1: Barriers to Elopement. The interviewees identified three integrated and distinctive barriers to elopement, identified as sub-categories – *individual, interpersonal, and professional silos*. The sub-categories have cross-barrier impact, regardless of the individual's strengths. The sub-categories, individual, interpersonal, and/or professional silos were enough to create barriers on their own or, when interconnected, influence the participants' journey, and prevent elopement until mastery over all barriers, now no longer influential. The description of the individual elopement barrier is in the specific sub-categories, that identified unique themes in Table 3. The interpersonal barrier was described by the following sub-categories in Table 4.

The last sub-category, professional silos is explained by the following themes in Table 5.

Sub-Theme 2: Seeking Safety. An influential Theme for elopement was safety. The adolescent frequently sought a safe rescuer, and if that person is an abuser [trafficker], the victimization cycle from childhood into adolescence continues. To fully comprehend the sub-theme seeking safety, the participants re-counted their lived experience from their childhood, using the concepts of adolescence (e.g., the *developmental age*). OG describes the challenge of adolescence, which is a testing oneself without purpose, by saying, "I felt like an empty page, and I was just letting someone tell me who to be and what to be." Mel expressed the vulnerability of the developmental age and lack of knowledge and experience. She said, "I didn't know who, at that age… I didn't know who to ask for help…I didn't know how to ask for help…I was not able to put into words, what was happening!"

The participants identified *adolescent victim needs* to assist in the DMST elopement process using interview questions to discuss exiting needs. The researcher asked, "if you could change that? or what sort of things they [professional] could have said to you? To prompt you to get help or ask for help." Based on their perspective, participants identified essential sub-categories necessary for the elopement process by looking back at their adolescent DMST experience. They reported (1) positive support e.g., "listen," (Lisa), "no judgement" (OG), "ask" (A3); (2) follow-up e.g., "don't give up" (OG), "being aware of the situation (A3); (3) understand the why e.g., "her experience is the only experience, and I am not like you" (A3); "hard to understand" (Mel).

Related Theme 2: Conquering the War

The second related theme is *Conquering the War*, explains the participants' thought processes during their adolescent years while desiring elopement from DMST. The theme *Conquering the War* provides an opportunity to use the participants' voices to explain DMST elopement as a complex developmental process. The analysis reveals the process is not associated with a behavioral change but is associated with developmental understandings about their situation and improving reflection about their skill development with each experience toward the

elopement process. Two sub-themes emerged from the data – *readiness to elope and elopement victory.* The related theme *Conquering the War* is in Figure 2.

Sub-Theme 1: Readiness to Elope. The participants reveal frequent revisiting their situation and thinking about their desires to elope. The participants voiced an awareness process that included thinking about an escape plan and identifying their personal barriers to elopement. The absence of an early strategy to elope or safe resources necessary for success was a significant barrier to the process of elopement. All participants describe a gradual or sudden awareness about their DMST situation, with countless thoughtful plans to elope, reporting 15-100 plans; still, they remained, without individual action [e.g., no strategy or method] or knowledge or awareness of external safe resources. Accordingly, developmental awareness that occurs with age, knowledge, and experience informed all participants' readiness to elope. *Readiness to elope* included the sub-categories, themes, and dimensions noted in Table 6.

Sub-Theme 2: Elopement Victory. Described by participants as a final transition out of *the Life*. The overlapping sub-categories of the elopement victory included themes in the individual, interpersonal, and survivor needs for transition from the DMST environment to a life without DMST. *Individual* sub-category, themes, and dimension are described in Table 7.

The interpersonal victory sub-category included a positive support Theme (a therapist or other encouraging relationship), where the integration of interpersonal environments among the participants was a path toward their goal of permanent elopement and success.

> "I since been marry [*sic] to a man [touches her head and small smile] who doesn't hold my past against me, which was always what has happened before.... [Later she describes] I feel I am in shock… sometimes it feels very unreal …that actually… I am not a sex worker anymore that… ummm [*sic] …it is very empowering but is really the help of all people, people like you!" (OG)

The *survivor needs* are verbatim in participant narratives about the sub-category, themes, and dimension in Table 8.

Discussion

This study reveals and reinforces the notion of the DMST elopement process as non-linear developmental progression. The study also exposed a labyrinth of environments and barriers where constructs frame understanding about the complex traumatic experiences of DMST victims during adolescence. Understanding the findings from this study facilitates strategies to promote and safeguard permanent elopement from DMST. These barriers to the adolescent's traumatic life-journey, whether intrinsic and or extrinsic, discovers a damaging vicious cycle that impedes internal and external strategies and opportunities for DMST elopement. The study uses growth and development to project a new understanding about adolescent's immature life experiences and the developmental contributions to their weakened awareness of opportunities to elope. The stages of adolescent growth and development further reveal different sub-categories of barriers. Early adolescence naiveté heightens fears of unknown negative outcomes for self, and as such, they experience primal responses while in *the Life.* This study informs researchers that as age and experience increase during their time in *the Life,* their skills improve in testing strategies, and increase awareness of personal options. Awareness about their safety in *the Life* diminished their options. Adolescent immaturity without interpersonal and interprofessional support exposes them to dangers, e.g., physical (potential death) and mental health (self-identity), and in this study, identifies numerous barriers experienced by participants undermining *each attempt* to elope. As

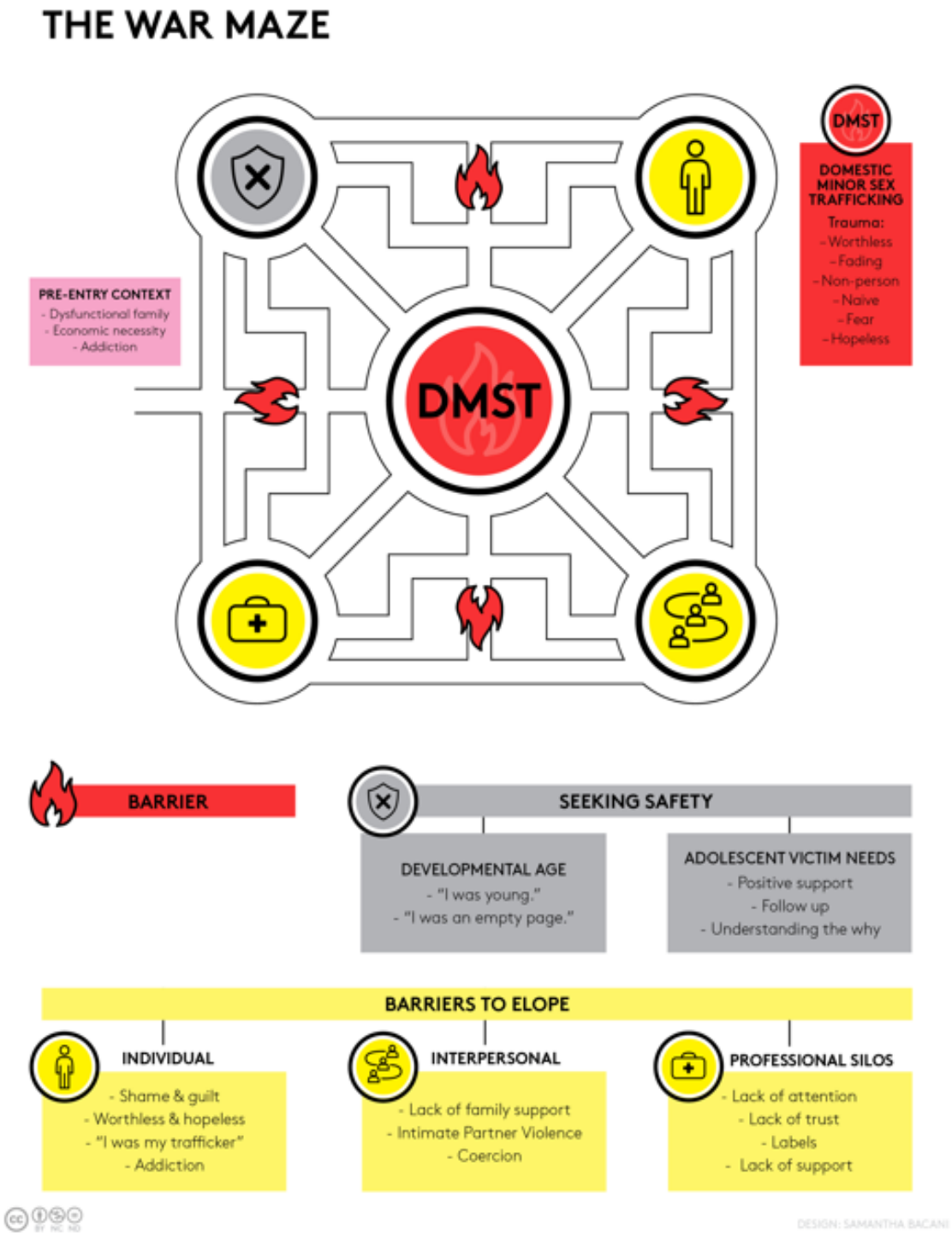
participants matured developmentally, the study demonstrated that increasing experience in *the Life* weakened the barriers, providing more options for elopement, eventually making elopement possible with *individual*, *interpersonal* (supportive relationships), and *survivor needs* support.

In addition, the narratives from the study inform that no two eloping journeys are the same. The difference among individuals uniquely impacts their recovery. Use of the theoretical framework of *Life Course Theory* (Elder, 1994) supports the findings by qualifying the participants life journey as complex with each contributing experience influencing their next experience. Also supporting the findings is the *Theory of Coercion* (Biderman, 1957), which addresses the abusive coercive events in *the Life*, explaining their fears with each attempt. Both theories explain the DMST victim life's journey, supporting the notion that events do not occur in isolation but are cumulative, influencing future choices and reactions to the situations in the lived experiences. This study promotes an explanation about life choices while in *the Life*, their choices' purpose and impact, and the traffickers' reactions to the inevitable growth and development of the adolescent in DMST. The study informs that traffickers' reactions increase levels of violence, using corrective violent behavior modification, specifically to maintain control, and explainable with psychological and social theories. The study revelation is that adolescents in DMST experience repeated decision-making, looking for opportunity to elope in non-linear tests to the environment but encountered frequent elopement barriers described in the study. The study informs that the shared elopement process and recovery trajectory from DMST is laden with barriers, supporting a common non-linear process of aging maturity through adolescence. The unique themes in the narrative uncover that eloping *the Life* is a developmental process, affected by experiences, maturation, awareness, and opportunity.

The literature scarcity about non-linear decision making does not inform the current study. Nonetheless, the thematic analysis, with an experienced nursing practice lens, exposes a maze structure to understand the relationships between barriers and the adolescent's decision making throughout the development growth of the adolescent. Reflecting on their adolescence, the participants identify periods of time when they attempted to leave *Out of the War*, the major theme of the study. Further analysis identifies *The War Maze* (Figure 1), which is *the Life* and the situational environment descriptions by participants. To understand *The War Maze*, researchers acknowledge the interrelated sub-categories with unique themes inhibit the participants in DMST from seeking help. The study exposes that *individual, interpersonal, and professional silos* sub-category barriers are predictable, and the narratives expose the explanation related to the difficulties in leaving *the Life.* The first two sub-categories, *individual and interpersonal*, reflects the human-to-human level, and include close relationships, often hampered by their life trajectory (family violence and sex abuse) coupled with the DMST toxic environment. The last sub-category, *professional silos*, reflects the interactions with professionals in organizations during their captivity in *the Life*. The study concludes that the barriers are complex and do not occur in isolation. As such, the survivor's description in context of their lived experience dictates interventions in the complicated and difficult situations of DMST. The analytical results reveal a *Maze* of non-linear barriers, not in the literature. The findings support a non-linear labyrinth of complex and repetitive traumatic experiences and decisions. The mental and emotional inner turmoil grows with adolescent development over time, influencing the timing and the decisions to elope as eventual maturity occurs out of *the Life*.

Figure 1

The War Maze



Nonetheless, parallel psychological and social literature supports the findings in this research for survivors experiencing complex trauma. The literature supports that the length of time in coercive traumatic environments (e.g., family violence and child abuse followed by DMST), coupled with physiological dysregulation results in predictable physiological and psychological changes in the person exposed to *the Life*. With the complex environmental dynamics in repetitive elopement thinking and limited choices to act, the stress response becomes a barrier that creates the sensation of fear, followed by reactionary maladaptive behaviors to ensure personal safety.

The literature supports the coercive nature of *the Life.* To understand the coercive nature of *the Life,* some participants articulated dis-comfort in *becoming their own trafficker*. They describe their involvement in *the Life*, referring to *the Life* as a lifestyle addiction, a thrill of making money for their addiction, feelings of belonging to a group, and a hidden individual empowerment as the entrepreneur. The aberrant role of *my own trafficker* in the reflections encapsulates a complex picture about coercion, addiction, and in *the Life,* the only choice to separate from trafficker to survive by "tricking."[4] An awareness of gradations of coercion blurred their boundaries and their decisions. Having a drug addiction and becoming entrapped by an abusive boyfriend-type relationship (interpersonal barrier) increased violent exploitation and expanded the barriers to elopement. Perceptions of trafficker manipulation and coercion, increasing throughout the DMST experience, informs the analysis about the inner confusion while in DMST. In order to understand disclosure and the inner confusion, the participants revealed staggered times for advancing their thinking during each subsequent year in DMST, reflecting developmental growth. As a result, the study identified characteristics of self-blame, shame, and a naïve view of themselves (in that they did not identify as victim at the time). Another identified outcome was uncovered as disclosures of increasing struggles with addiction and recovery prevented them from developing an understanding about their situation and their personal identity, with consequence of labeling and branding (tattoo), which created another non-linear blind path increasing entrapment in *The Maze*. Non-linear entrapment delays development of identity, as well as identification, cooperation, and support in their efforts to elope DMST.

This study supports early identification and removal from *the Life* in order to prevent identity crisis, shame, guilt, hopelessness, worthlessness, not to mention adverse health and psychological outcomes, all related to vast exposure to violence, exploitation, danger, and drugs in the adolescent DMST victim. The sub-category *professional silos* offer opportunity for organizational and provider intervention, identifying several barriers specific to organizations and their employees. The study captures the DMST survivors' perception of providers' opinions (e.g., labeling) about them. In profound ways, *professional silos* in this study, every participant reported negative impact on their individual and interpersonal relationships, and ultimately, their elopement decision. The internalization of treatment from all participants described being invisible to the outside world with perceptions of judgement, labeling, and the lack of personal acknowledgment of and support by providers that discouraged disclosures in health care settings, law enforcement encounters, and other organizations. The overarching findings also suggest that trust is a major Theme in the disclosure of their situation – *the Life*. Trust developed over time with multiple encounters. The study supports *seeing* the person as an individual, focusing on the individual and their experiences, their relationships with the environment, and creating safe institutional environments, which begins the removal of one of the major identified barriers – lack

[4] "Tricking" is selling self to provide money for addictions (Lisa)

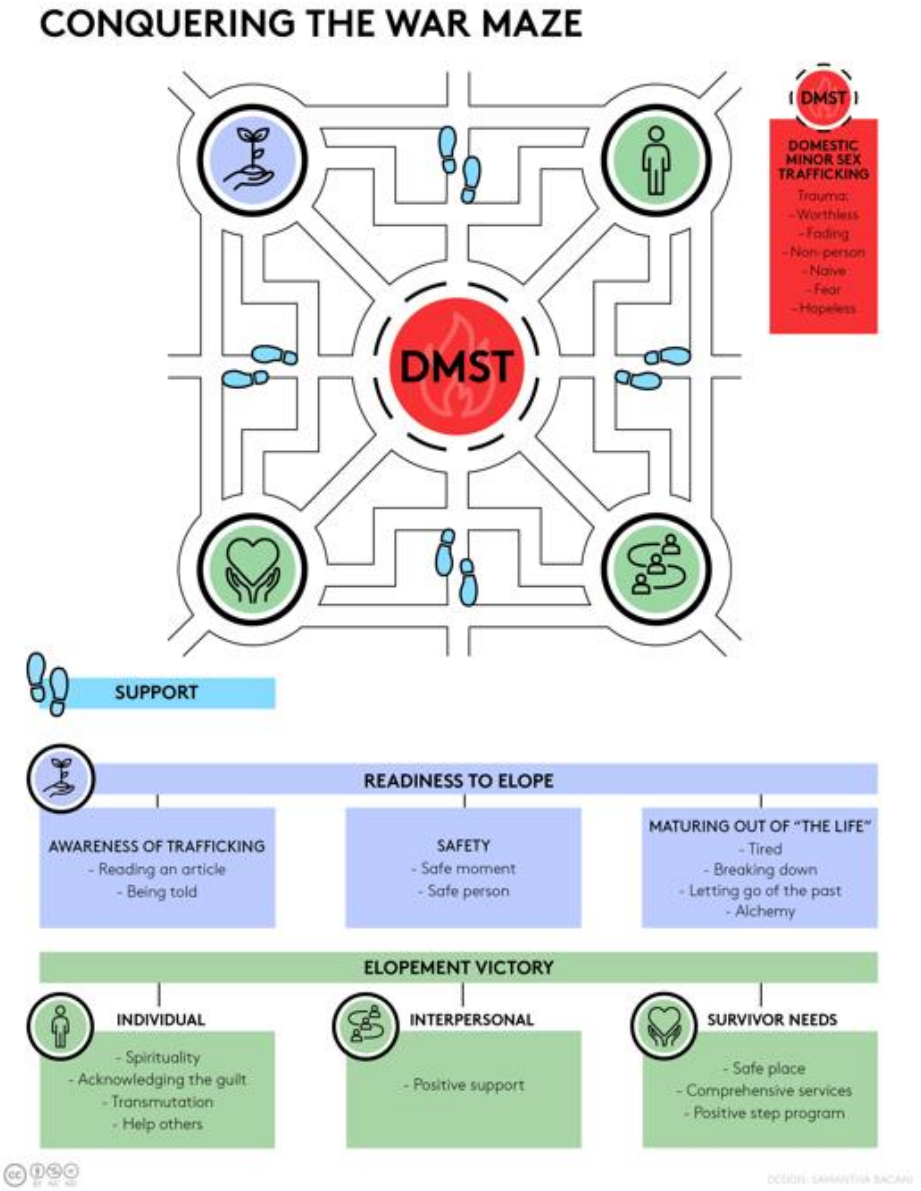
of trust (Author, 2022). This finding supports and promotes the application of trauma informed care interventions (Author, 2022), where principles of safety are a necessary step to begin the development of trust (SAMHSA, 2014).

The study also reveals the interpretation of the adolescent experience, discovering their shared experience in *seeking safety. Seeking safety* and the barriers identified show evidence for participants' reasoning for staying in *the Life*, which includes exchanging sex for shelter, sleep, or protection (safety). These behaviors to seek safety are understandable given their childhood home environment (such as sexual abuse). Explaining *seeking safety*, the participants lamented they were not safe in their homes. Consequently, all left their homes voluntarily (runaway), seeking safety relationships from the streets. For others, their histories made them vulnerable to entrapment by traffickers. The study findings also suggest a construct of complex early childhood traumas in the DMST participant, which includes prolonged relational and repetitive emotional attachment traumas in the core family (as opposed to one trauma in isolation). The participants described the pain of not having a supportive mother (emotional abandonment through death, negative communication, and lack of support) without stability from significant caregivers. Maternal deprivation resulted in an intense impact followed by behavioral and emotional responses. Understanding attachment and abandonment disorders are opportunities for health care providers to screen and intervene with children exposed to family violence, parental death, attachment disorders, abandonment, or child maltreatment.

Conquering the War Maze (Figure 2) is the second related theme describing the process of elopement defined by the participants. As development progressed, their growing awareness about DMST occurred over time as they aged and gained skills and exposure to experiences in *the Life*, which aided their elopement thinking. The sub-theme *readiness to elope* included a universal awareness about trafficking (putting a name to their victimization); safety (finding a safe moment); and a developmental maturation or maturing out of *the Life* (finding *alchemy*). Additionally, the *elopement victory* sub-theme included an enhanced belief in themselves (individual); a positive support (interpersonal); and eventual meeting their basic survivor needs (organizational). The decision to leave DMST was trust development during individual and interpersonal sub-categories, reflecting and overcoming the traffickers' coercive tactics. The participant's developmental insight, trusting in the *survivor needs* sub-category offered a logic to their motivation to leave when the professionals provided safety, comprehensive services, and understanding of their identity crisis (positive step programs), which guaranteed successful elopement. These sub-themes of *readiness to elope* and *elopement victory* became the prerequisite for successful distancing from *the Life*. The opportunity for elopement both before, during, and after the revelatory moment resulted in the emergence of a new life. These findings also demonstrate the need for trauma-informed and person-centered programs that promote safety, trustworthiness and transparency, peer support, collaboration and mutual support, empowerment (voice and choice), and cultural and historical sensitivity (SAMHSA, 2014). The nurture necessary for individual conquering, which is a practiced over-coming, requires rewarding self-efficacy in the process (finding the positive), using the trauma informed principles. Understanding *Conquering the War Maze* underscores need for trauma informed principles in effective networking, inter-agency collaboration, and training about the dynamics of DMST for a broad range of service providers.

Figure 2

Conquering the War Maze



Implications for Research and Practice

The implications for practice and research are vast. The qualitative findings about the elopement process provides insight into the lived experience of DMST and eventual elopement. Revealed is an elopement process that is an extremely complex, multi-faceted developmental progression for victims of DMST, offering multiple opportunities for health care and justice practice interventions and additional research on the effectiveness of the interventions. The study supplied a structure to the elopement process with specific themes, sub-themes, sub-categories, and themes and another area for exploration about unique elements in *the Life's* coercive

entanglement. Another area for study is reflections about thoughts leading to readiness to elope, a consciousness plan, and elopement victory. Future research considers the non-linear trajectory juxtaposed to the adolescent growth and development stages, their delays in the expected activities of the child, and pseudo-maturity that develops in stressed children. Another area of future studies is their adverse childhood experiences with maltreatment history in the DMST populations post-TVPA.

The research informs prevention and intervention using trauma informed patient centered programs in healthcare settings. Although this study initially employed two non-nursing theory models, Life Course Theory and Theory of Coercion, neither fully explained the nonlinear elopement maze uncovered in this research. For nurses and other healthcare providers, the Neuman System Model (Neuman, 1972) delivers a full explanation and opportunity for research using a system's model to explain the non-liner labyrinth in elopement and recovery. The labyrinth of barriers reflects the multiplicity of stressors familiar in complex DMST traumas (from social, economic, physical, and mental), and drives healthcare planning to meet complex needs in the elopement process. The non-linear maze explained the challenges for this newly identified never-served population. The successful support and treatment remain elusive for many. The labyrinth maze is a platform for healthcare providers to evaluate not only the DMST survivors, but all survivors trapped in coercive conditions, whether individual, interpersonal, or professional environments.

Conclusion

The Life is a unique experience with complex trauma and is a significant public health problem. The reality is that many victims go unnoticed by professionals and systems. DMST victims do not experience interventions until adulthood, which leads to negative long-lasting physical and psychological health outcomes. Therefore, understanding, recognition and intervention with adolescents in DMST by systems is essential to enabling the early elopement process. Evidence based innovative interventions explore new ways of facilitating victim removal at an earlier age. Necessary is an avenue of compassion and empathy about their lived experiences. Compassionate interventions promoting safety empower the person in *the Life* and discourage further acts of victimization. Helping victims explore a life away from their trafficking circumstances, with innovative comprehensive evidence-based trauma-informed person-centered approaches, meets survivors' needs. Safety is essential as a trauma-informed care principle, setting the stage for future healthcare research. The study's analysis of participant disclosures reveals a *non-linear Maze affecting the developmental process* with *repetitive barriers* forcing calculated decisions by the adolescent to remain safe first. The study found that the elopement experience is affected by adverse childhood experiences, inevitable growth and development and maturation, awareness, and knowledge building, coupled with opportunities for safety, and *The Maze* is an innovative platform for future healthcare research and practice.

Acknowledgements

Dissertation Committee Members:

Drs. Rula Btoush, Teri Lindgren, Barbara Caldwell, Linda Flynn
Research Assistant, Ms. Jennifer Spry
Graphic Designer, Samantha Bacani
New Jersey Coalition Against Human Trafficking (NJCAHT)
National Survivors Network

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Journal of the Academy of Forensic Nursing

Practice Perspectives

Xylazine: An Emerging Cause of Death in Correctional Institutions

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Received: August 16, 2023 Accepted: Oct 31, 2023

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Abstract

The unregulated veterinary drug xylazine is emerging as a cause of death in State Correctional facilities. Unlike the drug fentanyl, there is no antidote. The origins and toxicity of the drug are discussed and illustrated with a case study of an offender death due to xylazine mixed with fentanyl. There are precautions that prison officials can take, and correctional nurses that encounter users will be informed and better able to assess offenders for possible xylazine use due to physical signs on examination.

Keywords: xylazine, death in custody, drug overdose

Xylazine: An Emerging Cause of Death in Correctional Institutions

Xylazine, (trade name Rompun®) known on the street as "tranq," is making its mark on a rural Missouri county, showing up in the local maximum-security prison resulting in two offender deaths within six months in 2022. Unlike fentanyl, which is identified and treated emergently with Narcan®, xylazine has no approved antidote for humans. It is NOT a federally controlled substance (McAward, 2021), but is regulated under the Federal Food, Drug and Cosmetic Act (FDA) and is approved by the FDA under NADA # 047-956.

Introduction

Xylazine is an analogue of the common drug clonidine hydrochloride used to treat hypertension but is only authorized for veterinary use due to its potentially lethal side effects that include bradycardia and profound hypotension. It is an α2-adrenergic agonist that acts via stimulation of central α2-receptors (Greene & Thurmon, 1988). Early clinical studies confirmed

its' effects on the central nervous system. Today xylazine is only approved in the United States for use in dogs, cats, horses and various deer species as a sedative, analgesic and muscle relaxer. (Greene & Thurmon, 1988; Ruiz-Colón et al., 2014).

The illicit human use of xylazine first became apparent in Puerto Rico in the year 2000. Its use was associated with a high number of inmate deaths at the Guerrero Correctional Institution in Aguadilla, Puerto Rico, from 2002 to 2008 (Torruella, 2011). The Drug Enforcement Agency (DEA) Joint Intelligence report on Xylazine states "The emergence of xylazine across the United States appears to be following the same path as fentanyl, beginning with white powder heroin markets in the Northeast before spreading to the South, and then working its way into drug markets westward. Philadelphia has been extremely hard hit by xylazine. Philadelphia health officials say the drug was first detected in that city in 2006. The number of fatal overdoses in Philadelphia involving xylazine have increased every year: from 15 in 2015 to 434 in 2021, according to the Philadelphia Department of Public Health (Rotuno-Johnson, 2023).

This rising pattern of fatal overdoses indicates that use of xylazine as an adulterant will likely continue to increase and to be commonly encountered in the illicit fentanyl supply. Xylazine use throughout the United States may also follow the pattern seen in Puerto Rico and emerge as a drug of abuse on its own in the future, although it is unlikely to replace fentanyl or other opioids among illicit drug users. (Drug Enforcement Administration, 2022)

Commercial Availability

Despite being a medication approved only for use in certain animals and not for humans, xylazine is relatively easy to purchase through online on several veterinary medicine sites. Although a prescription is generally required (NextGen Pharmaceuticals, 2020, xylazine can also be purchased directly from the veterinary office, a process commonly used by farriers, who purchase the drug to calm some horses to enable shoeing. It is increasingly appearing among street drugs (Miller, 2023). suggesting it can be accessed if desired.

Toxicity in Humans

In most cases, xylazine is mixed with another drug, frequently fentanyl, making the pharmacokinetics of xylazine largely unknown. While naloxone reverses the effects of fentanyl, death can still occur with fatal overdose cases seen with xylazine levels from trace to 16 ng/ml (Silva-Torres, L. et al., 2014). There is no "safe" dose of xylazine in humans.

Xylazine can be administered orally, by inhalation, injection in vein, muscle or subcutaneously, with intravenous injection the most common route. (Ayub, S, etal.,2023). In animal studies, effects are usually seen within 15 minutes after administration, with sedative effect lasting 1 – 4 hours. The drug diffuses readily throughout the body, penetrating the blood-brain barrier, 70% of the dose is eliminated in the urine, making it useful in detecting xylazine intoxication. Due to rapid metabolism, xylazine decreases fairly rapidly to undetectable levels, so procurement of toxicological specimens as soon as possible is recommended. (Friedman, J. et al., 2022).

Antidotes

Although there is no approved antidote to xylazine in humans, the drug has been effectively counteracted in veterinary practice. The natural herb yohimbine, a α2 adrenergic antagonist, has been shown to reverse the antihypertensive effects of xylazine in dogs and elephants.

The drug atipamezole is another α2-antagonist used to reverse the effects of xylazine, and while this has been tested in humans in Phase I trials, it is not an approved medical treatment for xylazine overdose (McAward, 2021). Consequently, to date all overdose deaths in offenders where xylazine is found are fatal.

Appearance of Xylazine Users

As xylazine is commonly injected and mixed with other drugs, particularly fentanyl, the symptoms of pinpoint pupils, physical deterioration, dependence and track marks will be evident. In addition, chronic xylazine users develop serious non-healing infected skin ulcers due to skin oxygen deficit following hypotension, bradycardia and respiratory depression secondary to use of the drug. The ulcers are not generally due to injection trauma. As illustrated in the case study that follows, the ulcers may ooze pus and have a characteristic odor. In severe cases, amputations must be performed on the affected extremities (Torruella, 2011).

Case study

A 42-year-old male offender at a local State Correctional Facility was found unresponsive at 12:45 am. CPR was initiated, and he was brought to medical ER at the facility, 4 doses of Narcan® were administered without effect. EMS arrived and took over CPR and ACLS without response. The code was called by the physician at 0125. Autopsy was completed and toxicology was positive for xylazine at 16 ng/ml, fentanyl at 6.8 ng/ml, norfentanyl 0.44 ng/ml. and 4-ANPP (an inert ingredient added to some batches of fentanyl). Of note, decedent presented to medical at the correctional facility two weeks prior to his death with complaint of "pus bumps" on his skin, a known side effect of xylazine use. A biopsy was scheduled, but not completed prior to his death (Alexander et al., 2022; Kariisa et al., 2021).

Conclusion

Xylazine is an emerging drug contributing to fatalities in correctional institutions with no antidote approved for human use. Personnel in correctional medical facilities should therefore be aware of the potential presence of xylazine. Markers of xylazine use include very distinct odorous pustular lesions that can be found anywhere on the body due to the ability of the drug to rob the skin of oxygen. Currently there is no field test for xylazine, but it is readily detected in blood or urine in expanded testing completed by forensic laboratories.

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Case Study

A Case Study: Is This Elder Abuse?

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Received: October 25, 2023 Accepted: November 8, 2023

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Introduction

The aging population in the U.S. is predicted to grow substantially more than double than in 2000, reaching approximately 80.8 million older individuals by 2040 and increasing to 94.7 million by 2060 (U.S. Department of Health and Human Services Administration for Community Living, 2021). Nurses possess the authority to assess the health, well-being, and potential risk of violence or abuse in individuals of all age groups. However, the identification of elder maltreatment falls behind the identification of child abuse and interpersonal violence (Goldstein & Glass, 2020). Filling the gap in nursing knowledge about elder and vulnerable person maltreatment is essential to build confidence in screening older and vulnerable adults. By identifying their risks, recognizing cardinal signs of physical abuse and neglect, and evaluating past and current experiences of maltreatment, nurses have the potential to improve the lives of older and vulnerable persons. Building knowledge about the elder maltreatment begins with the definition, which is "any action or neglect that harms or poses a risk to an older adult [or vulnerable dependent adult], perpetrated by someone in a position of trust or targeted towards them due to their age or disability. Th[e] mistreatment, also referred to as elder abuse, encompasses a range of forms such as physical abuse, sexual abuse, psychological abuse, financial exploitation, benefits trafficking, and neglect" (Rosen et al., 2020, p. 295).

Despite mandatory reporting protocols, professionals often exhibit hesitancy in reporting cases of abuse. Reasons for a reluctance includes fear of making a mistake, lack of evident physical signs, or concerns that reporting might exacerbate the abuse (Carney, 2020a). Therefore, systems that have specialized *advanced and generalist* [1]forensic nurse experts in elder maltreatment or abuse is essential when abuse is suspected. Seeking immediate consultation is important because not all injuries are the result of maltreatment or abuse. Injuries happen for a wide variety of reasons, and confirming a diagnosis occurs only after the provider rules out all differential diagnoses. To make assumptions about the cause of an injury without identifiable evidence and analysis is a form of bias to avoid.

In the context of a compelling case study, authors highlight the essential consequence of promptly referring elder maltreatment and abuse cases to an expert forensic team in elder abuse. By referring to the experts, nurses have a critical role in safeguarding the well-being and dignity of older adults, ensuring that older and vulnerable persons receive care and protection.

Case Presentation

In the scenario, a distressing incident involving a 75-year-old woman unfolds. The elderly woman called 911 seeking help to get up from the floor, refusing to be taken to the emergency department. Upon arrival, paramedics discovered her lying on the floor with her rolling walker nearby. Although awake and alert, she complains of discomfort in her left shoulder. A closer examination by the paramedics finds: bruising on her right and left arms, impaired leg movement preventing her from sitting up, bilateral weakness in her grip, and with manipulation, pain in her left arm. The woman shares a brief medical history, including a 4-vessel heart bypass 13 years ago, a right rotator cuff repair 10 years ago, a right hip repair 4 years ago, and a diagnosis of muscular dystrophy in the last year. When questioned about her muscular dystrophy, she refers to her sister as the source of detailed information. When asked about anyone being present before her fall, she mentions living alone since her husband's death eight months ago, but her daughter and granddaughter assist her with placing compression stockings on for lymphedema in the morning and removing them in the evening. After a discussion with the patient, the evidence supported referral for a comprehensive hospital assessment, which is essential as paramedic concerns about the injuries included extension beyond mere joint and limb pain resulting from the fall. The approach to the patient was trauma-informed and compassionate with understanding about her difficult choices. She agreed to transport to take her to the hospital for further evaluation and care.

Upon reaching the emergency department, the triage nurse moved to a private room to screen the patient for maltreatment by asking, “Do you feel safe in your home?” To which the patient says, “Yes.” During the nurse’s assessment, three large areas of bruising on the patient’s arms and smaller bruises on her legs on both sides of her body were in various stages of healing, reporting her pain level as 8/10. She mentions allergies to all pain medications except morphine, and says she is sensitive to morphine’s effects. Imaging reveal fractures to the left humerus and ulna. While waiting for the orthopedic surgeon, the emergency nurse shares her suspicion about abuse with the charge nurse and bases her concern on the injuries and fractures seen. Responding

[1] The American Association of Colleges of Nursing (2021) define *Level 1* as Entry-Level Professional Nursing Education sub-competencies, e.g., Generalist Forensic Nurse, and *Level 2* as Advanced-Level Nursing Education sub-competencies and specialty role requirements and competencies, e.g., Advanced Forensic Nurse.

promptly, the charge nurse involved the hospital's team of *forensic nurses*[2] to explore the situation further. The case underscores the importance of skilled assessments with comprehensive interventions when there is suspicion of vulnerable or older person maltreatment. By referring to a specialized team of generalist and advanced forensic nurses, the medical professionals are ensuring comprehensive wrap around services to protect the person's well-being and safety and guarantees an evaluation by forensic nurse experts and the interprofessional team.

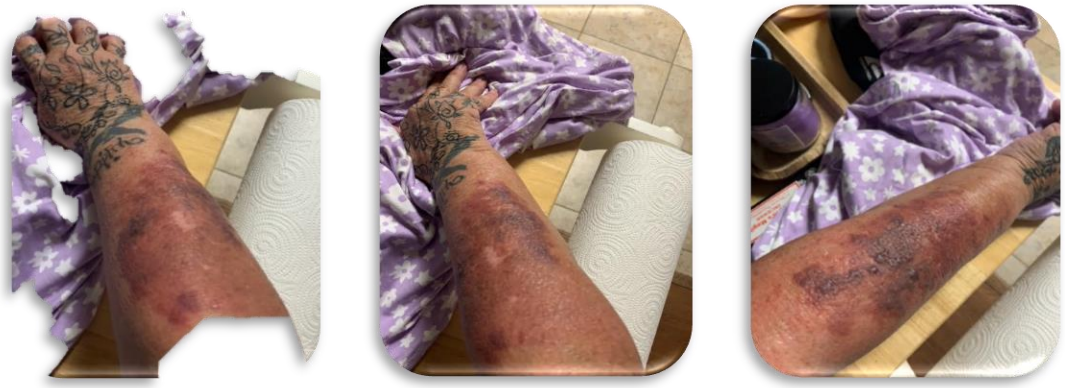
Management and Outcome

The responding advanced forensic nurse thoroughly reviewed the nurse's assessment and their concerns. Using a trauma-informed approach with introductions before proceeding, permission was sought and obtained, specifically to talk about the patient's concerns (Dowdell & Speck, 2022). Seeking permission for informed consent is the first step in creating safety, respecting the person's autonomy, and ensuring transparency, thereby giving voice and choice to the patient (SAMHSA, 2014). Conducting a comprehensive forensic medical exam, the generalist forensic nurse observed and meticulously documented the numerous injuries during the evaluation, following photography guidelines for a visual record. Throughout the permission seeking process, the patient cooperated with the forensic nurse team and provided valuable information regarding the timeline and circumstance of the injury causes. The trauma-informed approach increased her willingness to share details to determine the mechanism of injury to the affected areas. Images serve as important contributions to explanations that demonstrate understanding of the extent and nature of the injuries, whether abusive or unintentional.

For illustrative purposes in Figures 1, 2, and 3, authors selected photographs to showcase injuries often mistaken for abusive injuries but are a result of underlying medical issues.

Figures 1, 2, 3

Right forearm

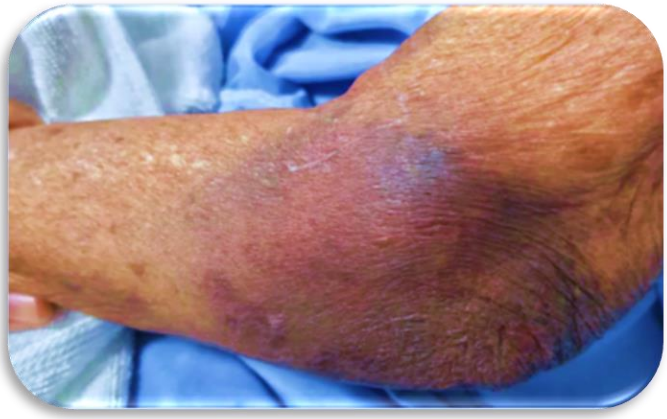


Photos used with permission © Dr. Meliss Batchen.
Description: dorsal aspect of right arm, irregularly shaped, red, and purple discolorations with deep purple areas slightly raised, located two inches above wrist extending to two inches below antecubital space, length 8 inches by width 6 inches, pain 2 out of 10, "I must have bumped my arm when I fell." Photos were captured on a personal cell phone by a family member prior to transport to the hospital.

[2] Generalist and Advanced Forensic Nurses in elder maltreatment work in teams, collaborating with risk management, geriatricians, geriatric nurse practitioners, government agencies, and community stakeholders ensuring comprehensive wrap-around services.

Figure 4

Left forearm



Photos used with permission ©Dr. Meliss Batchen

Description: Dorsal aspect of the left arm with a focus on the left elbow, area of circular redness and purple discoloration, diameter approximately 9 inches, swelling, and pain of 8 out of 10, "I tried to catch myself, but I fell on my left side and my arm and shoulder hurt."

Respecting the patient's autonomy and demonstrating transparency and mutuality, the advanced forensic nurse, sought, and obtained permission to communicate with the patient's sister. A private consultation room allowed for a compassionate and thorough phone interview with the sister who provided valuable insight into the patient's past medical history, current health status and medical diagnoses, medications, and living conditions. The collaborative efforts of the sister with the forensic nurse resulted in a comprehensive understanding of the patient's situation.

With the sister's information, the patient underwent a thorough evaluation by an orthopedic surgeon, who determined that her fractured humeral head urgently required a shoulder hemiarthroplasty or partial shoulder replacement with a metal implant. In addition, the patient had a minimally displaced proximal ulnar fracture, which required a cast from her fingertips to just below the elbow to control forearm rotation and prevent further displacement. The orthopedic surgeon attributed both fractures to the patient's history of falling. Humeral head fractures in the older population are typically seen in women after a ground-level fall (Attum & Thompson, 2023). The ulnar fracture likely occurred from an axial load applied to the forearm through the hand as an attempt to stop the fall (Sharareh & Riehl, 2021). The surgical staff prepared to take the patient to surgery and the ortho-tech casted the arm in the emergency department, delivering timely interventions. With the entire record, including evaluative findings and the information shared during the patient and sister interviews, the team of forensic nurses met with medical and nursing providers involved in the patient's care to review the evidence. Informed, the team created collaborative decisions, acceptable to the patient and family to foster the patient's well-being.

Forensic Medical Legal Evaluation Results

The consensus conclusion for the patient revealed that the multiple bruises were a result of her instability and frequent bumps into objects, even when using a walker. She explained that occasional thigh and leg bruises occurred when her family assisted her with compression stockings, when the hands slipped because the leg swelling made it difficult to don the socks. Understanding the activity and circumstance helped reveal the cause of bruises, avoiding misinterpretation of intentional injury and abusive maltreatment.

Maintaining a high index of suspicion, based on evidence, for elder and vulnerable person maltreatment and abuse is essential for a healthy population of community dwellers. The

knowledge necessary considers the impact of the underlying health issues on the overall health and well-being of individuals. As demonstrated in this case, it is difficult to distinguish between intentional physical abuse and the sequelae of unintentional injury due to medical conditions. So, the question to be answered is, do injury patterns of individuals with confirmed elder abuse differ from those of elderly persons with accidental falls? The evidence suggests that there is an association of abuse with traumatic findings. One study compared injuries in 78 cases of confirmed elder abuse and 78 cases of elders with unintentional injuries (Rosen et al., 2020) and the differences are outlined in Table 1.

Table 1

Injuries in Elder Physical Abuse Victims versus Elders with Unintentional Trauma

Injury Types and Locations	Abuse Victims	Unintentional Trauma
Bruising on maxillofacial, dental, or neck areas	78%	54%
Injuries in maxillofacial, dental, or neck areas	67%	28%
Injuries to the left cheek or zygoma	22%	3%
Injuries on neck	15%	0%
Injuries on ear	6%	0%
Maxillofacial, dental, or neck injuries combined with no upper and lower extremity injuries	50%	8%
Fractures	8%	22%
Lower Extremity Injuries	9%	41%

(Rosen et al., 2020)

With the guidance of Rosen et al (2020) research findings, the team of forensic nurses determined that the patient in this case study had fractures and lower extremity injuries consistent with unintentional injuries, confirmed during the interprofessional team case review. However, knowledgeable advanced forensic nurses have a high index of suspicion for intentional injury while considering underlying health issues, especially diagnoses that increase the potential for unintentional injury. Therefore, the interdisciplinary and interprofessional teams, which include the advanced forensic nurse, work collaboratively to comprehensively address the patient's needs. In the case, even though the government’s Adult/Elder Protective Services was not notified, the interprofessional team was proactive and consulted social services to ensure the patient received appropriate support. Social services led the community referrals for in-home physical therapy and occupational therapy to assess mobility concerns, evaluate environmental safety, and provide necessary resources, all aimed at enhancing the patient's overall well-being and safety when returning home.

Throughout this process, the collaborative efforts of the forensic nurse, medical professionals, and social services exemplified the person-centered approach espoused in the AACN *Essentials*. The team not only addressed the patient's immediate medical needs but also considered her overall well-being in the context of potential elder maltreatment or abuse concerns. The trauma-informed and compassionate comprehensive approach underscores the need for forensic nurse experts in elder maltreatment and abuse while they advocate for and safeguard vulnerable individuals in the healthcare system.

Discussion

The patient has an onset late-onset neuromuscular disease that presents symptoms and mobility issues that are easily perceived as advanced age-related changes. Interpretation includes a possible neurological injury from her fall. The knowledge that many neuromuscular diseases present late-onset symptoms helps healthcare professionals assess and treat older or vulnerable patients accurately without bias. Consideration includes that many older patients are not aware of a decline in safe activities with a neuromuscular disease diagnosis. The information provided to health care staff by the patient's sister revealed that the patient did not know about her neuromuscular disease until she was genetically tested at age 72, after her sister and first cousin were diagnosed with the same neuromuscular disease! Incorrectly, the patient attributed physical mobility issues to a history of her advancing age and life-long orthopedic health problems.

A broad definition of a neuromuscular disorder encompasses a diverse group of conditions that affect the peripheral nervous system, including all motor and sensory nerves connecting the brain and spinal cord to the body (University of Michigan Health, 2022). The key hallmark is progressive muscle weakness. However, the age of onset, level of mobility impairment, and rate of progression varies significantly across different neuromuscular diseases.

Certain neuromuscular diseases emerge at ages 50, 60, or 70 and are mistakenly attributed to normal aging. The limited healthcare professional knowledge about neuromuscular diseases leads to misdiagnoses, delayed treatments, and subsequent challenges in recognizing and understanding symptomology, usual age of symptom onset, rates of progression, organ and/or bodily system involvement. A variety of common neuromuscular diseases and their corresponding variable age of symptom onset v recognition are in Table 2.

Table 2

Neuromuscular Diseases and Symptom Onset

Neuromuscular Disease	Age of Symptom Onset
Limb-Girdle Muscular Dystrophy (Over 43 types and subtypes)	Usually in adulthood, but onset can be as early as childhood or as late as ages 50-70 years
Amyotrophic Lateral Sclerosis (ALS)	Usually between 40-70 years
Inclusion Body Myositis	Typically, over 50 years
Polymyositis	Usually between 30-60 years
Guillain-Barré Syndrome	Any age
Myasthenia Gravis	Any age
Facioscapulohumeral Muscular Dystrophy	Teenage years to adulthood
Charcot-Marie-Tooth Disease	Childhood or early adulthood with few types in late adulthood
Becker Muscular Dystrophy	Childhood to early adulthood
Duchenne Muscular Dystrophy	Childhood (2-6 years)
Spinal Muscular Atrophy	Infancy or early childhood

Symptom onset is often earlier than the age at diagnosis because some neuromuscular diseases have subtle early symptoms, becoming more evident over time. Consulting with a variety of healthcare professionals ensures accurate diagnosis and individualized management of neuromuscular diseases. (NYU Langone Health, 2023). By promoting better understanding and knowledge-sharing among healthcare professionals, nurses find opportunity to improve the early detection and accurate diagnosis of neuromuscular diseases, enabling timely interventions and personalized care plans for patients. The primary care physician (PCP), who is familiar with the patient's specific disease, along with other specialized physicians, enhance the coordination of care and facilitate a holistic approach to managing the patient's disease progress. Open communication and collaboration among healthcare providers and the stakeholder community ensures the collaborative effort enhances effective and safe community care for patients with neuromuscular disorders, improving quality of life and outcomes for individuals with neuromuscular disease.

Other nursing considerations in busy healthcare settings require knowledge of or suspicion of the existence of a neuromuscular disease. If limited knowledge, the nurse evaluates the history of frequent falls, and the impact of pain medication on patients who may have difficulty communicating or providing medical information. In this case, nurse is suspicious because the patient had a history of falls, and currently needed pain medication due to the fractures. In a short time, she would undergo anesthesia for the surgical repair of her fractures. The evidence supports that patients who have neuromuscular diseases infrequently experience more significant adverse effects from certain pain medications and anesthetics due to the suppression of neuromuscular function (Katz & Murphy, 2017). A careful preoperative assessment prevents complications of worsening muscle weakness that contributes to postoperative respiratory failure and/or prolonged intubation.

The patient's desire to live independently aligns with research findings that highlight how older individuals often anticipate mobility changes and make adaptive changes accordingly (Moller, Martinsen, Werlauff, & Dreyer, 2021). While maintaining independence is essential for their well-being, safety hazards increase with a patient's limitations and abilities. Nurses prevent poor outcomes, e.g., aspiration, falls, and pressure sore development, with careful monitoring, continual assessment, and implementation of hazard reduction strategies (Clemson, et al., 2019).

Implications for Practice

Acknowledging autonomy in older and vulnerable persons often lead to hesitation in reporting abuse. The hesitation is due to various reasons, such as fear of punishment, loss of independence, or embarrassment (Carney, 2020a). Healthcare organizations are required by The Joint Commission (2022) to have written criteria to identify potential abuse victims and to report such cases to external agencies in compliance with laws and regulations. A scoping review of multiple elder assessment tools highlighted more recently developed tools (Van Royen et al., 2020). In the case presented here, the emergency nurse followed institutional policy by asking about abuse. With suspicion, the charge nurse enlisted the forensic nurse team of elder maltreatment experts for a more robust and structured assessment. With trauma informed care, additional details about the home environment and a neuromuscular disease contributor to unintentional injury emerged. The forensic team of elder maltreatment experts and stakeholders created a comprehensive plan of care that utilized community resources to address the needs of the patient and the family.

Summary

An elder abuse expert, Dr. Amy Carney (2020b) published, “Not every bruise is abuse, and not every fall is suspicious….it is important to be able to identify disease processes and accidental injury that mimic maltreatment” (p. 24). Healthcare providers who adopt a trauma-informed, person-centered approach adapt their care plans from the very first encounter to the abilities and limitations of the older or vulnerable person. To fill the gap in knowledge, all healthcare professionals ought to receive training to recognize maltreatment of older and vulnerable persons, identify and evaluate conditions that mimic abuse, document objective findings, and report injuries and signs that indicate maltreatment or abuse. Collaborative strategies involving various interprofessional partners, including generalist and advanced forensic nurses, physical and occupational therapists, social services, advocacy organizations, elder protection services, law enforcement, and other community stakeholders, are essential to comprehensively manage the healthcare consequences of disease processes effectively.

The meticulous work and attention to detail demonstrated by the emergency nurses and team of forensic nurses were pivotal in unraveling the truth behind the patient's injuries, contributing to a thorough and impartial assessment, collecting the data to arrive at a diagnostic conclusion. Their dedication and expertise played a pivotal role in protecting all older and vulnerable persons like the patient from intrusive and maligned bias and highlighted the important specialized knowledge of elder maltreatment and abuse possessed by the generalist and advanced forensic nurse in cases of suspected older and vulnerable person maltreatment.

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Research Corner

Trustworthiness of Research Results: Significant or Not?

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Received: October 25, 2023 Accepted: November 22, 2023

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Abstract

Evidence-informed practice relies on integration of trusted research into decisions about care in collaboration with the patient's wishes, available resources, and professional knowledge. Determining whether the research is trustworthy, the professional requires an understanding of the quality of the research and potential for errors. Nurses receive a basic research course in their baccalaureate training, but sometimes find it is difficult to apply research knowledge, relying only on word-of-mouth best practice statements. Assessing the trustworthiness of research is important to treatment decisions, to patient teaching, and to use of the evidence in court. The focus of the article is to review core concepts central to error and design. Using the decision tree method helps recognize and apply error and design concepts to determine trustworthiness. By using the method, all nurses can examine current and future study findings with confidence to support and defend evidence informed decision-making in their practices.

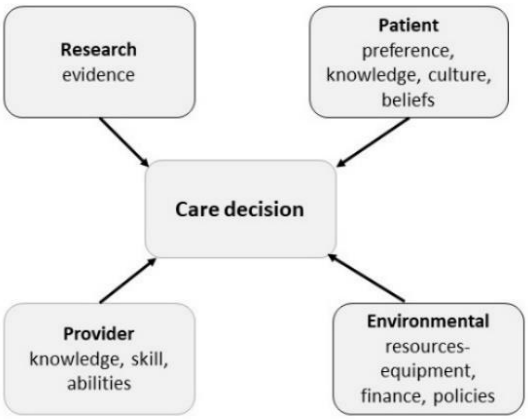
Keywords: research, evidence informed decision making, type I error, Type II error, significance, power

Introduction

The importance of supporting nursing practice with research is well recognized. The concept of *evidence-**based** medicine* emerged in the 1990s, which focused on ensuring all practice was supported by the best research (Guyatt et al., 1992. Evidence-based medicine gives preference to high levels of research quality, specifically the randomized controlled trial (RCT) or systematic review. These will be discussed later, but the designs control for error and alternate explanations for results. There are not RCTs available to support all nursing practices and are sometimes not possible or ethical to conduct. In addition, it is also recognized that research is not the only source of evidence to support practice. The authors of the evidence-based medicine expanded their definition to include the role of clinician expertise (Sackett et al., 1996). There are additional sources, however, including and patient culture, experience, or beliefs, resources, and the environment (physical, social, political) in which practice occurs. Alternatively, the concept of *evidence-**informed** practice* has been proposed (Kumah, McSherry, Bettany-Saltikov, & van Schaik, 2022. Evidence-informed practice uses all forms of evidence (Figure 1) to reach a collaborative decision with the patient (Kumah, McSherry, Bettany-Saltikov, & van Schaik, 2022). Evidence-informed practice is also seen as more inclusive of critical thinking than evidence-based practice (Kumah, McSherry, Bettany-Saltikov, van Shaik, et al., 2022), which is important for nursing practice.

Figure 1.

Evidence-informed Practice



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If considering research evidence for potential use in practice, nurses must assess the quality of the research before deciding whether to use it in practice. The research results may help support decisions to use new products or treatments, to answer patients' questions about treatments they read about, or to support updated nursing curricula. If required to give expert opinion when testifying as a nurse, the essential element is that the nurse understand the difference between opinion and the quality and trustworthiness of the science supporting their clinical decisions and interventions. For the nurse, the essential element is to ensure that the scientific evidence is safe and of sufficient quality to support the nurse's decisions.

Two cases are included in this article to illustrate how to make trustworthiness decisions. One case has significant results, and one has non-significant results. After reviewing some core research concepts, these cases will be used to illustrate the use of a decision tree will be used to help guide you through determining a study's trustworthiness.

> **Case 1.** A medical supply representative is encouraging a hospital department to purchase a new type of skin disinfectant. He produces a study the company sponsored in which they had a large sample of female patients in two hospitals – three hundred in one and 420 in the other – who had each undergone laparoscopic surgery for various conditions. Hospital A used the traditional disinfectant pre-procedure and Hospital B used the new one. The outcome, rates of infected patients as measured by white blood counts and differentials, was significantly lower for hospital B (with the new disinfectant). They concluded that their product was safer for clients.

> **Case 2.** A client asks you about the effectiveness of a new method of contraception. There are not a lot of studies available, but the one the medical supply representative shows the unit is published in a reputable journal. They compared the new method (Brand Z) with a well-known similar method (Brand A), both progestin based. Women ranged from 18 to 30 years in each group. A sample of twenty women in each group were already taking one or the other method of contraception and researchers compared unplanned pregnancy rates. The rates of unplanned pregnancy were significantly higher in the Brand A group, with researchers concluding that there is no difference between the contraceptives.

The two scenarios highlight the importance of diminishing the word-of-mouth recommendations for practice and promote understanding about how to judge the trustworthiness of research findings. Factors that falsely create significant results (type I error) and factors preventing readers from finding significant differences (type II error) are two types of errors. The focus of the article is to guide readers through the factors that help decide whether to trust the results regardless of their significance.

Significance Measures

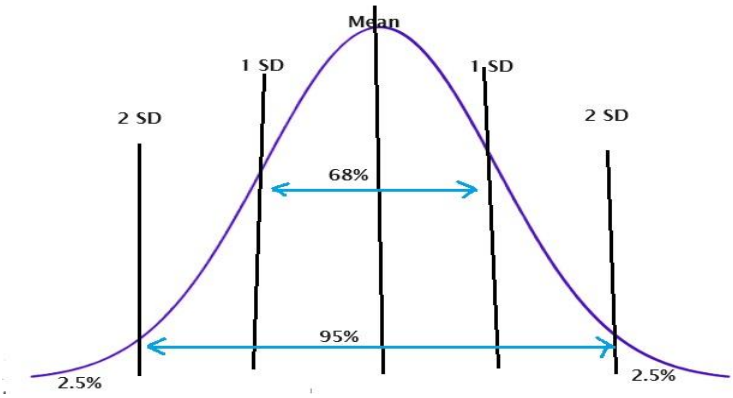
One way to assess trustworthiness is to start by looking at significance of the study results. Then the study design, controls and participants are examined in the study methods to determine whether to trust the significance or lack of it. Two of the main indicators used for significance are the use of probability or *p*-values, and the use of confidence intervals.

Probability to Determine Significance

The *obtained probability* value (p-value) is the assessment of the likelihood of results occurring by random chance. In other words, *probability* is the word to describe how likely something is to happen, like flipping a coin. Each flip is 50% likelihood of landing on heads (or tails). If data are *normally distributed*, half of the coin flips will be heads, and the other half will be heads, split by a normally distributed (or bell) curve. Consequently, Figure 2 is a typical normally distributed curve.

Figure 2

Normal Distribution



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At least 68% of normally distributed research result are within 1 standard deviation (SD) from the mean (centre line) and 95% of all results are within 2 standard deviations (Andrade, 2019). Where the statistical results sit on the bell curve helps researchers to determine if the results are statistically significant. The cutoff (alpha or α level) for significance is determined prior to the study and is the probability of obtaining that result by chance. That means that to be significant, the results must be an outlier, or outside more than two (2) standard deviations. The alpha level is traditionally 0.05 or 5%, This means that these extreme results are only due to error five (5) times out of one hundred, or 5% of the time.

If the obtained probability (*p*-value) from the statistical tests is higher than a pre-set alpha, then the result is not significant (Table 1). If the obtained probability is less than the alpha, then results are significant and less likely to be by *error* (although *error* is still possible). Quantitative research is about hypothesis testing. When asking if there IS a difference or association, that is referred to as the "alternative hypothesis". The often unspoken "null" hypothesis is that there is NO difference or association. When the *obtained probability* is significant, the researchers *reject the null hypothesis*, This does not "prove" there IS a difference or the size of difference, only indicates that the absence of a difference is false.

Table 1

Examples of p-values

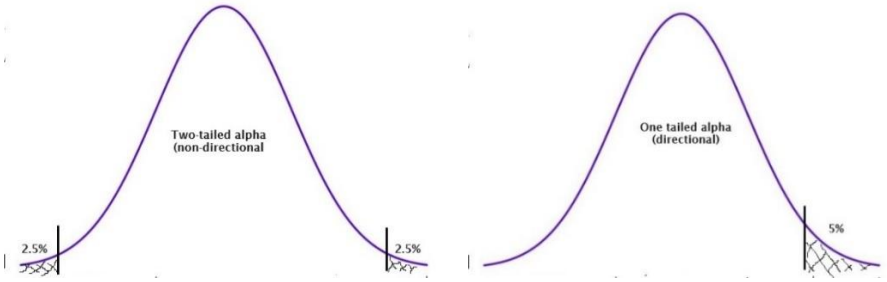
	Significant p value (< alpha)	**Not Significant p value (> alpha)**
Alpha 0.05	0.04	0.06
Alpha 0.01	0.005	0.015

If choosing an alpha of 0.05, there is a 2.5% probability on either side of the mean (the highest part of the bell curve). When results are on both sides of the normal curve, as in Figure 2 above, the name of the is *non-directional* or *two-tailed hypothesis*. Researchers use this in their statistical tests if they are not sure if results are positive or negative, meaning landing on

the left or right of the bell curve. The obtained probability is extreme when the result is beyond two standard deviations, or in other words, within either of those outer positive or negative 2.5% regions. To researchers, being in the 2.5% regions means that a larger sample is necessary to detect the significance of the results. If the data indicate the result is one direction only leaning positive or negative, the researchers often choose a one-tailed hypothesis, also called an *alpha*. All five percent is on one side of the curve as in Figure 3, the research knows there is an increased likelihood of finding a significant result. When there are one-sided results, smaller samples are used and there is a greater potential for detecting a difference. The risk for researchers is that if results go in the other direction, they often miss the significance, revealing an *error* (keep reading to find out about errors).

Figure 3

Two-tailed v one-tailed hypotheses



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Sometimes the authors do not state their desired alpha level of significance in their study. The reader then determines the cutoff. If not stated, traditionally an alpha (α) of 0.05 is used. If the subject is a treatment that is toxic or with harmful side effects, then a smaller level of significance should be used by the reader (e.g., 0.01 or 0.001), leaving less room for *error*.

A *p*-value only establishes the *potential* meaningfulness of the effect (e.g., significance). It informs about the strength or possibility of an association or difference. Researchers never can say that the study *proved* a difference, because there are too many sources of error. For this reason, when repeating the study multiple times, the result or obtained probability varies from study to study. Significant *p*-values that are repeated and found in varied populations, however, do demonstrate that there may be a difference or relationship that is more than *error*. Reviewers and consumers look at the design and controls used by the researchers to determine if the design and methods to trustworthy or due to error. The true value or effect of the study is not known with small single studies- it takes multiple studies or large samples until there is confidence in the finding. This is the value of a systematic review, in which similar studies are pooled to determine a closer range of the true effect.

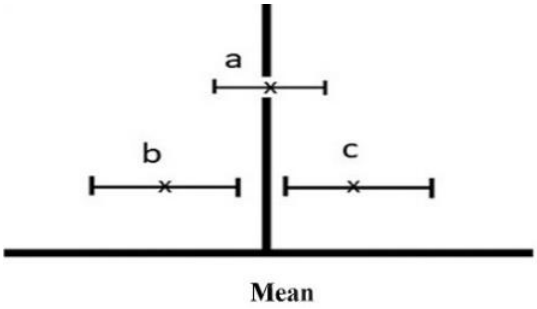
It should be noted that significant results do not indicate if the size of the difference is **clinically** significant or relevant. For instance, a drop in systolic blood pressure of 4 mmHg may be statistically significant but the drop of 4 mmHg is not clinically significant enough to make a difference. The *p*-value also does not inform readers about the strength of the association or how much variability is in the results.

Confidence Intervals and Significance

Researchers may use confidence intervals (CI) to inform readers about the variability in the results. Sometimes researchers use the CI instead of *p*-values to interpret the significance of the association. The confidence intervals (CI) give an estimate of an upper and lower range of values that researchers use to explain true population parameters, such as mean or proportion. Like the *p*-value, the accepted cutoff for the CI is either 95% or 99% depending on the risk levels (e.g., treatment that is toxic or with harmful side effects) of the intervention. The CI determines range of the sample statistic value and gives an estimate of the level of certainty or confidence in the interval, hence CI. By using CI, the researcher predicts the population parameters without having to repeat the re-draw of samples from the same population. The CI is a highly relevant tool to appraise research for practical applications, such as nursing interventions. Smaller samples have more error therefore more variability, therefore, the CI range is wider. The CI also reflects significance even in the absence of an *obtained probability* value, e.g., *p*-value. Figure 4 shows three CIs. The vertical line is the mean, which would be the existing level of a variable of interest (e.g. mean pain level, mean number of infections) or, if using odds ratios or relative risk, it would be 1.

Figure 4

Confidence intervals



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In example CI "a", the results for the experimental group range from below the mean to above the mean. The treatment is therefore ranging from better to worse. For instance, if the current pain medication results in a mean pain level of 6/10, then the obtained pain levels with the new treatment would be compared to this mean level of 6. The horizontal line shows the mean of the study results and variability around that result in relation to the mean. A CI range from 5 to 7 as in example "a" tells the reader that the treatment ranges from less pain to more pain than the existing treatment, therefore is not significant. If the pain CI was 4 to 5, the range of results is consistently below the mean pain level of 6 (example "b"), therefore significantly better than the current treatment. Example c shows the reader that there was an increase in mean or risk since the entire c is to the right of the mean a line. A CI of 6.5 to 7.5, the effects of the risk or treatment result in higher pain levels consistently, which is significantly worse (example "c").

Researchers sometimes calculate probabilities using odds ratio and relative risk ratio (Norton et al., 2018). The odds ratio answers the question: What are the odds of an outcome in people exposed to a risk factor? The risk ratio answers the question: How much more is the person at risk after exposure? In other words, one exposure to second hand smoke increases the

numerical odds ratio of cancer, but the risk ratio tells us what the risk of developing cancer over 20 years if exposed to second hand smoke. The statistical analysis is different, where an epidemiologist researcher measures the proportion of people with an outcome of those exposed (morbidity) v those not exposed (healthy), used to calculate their risk of developing disease; and risk ratio measures the mortality from exposure 20 years ago, e.g., 9/11 (in the USA). Both use unique mathematical formulas in a specific geographic population. Regardless, the odds ratios and risk ratios, use a mean of 1 if there is no difference. If probabilities are the same between occurring or not occurring, then when divided the odds are 1(Ranganathan et al., 2015). Similarly, if the risk is the same, it will also be 1. The CI can therefore be used to determine the significance of odds and risk ratios. If 1 is the mean in the center of the graph in figure 3, then to be significant, the CI would all be higher than 1 or all be lower than 1 (example b or c). If 1 is crossed by the CI it is not significant.

Error

When looking at significance levels, there are two main types of error. Type I (α or alpha) error is when the obtained probability or CI is significant but is falsely significant. It relates to the alpha level therefore alpha error. If the results are not significant, then there is a risk of type II (β or beta) error. This is when the results are falsely non-significant- the study was not well enough designed to detect a difference (power).

Type I (α) Error

Type I error is only a consideration if the results are significant. Are they truly significant or are they in error (falsely significant). An obtained probability of 0.03 would mean that there is still a 3% chance of error, so the study controls for variability need to be examined. How likely is it that the results are within this error? The design of the study, as well as measures to control error and threats to internal validity should be assessed when looking at significant results. Controlling for alternate explanations is considered "controlling for **internal validity**" (Singh & Thirsk, 2022). No study will have everything controlled, but we can assess generally how well they attempted to control variability or alternate explanations for the results. Sufficient internal validity must be present before we can consider generalizing the findings to other settings (**external validity**). Internal validity can be controlled by several strategies including research design, study elements, managing threats, measurement, and statistical testing.

a) Research Design

There are three main categories of quantitative research designs. These types of designs affect the potential for error in a study. These are the experimental, quasi-experimental, and non-experimental designs.

Experimental – the randomized controlled trial (RCT) is considered the only "true" experimental design. In this design, participants are randomly assigned to a control and a treatment or intervention group(s) (Jakubec & Astle, 2021). The RCT is the only design where researchers can *infer causation* (i.e. That a caused b). As such, the RCT is the *gold standard* in research designs as RCT attempts to distribute error through randomization between groups, minimizing the effect of Type I errors. Ideally the RCT will also include random *selection* of participants, to improve generalizability, but usually only random assignment is seen. That is the most important factor for controlling extraneous variables/other explanations and improving internal validity.

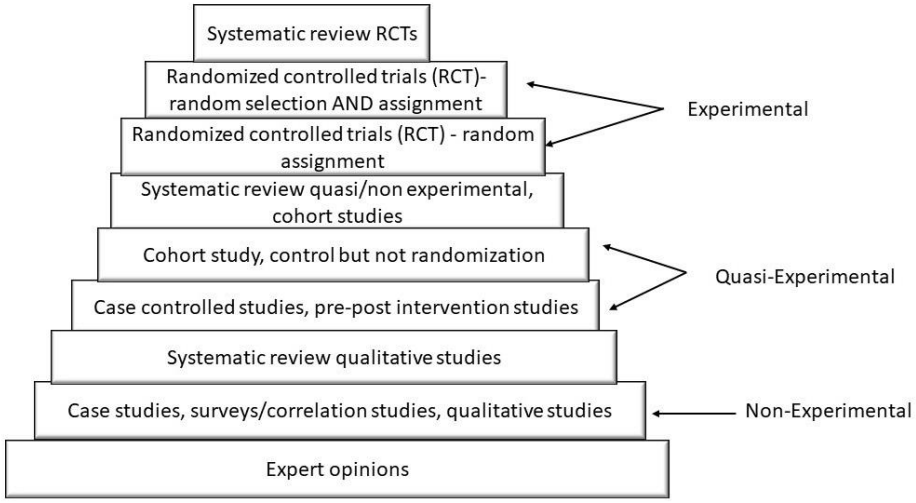
Quasi-experimental designs. Study designs include an intervention but are either missing random assignment or a control group. An example is a pre-post-test design such as where levels of education are measured after an educational intervention or treatment. Without adequate controls one could argue that learning happened outside the intervention or that the testing itself affected learning.

Non-experimental designs. These studies do not have an intervention nor control. They are only measuring what is happening. Examples include survey research, naturalistic observation, and archival research. For example, researchers may collect multiple variables from a population to predict influences on blood pressure. Although a significant association may be found, there are many other unmeasured variables that may also affect blood pressure. It was once thought rain caused malaria, as rates of malaria went up in rainy seasons. Eventually researchers found that rainy conditions allowed more breeding of mosquitoes, which were the actual carrier of malaria.

There are **levels** of research based mainly on features of the study designs described above, including randomization, control groups and the source of participants. While there is some variation, a summary of these from common nursing sources has been created in figure 5 (Melnyk & Fineout-Overholt, 2015; Woo, 2019). Single studies, even RCTs may still have error, depending on other measures of control discussed. Systematic reviews are therefore considered a higher level of research quality. In these, the researcher pools results from multiple smaller studies with similar designs and outcomes. The increased sample size reduces error and therefore a narrower confidence interval and clearer idea of "true" effect of the treatment.

Figure 5

Levels of Research Quality



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Systematic reviews of RCTs are the highest quality, but systematic reviews of cohort/observational studies are also a strong source of evidence. Systematic reviews of qualitative studies are beyond the scope of this article but are also considered stronger than single qualitative studies. The strength of research varies as the body of research evolves and

expands as more becomes available and as we gain more understanding of the topic. Single small studies have variable results, especially if they involve small convenience samples in unique populations. Eventually there may be enough studies to compare each of the small studies in a systematic review, getting a closer idea about the real effect of an intervention. Consider the COVID pandemic experience below considering research quality.

> Initially during the COVID pandemic, it was unknown if masks helped prevent transmission. The mode of transmission was relatively unknown. Some small studies indicated there was a difference in transmission while others did not. Eventually the researchers found the virus was airborne, and the question changed to, what types of masks were effective? Mask types initially thought to be helpful (e.g., homemade, or single layer) were determined to be ineffective, while N95 masks or masks with a triple layer were more effective. Some described this as indecision or "unreliable" science, but it demonstrated the growth of research evidence. It evolved from expert opinion to lab studies, to single observational studies with sometimes conflicting results, to RCTs. Eventually there were enough studies to conduct systematic reviews, increasing confidence in the results over time.

Randomized controlled trials are difficult in unstructured clinical settings and nursing research is therefore more likely to consist of smaller cohort quasi-experimental studies. In some settings, there often is not prior research to support the practice. Single studies are considered more trustworthy if there are similar studies with comparable results across settings or populations, which is the value of replicating studies. Smaller studies with similar outcomes also provide a basis for subsequent larger studies.

These design examples indicate why such emphasis is placed on the RCT. Given that many nursing questions cannot be randomized or controlled, correlational type designs (quasi-experimental and non-experimental) are more common. It therefore becomes very important to find ways to control for other possible explanations for the results.

b) Study Elements to Improve Internal Validity

Researchers will describe various measures in their study that they used to attempt to establish internal validity/ control error and extraneous variable. Some of these are described below.

Random assignment. The first and most effective is *random assignment* of participants into comparison groups. Ideally, there is more equal distribution of the variables brought by individual participants. Random assignment to a group also increases confidence in the results.

Case control methods. When random assignment is prohibitive, researchers use *case control methods*, matching patients from one group with patients from another group who have similar characteristics but don't receive the intervention.

Sample selection. Random selection (probability sampling) is the ideal method to best represent a population and attempt to generalize the study sample results to the larger population (external validity). In situations where it is difficult to recruit, and randomly select, *convenience samples* are used (i.e., those persons easily available and willing to participate). Convenience samples pose limitations, as the participants have more uncontrolled variables with more alternate explanations than randomly selected samples. *Cohort* samples are a whole group (e.g. an entire class, or everyone born in a certain year), but again may not get the entire group and those studied may have variables not seen with other groups that could affect results.

Selection or inclusion/exclusion criteria. The researchers will determine who is eligible/ineligible to participate in the study to reduce variability or alternate explanations. If

studying effects of dogs on stress, researchers might exclude those with allergies or prior negative dog experiences. When choosing where to select sample, it would be important to get a varied cross section. For instance, if assessing satisfaction and surveying only those outside the patient advocate/complaint department, the results will be different than if participants came from all areas of the agency.

c) Threats to Internal Validity

Key threats to internal validity are summarized in Table 2 (Flannelly et al., 2018; Singh & Thirsk, 2022). When any of these threats are present and left mostly uncontrolled, type I error may occur (the results may be falsely significant).

Table 2

Threats to internal validity

Threat	Explanation
History	An experience of an external event during or prior to study that affects the outcome (e.g., a prior dog attack affecting a study on using dogs for reducing stress)
Selection bias	Without random assignment or selection, the group characteristics may differ between groups before the study even starts. (e.g., if studying effects of dog therapy- only those who like dogs are likely to volunteer which gives different results than a random sample of students)
Maturation	Body development changes over time that may affect the outcome. This is most common in pre-post measures (e.g., fatigue levels in women measured but some become pregnant after premeasuring and not an exclusion criterion).
Instrumentation	Using different equipment to measure the outcome could produce errors if not all calibrated the same way, the same type, or if used in different ways. Using several raters could also produce different results.
Testing	Taking a test repeatedly could result in increased scores even without an intervention. A control group who also does the tests but has no intervention is preferred.
Mortality	Losing participants during a study can remove the benefits of selection and random assignment. The remaining participants may be quite different than intended between groups. An example is long term studies in which fewer people complete the 2nd measure than the 1st.
Statistical regression	Choosing participants who at extreme ends (high or low) will result in their subsequent scores moving closer to the regardless of intervention.

d) Measurement Reliability and Validity

Measurement reliability and validity are important factors. While they also affect external validity (the ability to generalize the results to other populations), using unreliable or inconsistent measures may produce error. The reliability of the measurement tool means that it consistently has similar results on the same participants. If given a test or variations of the test repeatedly the results would be the same. Measurement validity is that the tool measures what is intended. For instance, the tool might be measuring stress instead of resilience, or sedation effect rather than pain relief. Establishing measurement reliability and validity are separate studies. Strong research usually includes instruments that have already had reliability and validity established and the researchers report this in their description of the design.

Measurement reliability and validity, especially sensitivity to detect small changes, can also affect type II error as discussed later.

e) Statistical Testing

The type and numbers of statistical tests used also has a role in controlling error. If too many statistical tests are conducted on related data in a study, then the risk of false significance increases (Andrade, 2019). Multivariate analysis is one alternative, as it uses statistical techniques to reduce overlapping sources of random error or variability. For instance, instead of multiple t-tests on each of the variables, the researchers would ideally use multiple regression for associations, or analysis of variance for differences. If multiple tests are not present, however, this isn't an issue.

Type II Error (β)

The ability to detect a difference, if it exists, is the "power" of the study. Ideally studies should have a power of 0.80 or higher, meaning the results have at least an 80% chance to detect a difference if it exists. Type II error, also called beta error (β) is failure to detect a difference when it exists. Power is calculated as 1-β. If the power is 0.8, then the risk of type II error is 0.2 (20%). Note that the tolerance for type II error (e.g. 20%) is much higher than for type I error (e.g., 5%). This is because a significant result is likely to result in changes in practice if the result can be trusted. If results are not significant, then change is unlikely to happen. Power is dependent upon three key factors: the alpha level (α), the size of the sample, and the size of the effect between groups.

a) Alpha α and Power

Smaller alpha probability levels of 0.90 (*p-value* of 0.10) or 0.95 (*p-value* of 0.05) are used when there is high risk to using results with the participant populations. Consider if the alpha level is very small when planning a study, the researchers require a larger sample or a larger effect size between the groups. Table 3 shows the difference in sample size required in alpha probability group if a significance cutoff or alpha level of 0.01 rather than 0.05 is used. power 0.80 assuming a medium effect size and two- sided alpha level (Cohen, 1988).

Table 3

Alpha α level and participants needed per sample .

Alpha 0.01	Alpha 0.05
95	64

b) Effect Size

The *effect size* is the percentage of a standard deviation difference between groups or magnitude of the difference. If it is small (e.g., 0.25 of a standard deviation for many tests), or medium (0.5 SD) then larger sample sizes are required or more precise measurements. If the effect size is large (e.g., 0.75 SD) it would likely be observed without the study. If you have a small effect size, more precise measurements are recommended. The way in which data are measured can also affect the ability to detect differences in effect size. Data measurement is either continuous or categorical. **Continuous** measures are those with equal intervals from each other. Heart rate, temperature, quantitative laboratory results and size measurements are all

continuous. **Categorical** measurements are binary (e.g. yes/no) or levels such as small/medium/large, or Likert scales of 7. These are not as sensitive as continuous as they do not have equal intervals or midpoints- a score of 4 is more than 2 but is unlikely to be exactly twice as much. Larger samples are required for categorical measures as they are less precise and may miss subtle differences or small effect size. Consider the following example. A pain scale of 0 to 10 is treated as continuous. A categorical measure of pain sometimes used with triage is small (a level of 1-3), medium (4-6), or large (7 to 10). If a medication resulted in a decrease of pain from 6 to 4 on a continuous scale it might be significant. If a categorial level was used, however, the level would remain medium in both measures and no significant difference would be identified. Using reliable and valid measurements is also important to detect the measure of interest consistently.

c) Sample size

The size of the sample matters. Choosing a sample size depends on the statistical test, desired power level, and in the case of multivariate analysis, the number of variables measured. A crude rule is 20 per group, or 20 per variable in multivariate analysis but this is still low. The level of measurement is also an issue. One of the classic sources that researchers might cite for calculating sufficient sample size is "Statistical Power Analysis for the Behavioral Sciences"(Cohen, 1988), in which recommended sample size can be estimated by each type of statistical test and alpha (one or two-sided). There are also online calculators available. A well-designed study should state in the methods section what their desired sample size was based on power calculations and include a final power calculation once the study is complete. The final sample may be lower than planned due to loss of participants, or issues that occur during the study. For example, in a study of nosocomial pneumonia post-endotracheal tube suctioning, a power of 0.80 was desired and would require a sample of 169 randomly assigned to two groups of suction catheters (Snell, 1988). Changes in ICU routines during the study resulted in endotracheal tubes being removed in 24 hours for most patients, rather than the 48 hours needed to determine the pneumonia to be nosocomial. A total of 171 patients were entered into the study but the final sample was reduced to 69 total due to the change. The comparison was not significant, but the sample loss resulted in a final power of 0.51 with a medium effect (or less power if only a small effect). This meant there was a 49% chance of type II error (that a difference was missed), therefore the results could not be trusted.

Trustworthiness Decision Tree

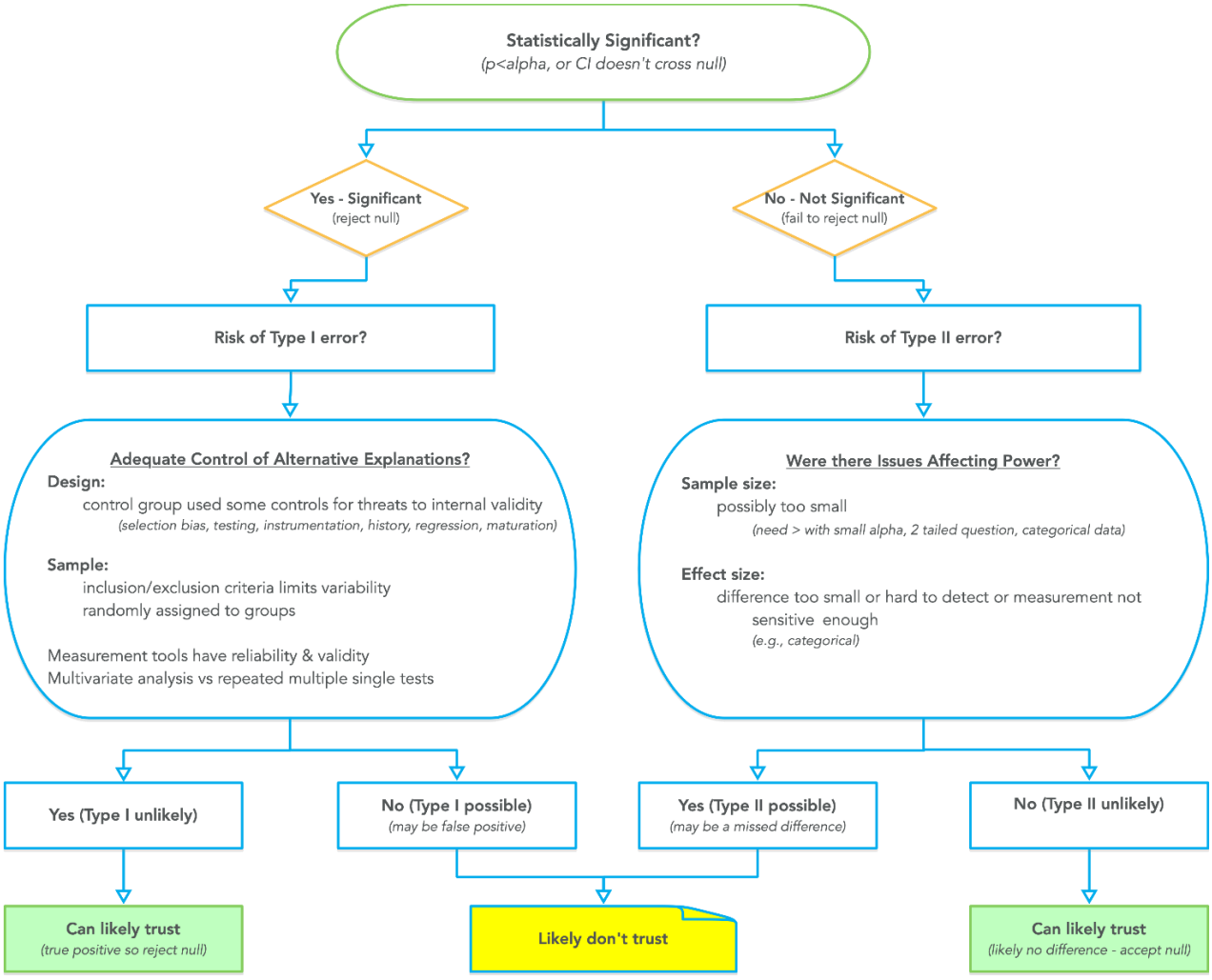
Decisions to trust the significance/non-significance of the research combine all the above information. Before getting there, however, it should be noted that you should also assess the credibility/trustworthiness of the **authors** and the **journal**. Key questions about the author include whether the authors are qualified to do this kind of research (research preparation such as master's or PhD, ORCID registration, prior research in the area), do they have knowledge of content area, and/or have relevant agency or work affiliation. When looking at the journal, is it from a credible/well known publisher, do they publish similar types of articles, are they highly rated (impact factor), and are the references relatively recent (i.e. within 5 years) and relevant. A rough estimate of a five-year range for references is typically used, except for "gold-standard" primary or key articles. If citing primary sources (e.g. Selye's stress) then they may use the original study from Selye as a gold standard primary source and should be used. Also consider whether the references include key authors or topics in this area. Also consider

the risk of publication bias especially in terms of funding. If funded by someone who can profit from results it is of concern as to bias- do they only circulate research they funded that was significant or do they also have non-significant studies? Most research grants come from government sources or community agencies so generally this is not a problem. The next part is looking at the results. Are they significant or not? If they are significant then it may be true, or it may be the result of random error through lack of controls for internal validity or measurement error. If they are not significant, then again it may be true or the result of lack of power. This is shown in Figure 4.

If authors and journals are deemed credible, then look at the trustworthiness of the results. If the results of a study are significant, then they can either be trusted or there is a chance of type I error (false significance). If the results are not significant, then the issue becomes the risk of type II error (false non-significance) or trustworthiness. These pathways can be followed in figure 6.

Figure 6

Trustworthiness Decision Tree



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If results are significant, then go into the methods section of the paper to examine the design and ways in which researchers attempted to control internal validity. This is seen in the left of the pathway. If reasonable efforts were made to control variability with some or all these measures, then the results can likely be trusted. If there was a key source of variability possible, then it would be advisable to not trust the results. It would be recommended to wait for further research to be done before making any changes as the probability of type I error is likely.

If the results are not significant then we follow the right side of the decision tree and again look at methods and result. Was there a reasonable sample size in the final sample? Did they measure the changes with a validated and reliable measure that would be sensitive to changes (e.g. continuous vs categorical)? Was the alpha level reasonable or very strict? If any of these are a concern, then the results may be a type II error (missing a difference). If not, they may be trusted.

Application

Let's return to the cases in the beginning of the article. As you look at the two cases introduced in the beginning of the article, use the decision tree (Figure 4) to examine each case.

Case 1 - Significant Results

In this case the results were significantly different, in favour of the new disinfectant. They are either truly significant, or there is a chance of type I error (finding a difference when it does not exist or was only by error). In this situation, on the surface it looks like the study should be trustworthy due to the large sample size and precision of measurement (white blood counts and differentials). The first "red flag" however, is that it is sponsored by the company that makes the disinfectant. There is a concern in healthcare research that, if sponsored, the company may not release non-significant results if they occur. This is considered a form of research bias. If we move beyond that concern to the decision tree, we can examine other sources of potential error. The key to type I error is to consider if the researchers have put in sufficient controls for random error between groups. They are unlikely to have controlled everything but is what they did control sufficient? One of these is inclusion/exclusion criteria. In this study they used any patient receiving laparoscopic surgery, regardless of type, gender, or other pre-existing illnesses. They did have a control group (the other hospital), but it was not randomly assigned who got which disinfectant. One control could have been case matching (e.g., a person from each hospital of similar age, health status and similar reason for surgery) but this was not done either. A strength was the use of a precise measure such as blood results that are continuous in nature and precise, so instrumentation is not likely, and the measures should be reliable and valid. The use of a convenience sample (anyone who met criteria) could lead to selection bias or unequal distribution of other characteristics (extraneous variables) that could impact results if not controlled. For instance, there may have been a hospital acquired infection going through hospital A that could account for the higher infection rate- the type of infection was not specified. Sometimes random error can be limited through use of multivariate analysis. It does not remove the error but limits some of its' effects. In this case, it was a straight comparison of rates of infection so multivariate analysis was not used. The final decision- there were not enough controls on internal validity to trust the results. If we can't trust the internal validity, then we cannot or should not try to apply or generalize the results to other populations. Further research with more controls is required.

Case 2- Nonsignificant Results

This case involved non-significant findings for methods of contraception. You would start on the right side of the decision tree for non-significant findings. The concern then becomes whether the findings are truly non-significant (no difference) or whether there is a risk of type II error (missing a difference when it exists). While there may also be design/internal validity issues, this is not the primary concern. We need to understand if there is potential for the researchers to have missed a difference.

Conclusion

Although research findings are only one aspect of evidence informed practice, the significance of findings and trustworthiness of results requires understanding of the practitioner wanting to apply the information promoted as evidence. Small significant studies that have internal validity but have numerous errors may be correct. However, untested in the provider's communities means that there is no internal (applicable to the agency) or external validity (generalizability to agencies outside the participant sample) and *changes should not be made to practice* unless there are other similar studies in similar communities to support the results. Systematic reviews inform our practices and are considered a gold standard for research findings because they combine and analyze similar studies for common samples, sizes, and outcomes. The statistical analysis of the variability estimates a *true effect*.

In healthcare a systematic review is not always available, therefore it is important that professionals understand that word-of-mouth is insufficient to support practice. The paper presented information about how to evaluate the quality and trustworthiness of single studies and use of a decision tree to evaluate the potential impact of a single study on their practice.

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Journal of the Academy of Forensic Nursing

Policy and Legislation

Violence Against Women Act: Re-authorization and Impact on Medical Forensic Healthcare

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Accepted: Sept 18, 2023

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Abstract

Since Congress passed the Violence Against Women Act (VAWA) in 1994, millions in expenditures raised awareness and continue to combat domestic violence, improving and increasing provision of services to victims of violence including domestic, intimate partner, stalking, dating, and sexual assault. VAWA aims to improves the justice system response to crimes of domestic and associated violence, supplying housing and shelter services to victims. During the past 29 years, the Department of Justice (DOJ) and the Office for Violence Against Women (OVW) created and administered federal grants. Reauthorized in 2022, federal, state, and tribal agencies received VAWA funding. This article reviews the history of VAWA, tracks milestones in federal funding, chronicling the federal focus on a forensic nurse sub-specialty in sexual assault care, proposing strengths in the development of the *generalist approach* to forensic nursing.

Keywords: VAWA, forensic, violence, forensic nursing, sexual assault, rape, *generalist approach*

Violence As a Public Health Crisis

Violence is a threat to the public's health and safety. "According to the Centers for Disease Control and Prevention, each year, women experience about 4.8 million intimate partner

related physical assaults and rapes, and men are the victims of about 2.9 million intimate partner-related physical assaults. In the United States, 1 in 6 women and 1 in 33 men report experiencing an attempted or completed rape at some time in their lives. Youth violence is widespread in this country and is the second leading cause of death for young people aged 10 to 24. More than 720,000 violence related injuries in young people were treated in US emergency rooms" (Block et al., 2007, p. 5). Violence and trauma across the lifespan contributed to lost productivity and billions of dollars in associated healthcare costs annually.

Now a public health crisis, injury and violence are the oldest health problems facing persons worldwide (Sleet et al., 2012). In the past 60 years, statistics and linkage to public health outcomes defined the problem and helped establish the Center for Injury Prevention and Emergency Health and the Center for Disease Control's Division of Environmental Health Services for Investigation in 1970. Compilation of epidemiological statistics between 1960 and 1985 supplied the data for creation of the National Center for Injury Preventative Health (NCIPH) in 1992. NCIPH continued to build capacity and generated statistical data to support the current structure for the CDC's National Center for Injury Prevention and Control (NCIPC). The much-needed epidemiology and statistical data supported efforts at VAWA.

Abbreviated Definitions for Sexual, Domestic and Intimate Partner Violence

The Uniform Data, Definitions, and Recommended Data Elements (Breiding, et al., 2015) defines the following terms:

Sexual Violence. "… a sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse. It includes forced or alcohol/ drug facilitated penetration of a victim; forced or alcohol/drug facilitated incidents in which the victim was made to penetrate a perpetrator or someone else; non-physically pressured unwanted penetration; intentional sexual touching; or non-contact acts of a sexual nature" (p. 11). Sexual violence may include non-consensual sex with a third party and acts where a victim is unable to consent / refuse such as drug-facilitated assault, being under the influence of drugs or alcohol.

Intimate Partner Violence. "An intimate partner is a person with whom one has a close personal relationship that may be characterized by the partners' emotional connectedness, regular contact, ongoing physical contact and sexual behavior, identity as a couple, and familiarity and knowledge about each other's lives. The relationship need not involve all of these dimensions." (p. 11). Additionally, Uniform data definitions of relationships include current or former:

- Spouses (married spouses, common-law spouses, civil union spouses, domestic partners)
- Boyfriends/girlfriends
- Dating partners
- Ongoing sexual partners.

Intimate partners often do not live in the same dwelling but may be of the same sex. A *common law marriage or non-legal but living together relationship* has unique legislated designation in each state. Legislated protections exclude other relationships too, including an exhaustive list of non-related but socially considered family relationships, e.g., foster parents, stepparents, and/or adopted siblings.

It is highly recommended that forensic healthcare professionals review the CDC's *Intimate Partner Violence Surveillance Uniform Definitions and Recommended Data Elements* (Breiding et al, 2015) for an extensive list of relationship definitions and exclusion variables.

Overview of VAWA History

In 1994, the United States Congress passed the Violence Against Women Act (VAWA) (P.L. 103-322). Goals of this landmark legislation included not only reducing the incidence of domestic violence and intimate partner abuse, but also assuring the provisions afforded housing and successful prosecution of crimes of domestic violence. The reauthorization of VAWA occurs with each federal funding cycle, and recently expanding to enhance tribal violence, protecting migrant populations, and crimes against the elderly and disabled. The reauthorization of 2005 enhanced penalties for stalking crimes, crimes against tribal women, addressing domestic violence as a public health crisis, and aimed to improve response and prosecution of these crimes (Seghetti & Bjelopera, 2012). Assuring housing protections for women victimized by domestic and intimate partner violence aims to keep these victims safe when applying for federal housing and decreases the likelihood of homelessness (HUD, gov).

The Department of Justice (DOJ) and the Office for Violence Against Women (OVW) funded and administrated federal grants by during the past 29 years. Additionally, VAWA established the Rape Prevention and Education (RPE) Program at Center for Disease Control (CDC). The program administration is through the Preventive Health and Health Services Block Grant managed by the National Center for Chronic Disease Prevention and Health Promotion (Chronic Disease Center). This CDC funding offered training and resources at a broad federal, state, and local interdisciplinary level and examined intimate and domestic violence as a widespread healthcare crisis.

VAWA Reauthorization 2022

In a landmark bi-partisan effort, the US Congress passed H.R. 2471, the Consolidated Appropriation Act of 2022 that funded the federal government for the rest of Fiscal Year (FY) 2022 and provided for the re-authorization of VAWA. This funding reauthorized in 2022 addresses domestic, dating, intimate partner, elder and tribal violence and supports funding to federal, state, and tribal agencies.

Spearheaded by Senator Murkowski (R-AK), the funding includes the *Ensuring Forensic Health Care for all Act* (EFCA) to fund the support for generalist forensic nurse training. The administration of EFCA oversees the Health Resource Services Administration (HRSA) where provision of funds is at the discretion of the Senate appropriations Committee.

Healthcare Response to Violence

Since 1994, VAWA historically supported the forensic nurse roles, and in 2021, VAWA improved sections SEC. 1406. and 1401.1 sustaining support of one sub-specialty role of the forensic nurse through 2026. "VAWA created awareness for female victims of violence and allocated grant funding for services, training, and research … for the survivors of rape or sexual assault. As a result, there was a massive surge in the advancement of forensic nursing, specifically SANE services, during the late 1990s and early 2000s in the United States" (Rossi & Trujillo, 2021, p. 39). As such, the incorrect perception of the forensic nurse, granted specialty designation by ANA in 1995, is as Sexual Assault Nurse Examiners (SANE). Today, the broad and diverse

population of forensic nurses rely on the terms Generalist and Advanced Forensic Nurse in order to practice in roles that expand into the care beyond sexual violence.

A Generalist Approach to the Forensic Nurse Role

The *generalist approach* to the forensic nurse role is a unique healthcare response to addressing victims of all genders and all forms of interpersonal violence across the lifespan, whether sexual assault, intimate partner abuse, child abuse, elder abuse, strangulation, or other forms of assault. Angelia Trujillo DNP, WHNP-BC, RN, AFN-C, DF-AFN first described the *generalist approach* in her development of an inclusive healthcare training through the University of Alaska Anchorage College of Health. Trujillo recognized the deficits in a broad response to all forms of violence facing both urban and rural communities, and the dearth of trained medical and nursing staff with a forensic lens. The *generalist approach* assures knowledge, understanding and application of knowledge in how to work with law enforcement, advocates, and other stakeholders. Theoretically and with the analytical lens, there is an increased likelihood that victims of violence receive an assessment and treatment, influenced by a forensic lens, collection of medical forensic evidence, where care availability becomes economically possible, thereby, contributing to the pursuit of justice.

EFCA funding supplies guidance and support nationwide to both urban and rural settings to promote training and education including a generalist response model to all victims of violent crimes. “Violence exists on a spectrum. When only one specific form of sexual violence is guaranteed a medical forensic examination, a disparity in care and sustainability for forensic [nurse] programs is the direct result” (Rossi & Trujillo, 2021, p. 39). While several healthcare organizations currently struggle to provide sustainable SANE care (e.g., attrition, volume, and funding) (United States Government Accountability Office, 2016), the answer is growing the Generalist Forensic Nurse and the Advanced Forensic Nurse communities of practice through networking and education in professional organizations and in partnership with accredited institutions globally offering curricula focusing on forensic nurse specialty programs of study. Together, both the Generalist and the Advanced Forensic Nurses offer comprehensive care approaches to persons experiencing violence and seeking healthcare. The future is a thriving expansion of forensic nurse services, both at the Generalist and Advanced levels by adopting a broader philosophy to serve all victims of violence.

To learn more about the Generalist Forensic Nurse and the Advanced Forensic Nurse certifications, visit the Forensic Nursing Certification Board.

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Journal of the Academy of Forensic Nursing

Research Reviews

AFN Journal Club Research Reviews

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AFN Journal Club Research Reviews -Spring/Summer

The AFN Journal Club meets regularly to review the quality of the evidence available to support our clinical practice. This is a core requirement of professional practice.

AFN Journal Review Criteria

- Evidence tables are for the review of studies that may have implications for clinical practice.
- All articles on this table have been reviewed by the AFN Journal Club.
- Abbreviations are listed in the legend following the reviews.

Melnyk Levels of Evidence (Melnyk & Fineout-Overholt, 2015)

- **Level 1 -** Systematic review & meta-analysis of randomized controlled trials; clinical guidelines based on systematic reviews or meta-analyses
- **Level 2 -** One or more randomized controlled trials
- **Level 3 -** Controlled trial (no randomization)
- **Level 4 -** Case-control or cohort study; correlation design; examines relationships
- **Level 5 -** Systematic review of descriptive & qualitative studies
- **Level 6 -** Single descriptive or qualitative study; does not examine relationships
- **Level 7 -** Expert opinion

Legend

ALS= Alternative Light Source; AVS= Absorption Visibility Scale; BVS= Bruise Visibility Scale; CPS= Child Protective Services; ER= Emergency Room; FN=Forensic Nurse; HCP= Healthcare Provider; HT= Human Trafficking; HX= history IPV= Intimate Partner Violence; ID= Intellectual Disability; LGBTQIA= Lesbian, Gay, Bisexual, Transgender, Queer/Questioning, Intersex, Asexual; LE= Law Enforcement; MFE= Medical Forensic Exam; N/A=Not Available; NP=Nurse Practitioner; PED= Pediatric Emergency Department; POC= People of Color; P-SANE= Pediatric Sexual Assault Nurse Examiner; SA=Sexual Assault; SAK= Sexual Assault Kit; SANE= Sexual Assault Nurse Examiner; STI=Sexually Transmitted Infection; TBI= Traumatic Brain Injury

Completed Reviews

Johnson-Agbakwu, C. E., Michlig, G. J., Koukoui, S., Akinsulure-Smith, A. M., & Jacobson, D. S. (2023). Health outcomes and female genital mutilation/cutting: how much is due to the cutting itself? [Article]. *International Journal of Impotence Research*, *35*(3), 218-227. https://doi.org/10.1038/s41443-022-00661-6

Study Description. Explore whether wider psychosocial factors may also contribute to or predict health outcomes, beyond the singular focus on FGM/C; shed light on the health and well-being of a diasporic Somali community in the Southwestern U.S., associations between FGM/C and related obstetric, gynecologic, and sexual health outcomes juxtaposed against overarching experiences of discrimination and social support.

Literature Review: 97 references; many references related to feminism and pre-colonial; multiple older but diverse and do relate to the background/research

Design/Method/Fidelity. Cross sectional study; quantitative studies; surveys developed with expert review panel and community key informants including women and men, elders, and youth, and religious figures; surveys translated, back-translated, and made available in English, Somali and Maay languages. Data collection from wave 1 Feb to Dec 2017, and wave 2 from Dec 2018 to June 2019. Multilingual female Somalians who completed training verbally administered surveys using electronic tablets increasing interrater reliability. IRB through AZ state University

Sample/Setting. Somali and Somali Bantu women aged 15 and older, residing in the urban regions of Phoenix or Tucson, AZ recruited to participate in a cross-sectional survey. Informed consent was obtained; snowball sampling used to optimize recruitment. Wave 1 (n = 879) and Wave 2 (n= 654), response rate of 95.3%. Second survey wave, which occurred 18-24 months after the first wave, involved follow-up with 654 of the original sample with a retention rate of 75%. Matching helps control bias; snowball sampling could be perceived as bias

Analysis. Descriptive statistics: bivariate logistic regression analyses used for potential associations between FGM/C and 3 key categories of variables: (1) social experiences, (2) identity and heritage, and (3) health outcomes. Multivariable logistic models explored

if 2 health outcomes were associated with FGM/C status when accounting for these other factors. Controlled for age, education, and collinearity

Results/Limitations. No FGM/C women reported more frequently experiencing discrimination; religion was the most cited perceived cause of discrimination (n = 72, 11.3%); Perceived social support was high among both 'No FGM/C' and 'FGM/C' women; women with FGM/C were 18% less likely to report everyday discrimination experiences; relationship between having experienced one or more negative health events and FGM/C status was not significant; social support appears protective against psychological distress in this model, with those reporting higher support being 43% less likely to screen positive for distress

Clinical Significance/Practice Implications. Awareness of our implicit and explicit biases; implore trauma informed approaches by better understanding lived experiences; education so as to not perpetuate discrimination; education around word choice; reframe our understanding of FGM/C's impact on women's health and well-being through the lens of postcolonial African diasporic feminist discourse; health risks apply to all forms of genital cutting, including forms that are widely accepted in Western culture; social factors such as discrimination and support may play a larger role in health than FGM/C

Evidence Level. Level 4

McNair, S. M., & Boisvert, L. (2021). Prevalence of Adult Female Genital Trauma After Acute Sexual Assault: The Need for a Universal Definition of Genital Trauma. *Journal of Forensic Nursing*, *17*(3), 140–145. https://doi-org.uab.idm.oclc.org/10.1097/JFN.0000000000000325

Study Description. The authors argue that genital injury data only partially describe sexual assault injury. They examined injuries found in a sample of patients after sexual assault and used the data to provide a more multidimensional definition of genital injury pattern.

Literature Review. 29 references, all are greater than 5 years old, some noted to be seminal but quite a few were not

Design/Methods/Fidelity: A retrospective descriptive chart review of the sexual assault forensic records from a provincial regional SA treatment center conducted over a 4-year period (Sept 1, 1997-Aug 31, 2001). Patients presented within 72 hrs and had a SA kit, performed by author and a trained CNS. High interrater reliability, Cohens kappa of 0.91

Sample. 70 charts identified with 67 female patients that met inclusion of being 12 years old and over, who reported being sexually assaulted in the previous 72 hours and received a complete forensic examination. IRB obtained

Analysis. Descriptive analyses but does not clearly specify demographics that were collected. Does state that mean age was 28.79 but does not list out prevalence of each age. Unclear about ethnicity or age as it related to prevalence for the injury findings.

Results/Limitations. The prevalence of genital trauma ranged from 31%- 52%, depending on the definition of trauma utilized: 41% percent of the findings, the greatest number overall, were redness. Bruises, abrasions, and tears (lacerations), the components of blunt force trauma, accounted for 4%, 15%, and 14% of the findings, respectively. Limitations: retrospective charts from 20 years ago (unclear why authors looked at charts from so long ago); no forensic nursing authorship which is concerning when trying to implicate forensic nursing practice; sample was small and only represented one program so not generalizable; figure 2 is unclear since reader can add totals from figure 1; would have liked demographic tables correlating to findings, with age ranges and ethnicities.

Clinical Significance/Practice Implications. Greater consistency and standard taxonomy are needed for forensic nursing documentation and findings; redness must be understood by examiners as a non-specific finding; significance of using anatomically and pathologically correct terms

Evidence Level. Level 6

Scafide, K. N., Ekroos, R. A., Mallinson, R. K., Alshahrani, A., Volz, J., Holbrook, D. S., & Hayat, M. J. (2023). Improving the Forensic Documentation of Injuries Through Alternate Light: A Researcher–Practitioner Partnership. *Journal of Forensic Nursing, 19*(1), 30–40. https://doi-org.uab.idm.oclc.org/10.1097/JFN.0000000000000389

Study Description. Authors explain plans to evaluate the use of alternate light systems (ALS) to improve assessment of bruises in adults who experienced interpersonal violence.

Literature Review: 32 references; many are older presumably because ALS is a newer emerging science and there is a gap in the literature. References relate to research issue

Design/Method/Fidelity. The purpose is an evaluation of the implementation of ALS during the MFE of cutaneous injuries among adult patients. Mixed method design; 5 phase project including assessment, development, implementation, maintenance, and evaluation. Data collected includes observations, policies, interviews, focus groups, admission data, nurse surveys, and clinical records review (fig 3&4). The results will inform the design of a larger scale outcome study; at time of publication was in assessment phase. IRB was obtained.

Sample/Setting. No current sample as the study hasn't started but will be patients from 2 forensic nursing depts located in Maryland; one that employs use of ALS, other does not. Data on cutaneous injury findings will be collected for 6 months

Analysis. Data will include descriptive statistics and thematic analysis for quantitative and qualitative data, respectively. The extent to which forensic nurses adopt the program, implement it based on the developed protocol, and reach patients will be determined by univariate analysis. Subgroup analysis using bivariate statistics may identify conditions in which ALS or its full protocol is less frequently administered. Will explore whether the number of injuries, characteristics and photo documentation quality change over time using a multilevel modeling framework. Multivariable analyses may identify if number of injuries documented varies by race/ethnicity, location on the patient's body, or other characteristics. Themes identified in the qualitative data will contribute to understanding of patients' willingness to be examined using ALS and nurses to use the ALS technology.

Results/Limitations. TBD results: limitations include generalizability depending upon patient variables (age, race, sex, etc.) and being in only one location of country

Clinical Significance/Practice Implications. Current practices disproportionately favor light skin tones so forensic nurses must develop and incorporate evidence-based tools (such as ALS toolkit) to support equitable practice and just outcomes; inform larger studies across multiple locations in the country as well as studies looking at LE and prosecutorial decisions; possible implications for injury findings on patients that can not provide a history

Evidence Level. Unclear since the actual study hasn't been completed; believe that researchers are looking to examine relationships between injury findings using ALS and not using ALS, so likely will be a level 4

Speck, P. M., Ekroos, R. A., Faugno, D. K., Johnson, J. L., Sievers, V., & Mitchell, S. A. (2023). Self-Collection Following Rape: An Integrative Literature Review. *Journal of the Academy of Forensic Nursing*, *1*(1), 18–41. https://doi.org/10.29173/jafn64

Study **Description.** Authors conducted an extensive search of the literature on self-collection of evidence following rape to examine potential of the practice and implications.

Literature Review: 101 references; 35 of those were from 2017-current; some older ones were seminal; not a lot of research available on SANE kits and self-collection, so many had to include general medicine that allow for patient/self-collection

Design/Method/Fidelity. Identify practice of securing evidence and gaps in practice related to evidence collection, as well as the health care delivery impact; and provide an evidence-based path forward; An integrative literature review was completed, limited to publications 2012 – 2022, using a PubMed search; SWOT associated with self-collection were discussed and included in many sections throughout the article.

Sample/Setting. 90 articles: 6 publications related to self-collection, 2 articles were unresponsive (child HIV and Tuberculosis). Gray literature and references in the remaining articles used to find other relevant publications

Analysis. 4 sections were the focus and SWOT was provided for each:

1. The victim and their activities following a crime,
2. The HCP and a dual role in a system where the patient assessment occurs for injury, treatment, and referral,
3. The HCP as a collector of evidence, whether an RN at the bedside or APRN forensic nurse or physician in SA exam, and
4. The system's response when determining patient medical management or management of evidence and its usefulness after collection.

Results/Limitations. Evidence collection should be accurately recorded; more research needs to be done; medical forensic HCP do not determine culpability or probative value of items collected; the evidence supports robust data retrieval system, instructions in self-collection, access to education, location of nearest health care services, and detailed instructions about safe self-collection. There should be tracking of the self-collection from development through collection to destruction

Clinical Significance/Practice Implications. Lots of speculation in the height of COVID with self-collection and this article methodically looked at what is in the current literature where self-collection or patient collection with sensitive testing is currently permitted or being done; authors support direct medical care as a preferred option, but many other options may be considered in person-centered care. Telehealth with a SANE may be sufficient to guide the client through self-collection and this opens new thoughts/opportunities going forward.

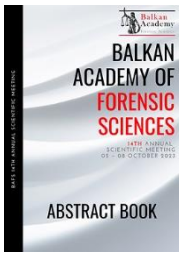
Evidence Level. Level 5

Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing and healthcare: A guide to best practice*. Wolters Kluwer.

Journal of the Academy of Forensic Nursing

Global Updates (by Country)

The International members of the *Academy of Forensic Nursing* receive an invitation to provide updates of activities in their countries with each JAFN publication. The volunteer representatives' comments are below and listed in alphabetical order by country/region.



Balkans

Forensic Nursing Science in the Balkan Academy of Forensic Sciences

Prof. Ersi Kalfoglou
President of Balkan Academy of Forensic Sciences

The Balkan Academy of Forensic Sciences organized the 14th Annual Scientific Meeting as a hybrid congress in Istanbul, Turkey, October 05-08, 2023. Founded in 2003, the Balkan Academy of Forensic Sciences (BAFS) deals with all scientific, educational, and professional matters pertaining to the forensic nursing discipline on an international level. The primary goal of the Balkan Academy is to promote education for and research in the forensic sciences by encouraging the study to improve the practice, to elevate the standards and to advance the cause of the Forensic Sciences. Starting in 2021 the Balkan Academy endorsed a Forensic Nursing Section, in addition to 8 other preexisting sections. There are a very small number of NGOs in the Forensic Sciences arena with a Forensic Science Nursing Section. Therefore, we are proud to have the privilege of being one of the first institutions to undertake the responsibility to promote this science. We extend our gratitude to Virginia Lynch for her dedication and spirit. She organized the section and has been actively participating in the Annual Meetings for the last three years. The 2023 meeting hosted 275 attendees from 25 different countries and accepted 85 oral presentations and 50 posters in addition to two workshops and one panel. One of the most captivating sessions was the Forensic Nursing Session, and included presentations from scientists from USA, Canada, Switzerland Turkey, Portugal, Kosovo, and Iran on with topics such as:

- *Forensic Nurse Hospitalist: The Comprehensive Role of the Forensic Nurse in a Hospital Setting*
- *Responding to Interpersonal Violence: Challenges, Collaboration and Education for Nurses Forensic Nursing in Portugal*
- *Forensic Nursing Science: A Critical History in Kosovo", Building Quality Metrics For Pediatric Forensic Nursing Programs*
- *Consequences of Presence of Forensic Nurses in Health Care System*
- *Slaying Dragons: Prevention of Adolescent Human Trafficking*

Virginia Lynch, the founder of the Forensic Nursing Section of the Academy presented the very interesting topic *A Contemporary Response to Humanitarian and Human Rights*. The Balkan Academy of Forensic Sciences believes in the highly valuable contributions of Forensic Nursing Science and plans to continue supporting the idea in any possible way.

Canada

Aimee Falkenberg BSN RN SANE-A, President

Canadian Forensic Nurses Association 2023-2025

The Canadian Forensic Nurses Association (CFNA) had a busy year. We called out to our active membership for expert members willing to develop our standards of practice for the forensic nurse who is providing medical forensic care to survivors of all ages and all genders. The work is slated to be finished in early winter 2024. The work will also provide the foundation for our 2024 project committees, which are developing two guidelines for the care of adults/ adolescents and one for pre-pubescent patients. Our membership goals are met with the development of both a consensus *standard of practice* and *practice guidelines* for care of patients who are survivors of sexual violence.

In 2023, a busy year! …the CFNA executive worked alongside the Canadian Nurses Association (CNA) to look for opportunities and options to bring certification to Canada for Canadian Forensic Nurses that would be managed and operationalized through CFNA. The process to standardize the forensic nurse practices in Canada for the Canadian Forensic Nurses and leverage the expertise and advanced level training that is essential in the role.

The response to survivors of violence is a major need in Canada. To bring attention, in the fall 2023, advocacy led CFNA and CNA to co-release a letter to the Canadian government requesting their time to review the national *state of response to survivors* and the need for improvement and government support. We are awaiting response to our request.

CFNA offered virtual leadership meetings every two months for all team leads and individuals coordinating and managing programs across the nation. The meetings opened the door for a larger conversation and the opportunity to work together on many different topics.

Futuristically, CFNA hosts its *very first* national conference June 6, 2024, in Quebec, Canada. The national conference is timely because our membership tripled in the last 18 months!

CFNA plans to continue our hard work into the next year, fulfilling our membership's mandate to support forensic nursing by influencing healthcare policies, taking the initiative, and driving innovation, all while advocating for best practices! We plan to continue to promote the need and value for forensic nursing services in healthcare across the lifespan by identifying and partnering with other organizations. We plan to continue to promote the value of the Canadian Forensic Nursing role through role recognition and out expertise, fulfilling our mission of promoting trauma-informed, patient-centred, and evidence-based forensic nursing practice in Canada.

Israel

Catherine Carter-Snell, JAFN Editor-in-Chief

As you may be aware, our international AFN members from Israel are immersed in the Israel-Hamas war. Many of us cannot imagine the burden on those involved. We recently received a letter from two of our AFN members from Israel, Shoshana Melech-Shalom, and Dr. Orli Grinstein-Cohen. I am including a quote from them with their permission:

> *"I am a resident of Sderot, one of the towns the terrorists entered, murdering innocent civilians on the street before attacking the police station. I have been a displaced citizen for nearly 50 days, continuing to travel long distances to my workplace in the south of the country despite the war and alarms. We have children, nieces, and nephews in combat. We have all lost colleagues and friends.*
>
> *Furthermore, it is important to note that a year ago, research was completed on the topic of nursing, medical and paramedic personnel on their attitude towards security prisoners and their medical and nursing treatment of them. Outstanding was the response of the personnel that they treated them as they would treat all other patients, giving them the best possible care without prejudice, because they believe that giving the best care is essential to all human beings."*

This perspective from someone involved in a war, regardless of sides, raises significant implications for all of us as forensic nurses. They are not asking us to choose sides, only to offer our support both individually and as an organization. We have forensic nurses in many areas of the world involved in war and disasters. The Ukraine-Russia conflict is another example. There are many implications for forensic nurses, even those not directly impacted. Those involved not only face the tragedies and losses of conflict but have the added burden of care. Some of the implications for AFN and its' members include the following:

a. **Awareness of current events**: Part of evidence-informed practice is being aware of the environment in which we give care. This includes being aware of what is happening in our communities and the world. We may not be front line but may provide care for refugees or front-line personnel coming to our countries. Some nurses I have spoken with were unaware or under-aware of the Israel-Hamas war or the one in the Ukraine. This is perhaps an unfortunate side effect of streaming services and isolation from news other than social media. Some students and professionals have told me it is too traumatizing to watch the news. Even social media may not provide news information in some situations. For instance, Canadian news was blocked from social media due to legislation requiring the media companies to pay for the news. News is therefore unavailable on social media unless actively seeking it. Furthermore, when we do watch the news, not all of it is credible or reliable. This has dire consequences for forensic nurses. We need to remain informed, critically evaluate the sources, and remain aware

of structural drivers for violence to effectively intervene and/or prevent violence

2. **Developing systems of communications to enable support**: Individuals and forensic nursing organizations need to develop strategies to support forensic nurses and reach out. Forensic nurses in war and disaster face personal as well as professional crises and are at risk without support. This does not mean sides have to be chosen but it is important to know that the nurses have support of their community. We find front line providers have more delayed PTSD risks as they give so much of themselves during the crisis and avoid their own self-care. We need to be there individually and organizationally to offer support. The Academy of Forensic Nursing (AFN) has an international special interest group, but we do not currently have any strategies as a group to support each other. We can do better- we need to have strategies such as to be able to securely share emails and countries of members so both individuals and the organization can identify those potentially at risk or involved and offer support.

3. **Avoidance of bias**: As our colleagues point out, it is important to provide services to all sides. This is an important position for forensic nurses. We provide services without bias to anyone involved in violence or conflict We are providing healthcare, and we refer to them as patients or clients, not victims or perpetrators for this reason. This is a key principle grounded in the codes of nursing ethics.

4. **Need for AFN to develop position statements**: We have also realized that we do not have a position statement against war, disaster, or structural violence with AFN. Tensions are rising in many areas of the world and forensic nurses will increasingly be involved. We need to involve our members in drafting position statements and protocols to voice our concerns about violence and its' consequences. AFN takes a stand against all violence and emphasizes the need to provide care for all individuals experiencing violence.

In summary, on behalf of the AFN Executive Board of Directors and the journal (JAFN) Editorial Board, we want to offer our support as well as our thanks to our Israeli forensic nurse members and colleagues for helping us to identify significant gaps. It is hoped that we can work with all involved in conflict to develop robust strategies for international support through the development of position statements against violence and communication strategies. Our hearts and prayers are with all the nurses involved in and affected by conflicts, their families, and their patients.

Switzerland

Valeria Kaegi & Dominici Hani

Forensic Nursing in Switzerland is constantly evolving and is becoming increasingly apparent in various areas where nurses encounter persons affected by violence, such as prevention, long-term geriatric care, and further training programs for nurses. The *Swiss Association Forensic Nursing* looks back on a successful May 2023 Forensic Nursing Forum and is already planning the next Forensic Nursing Forum, which occurs on May 3-4, 2024 in Chur, Switzerland. For further information and registration, visit *Swiss Association Forensic Nursing* website for updates!

Editor's Note

Catherine Carter-Snell, PhD RN SANE-A DF-AFN

These submissions do NOT represent the comprehensive list of our international member activities. Excellent work is happening globally to advance the role of the forensic nurse across the world! JAFN wants to hear from you and include your initiatives and activities in future issues. Interesting items to include are upcoming conferences, advancement of forensic teams, or relevant forensic collaborations. Email: jafn@afnmail.org or the editor ccartersnell@afnmail.org. The journal publishes issues in March, July, and November each year. Submissions are requested 1-2 months in advance of the publication month.

Journal of the Academy of Forensic Nursing

News

AFN Receives ANCC Accreditation

Kristi Mayo, Marketing

The Academy of Forensic Nursing achieved re-accreditation for nursing continuing professional development (NCPD) in July from the American Nurses Credentialing Center (ANCC). This program recognizes organizations that provide continuing education for registered nurses that is free from commercial influence and developed using evidence-based criteria.

"The goal of AFN educational offerings is to promote generalist forensic education, research, and service for all of our members and our interdisciplinary partners," said AFN Education Director Angelia Trujillo. "We also strive to promote awareness of new programs, new research, and promising practices across our platforms."

The Academy received its first accreditation through ANCC in 2021. Trujillo, who took the lead as the organization's first education director earlier in 2023, said this accreditation is "a representation of the quality of nursing education that AFN is able to offer members and non-members via webinars, bootcamps, plus regional and national conferences."

Most of the educational offerings on the AFN learning management system can be accessed on-demand and offer continuing education credits. AFN members receive discounted rates for these courses, as well as free access to live Wednesday Webinars. For a full list of courses, visit: https://goafn.thinkific.com

For more information about the ANCC Accreditation Model, go to: www.nursingworld.org/ncpd

Forensic Nursing Certification Board (FNCB)- Global Change

Patricia M. Speck

In 2018, the Forensic Nursing Certification Board (FNCB) embarked on finishing the research to support forensic nurse certifications. Led by the Former IAFN (2003-4) and current FNCB President and Principal Investigator, Dr. Speck completed nine consensus meetings among forensic nurse leaders, educators, and providers. After 20 years, the Delphi study and qualitative analysis was complete.

Transparency and sharing make FNCB's global outreach successful! Working with universities and colleges of nursing in interested countries, the FNCB disseminates the evidence for aligning forensic nursing with the country's nursing competencies, helping to establish pedagogical frameworks for the programs of study globally. The core curriculum is culturally humble, trauma-informed, and addresses the essential elements in a country's unique educational

system and the outreach that builds on Virginia Lynch's legacy and her commitment to the forensic nurse specialty practices.

To participate in the revolution to establish forensic nursing globally, teams of faculties representing multiple universities and providers of forensic nursing care communicate with FNCB to gain access to the established FNCB Core Competencies, the developing curriculum and scientific evidence for practice. All are welcome!

If your University, College, or School of Nursing is interested in aligning with the FNCB pedagogical efforts, please reach out to the Forensic Nursing Certification Board through:

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President (2022-24), Forensic Nursing Certification Board
https://goforensicncb.org/

Journal of the Academy of Forensic Nursing

Thank You!

Catherine J. Carter-Snell, PhD RN SANE-A (Canada)

Editor-in-Chief JAFN

This is our final issue for 2023- the second of two inaugural issues the Journal of the Academy of Forensic Nursing (JAFN). We are proud of these first issues, working together to bring clinicians and researchers together and providing free, open source scholarly articles.

Peer Reviewers

These issues would not be possible without authors submitting, and without the excellent support of our peer reviewers. We were fortunate to have a number of volunteers to peer review. The reviewers were selected based on relevant expertise to the articles published. . A special thank you to the following reviewers who provided input on the two issues this year:

Richelle Booker

Natalie Calow

Jacqueline Cheek

Diana Faugno

Jodie Flynn

Jeanine Jacopec

Cathy Koetting

Sandra Shapiro

Marie Lasater

Annie Lewis-O'Connor

Emily Myers

Anna Staszeewski

Patricia Speck

Deborah St. Germain

Deborah Stone

Angelia Trujillo

THANK YOU

Thank you to those who volunteered even if not used in these two issues. We hope to have many submissions in future to use your skills.Upcoming issues can be expected in March/April, July/Aug and Oct/Nov of 2024 (three new issues each year). If you plan to submit, please submit articles to the site at least 2 months prior to publication date to allow review. If peer reviewing, please check your account and ensure your areas of interest are noted to help us determine relevance in assigning articles. If you know of someone else, nurse or allied professional, who may be able to be a peer reviewer for next year's issues please pass on our link. https://mrujs.mtroyal.ca/index.php/jafn

Editorial Board

A large thank you also to our editorial board members, who have spent considerable time reviewing the articles ,collecting and synthesizing peer review feedback for authors, developing guidelines and processes, copyediting/proofing, and navigating the new software for the journal.

Associate editors: Paul Clements
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Patricia Speck

Happy holidays to all from me on behalf of the editorial board of JAFN!