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ORIGINAL ARTICLE

Situational awareness in the identification of abuse – Out-of-hospital emergency care providers’ experiences

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ABSTRACT

This qualitative study describes out-of-hospital emergency care providers’ experiences and views of situational awareness (SA) in the identification of abuse, including observations that led them to suspect abuse. Nine prehospital emergency care providers and three community paramedics were interviewed based on preselected themes. The data was analyzed using inductive content analysis. According to the results, emergency care providers’ self-defined situational awareness consisted of cognitive competence (logical reasoning and detection of cause-effect relationships); emotional competence (empathy and emotional intelligence); social competence (interaction skills and assessment of family dynamics), and experiential knowledge. Indicators of abuse involved the overall situation; the client’s physical condition; the client’s mental condition; the context and circumstances, and the logic in client reports. Although situational awareness develops with work experience, it is advisable for educators to include a wide range of cognitive, emotional and social skills in the initial and continuing education of emergency care professionals. These skills can be practiced using multi-professional simulation-based education.

Key Words: Abuse, Competence, Paramedic, Emergency care, Situational awareness

1. INTRODUCTION

The number of reported cases of abuse and neglect is increasing internationally. People of any age can become subject to various forms of abuse or neglect. The experience can have serious short or long-term adverse effects, including physical injury, mental health problems and difficulty in social relationships.^[1]

Care providers in medical emergency services have a unique opportunity to help identify adults, elders and children at risk. These professionals see clients in their own environment, occasionally accompanied by abusive family members, which allows them to observe family dynamics and interaction,

and detect signs that would otherwise remain unnoticed.^[2,3] Emergency care providers also frequently see clients, who refuse treatment or transport to hospital. They may even repeatedly visit the same clients, which allows them to accumulate evidence of potential abuse.^[2]

This study starts with the belief that experienced emergency care providers develop a strong situational awareness in the identification of abuse. They may possess, either consciously or more intuitively, a checklist of indicators that leads them to suspect potential abuse. Finding out what emergency care providers’ self-defined situational awareness involves and studying their “internal checklists” for identification of

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abuse can help to develop the quality of care and facilitate newcomers' work in the emergency medical services.

2. LITERATURE REVIEW

2.1 Situational awareness

The classical definition for situational awareness (SA) is Endley's "perception of the elements in the environment in a volume of time and space, the comprehension of their meaning and the projection of their status in the near future".^[4] According to Hunter et al.,^[5] who have compared and discussed theoretical frameworks for SA, Endley's theory is the most appropriate one for paramedicine. Good situational awareness is especially critical in high risk situations.^[6] In practice it means that, based on rapidly processed information and an understanding of what is occurring in a situation, experienced emergency care providers can make informed assessments about how the situation will evolve and what implications might be involved. Awareness of what still needs to be known in a given situation, and knowledge about what other people involved in the situation know or do not know can also be considered important aspects of situational awareness.^[7] The selection and processing of information is an iterative and dynamic process.^[8] Being able to make assessments and decisions under stress seems to be implicitly or explicitly associated with many discussions on SA. According to Kuusisto,^[9] SA essentially involves combining external and internal knowledge (data from the environment and awareness of one's resources and the organization of interaction within the system) and interpreting the situation through oneself.

Researchers today agree that situational awareness also exists at the level of teams and organizations.^[6,10] The term team situational awareness (TSA) is commonly used to refer to a shared understanding among team members. Other common, related terms include shared situation awareness, team shared awareness, team awareness and distributed cognition, among others.^[11]

Rosenman et al.^[10] discuss TSA in association with the larger concept of team cognition, stressing both the team members' relatively stable knowledge structures and the team's dynamic processes as represented by the interaction between team members. TSA can be claimed to be related to team situation models (shared knowledge) and to transactive memory systems (collective awareness of how knowledge is distributed in the team). Measuring TSA in healthcare teams is challenging, but Rosenman et al. have proposed and tested a method for simulation-based assessment of TSA or shared understanding in interdisciplinary teams. Their results demonstrated a positive correlation between TSA and team clinical performance. The investigators summarize recent

research by claiming that good SA creates adaptive teams capable of modifying their cognitive, affective and behavioral processes.^[10]

There is still little in-depth research on SA in paramedicine, although evidence from aviation and other high-risk industries shows that good SA reduces accidents.^[5] In aviation, SA has been conceptualized as an important component in non-technical skills, that is in "the cognitive, social and personal resource skills that complement technical skills and contribute to safe and efficient task performance",^[12] and as a core component in Crisis Resource Management, alongside with other important teamwork behaviors, for example leadership, communication and resource utilization. In healthcare industries, anesthesiology was the first specialty to adopt the idea of SA and CRM principles, and it has been followed by other specialties, including emergency medical services.^[13] As in the other high risk and high stress industries, the rapidly changing situations typical of EMS make it important that team members possess SA and actively share their observations when they assess patients, anticipate risks and make decisions in order to secure the safety of all those present at scene.^[5,14]

Some research exists on SA in prehospital EMS.^[5,8,14-16] Norri-Sederholm's studies on paramedic field supervisors' SA focused on the flow of information, formulating the field supervisors' information interest profile and revealing their four roles, those of a decision-maker, planner, analyst and situation follower. The most important information categories in developing SA were events, action patterns, decision and means. The five critical categories related to information needs and information delivering involved incident data, mission status, area status, safety at work and tactics. The paramedic field supervisors were found to be multitasking professionals, who built SA by combining the available data with extensive know-how and tacit knowledge.^[15,17]

Busby and Witucki-Brown^[8] developed a theory of SA in multi-casualty incidents. They see SA as an on-going, iterative process, in which all new information informs new actions, and all decisions made affect the emergency response providers' SA. The care providers' SA – perception, comprehension and prediction- is based on information from multiple sources and essential in managing resources, roles, relationships and emotions at scene.^[8]

As summarized in a study of Arfsten on civilians' situational terror awareness,^[18] in SA, the goal is to gather tactical, actionable information accessible in the immediate environment through purposeful and active perception and to integrate it into a coherent picture for imminent decision-making or action. SA is not a state of knowledge, but a process. The

widely known definitions do not include an affective (“gut feeling”) component, or at least it is not rendered explicit.^[18]

Last, in the military domain, situational awareness has been presented as a middle layer in a human information model consisting of the horizontal levels of situation picture, situation awareness and situation understanding (the highest level). The top layer of the model developed by Kuusisto contains information most relevant for decision-making, but decisions are made based on information from all layers. The model includes a description of the information classes required in forming a situation picture, awareness and understanding.^[19] Some researchers have claimed that the situation picture and situational awareness are limited concepts, and that the scholarly literature should strive towards the broader concept of situation understanding.^[11] Figure 1 summarizes the concepts derived from relevant literature on situational awareness.^[4, 6, 9, 10, 19]

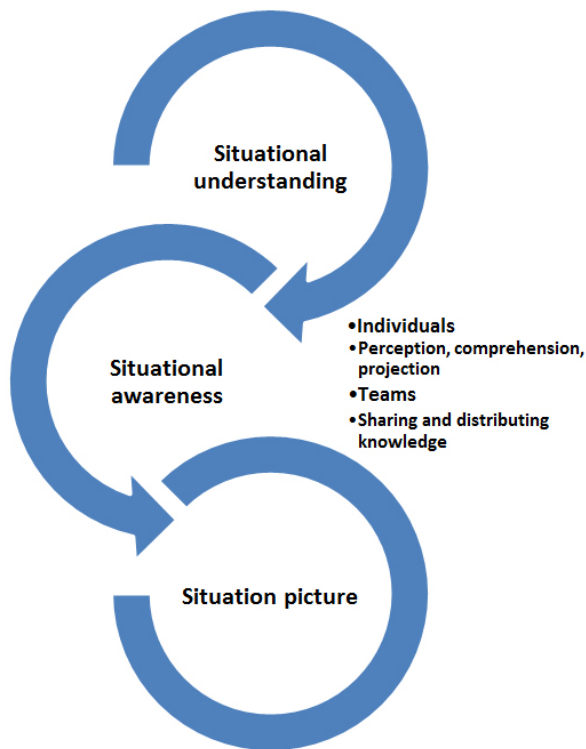


Figure 1. Concepts related to situational awareness

2.2 Identification of abuse in EMS

The ability to identify potential abuse is an important skill that requires situational awareness in emergency care and in health care services in general.^[20] The National Advisory Board on Social Welfare and Health Care Ethics in Finland stresses that in the detection of abuse, the professional’s ethical competence and respect for vulnerable clients are of great importance. The ethical competence involves humane

interaction and appreciation of clients to help them access their own resources.^[20] Empathy, the ability to recognize other people’s feelings while making a distinction between self and other,^[21] is required from professionals making an effort to help the victims of violence and neglect. The ability to empathize, however, may decrease with years of emotionally taxing encounters, and the professionals face the risk of developing a dehumanized perception of their clients.^[22]

The victims of abuse or neglect can be of any age. Family violence has been found to be the most prevalent form of interpersonal violence. The perpetrators are most commonly family members or informal care-givers. The term family violence is commonly used to refer to any abusive, violent, coercive or threatening behavior within a family. It seems based on research that the most common forms of family violence are child abuse, domestic violence against women, elder abuse and sibling violence.^[23] Emotional maltreatment is more difficult to identify and define than physical and sexual abuse.^[24] The identification of any kind of abuse may be challenging, because both the perpetrators and the victims often try to hide or deny abuse.^[25]

Women and children may be more likely to be subjected to violence in their own homes by family members than outside home by strangers.^[23] The use of intoxicants increases the risk of violence in the family.^[20] Elder abuse is often associated with loneliness, poor daily coping and social exclusion.^[20, 26, 27] Elders may also become targets for financial abuse.^[28]

Various protocols and assessment tools have been compiled for the identification of abuse, but few screening tools have been created to assist EMS workers in their work. A checklist suggested for older adults by Cannell^[29] includes, besides medical history and physical condition, the client’s behavior, home conditions, caregiving quality, lack of social contacts and support, contacts to EMS from friends or neighbors and the emergency care provider’s instincts or “gut feeling”.^[29] The European Society for Emergency Medicine has recommended the S.I.G.N.A.L program, which has been field tested in several European countries, an intervention protocol of proven efficacy for EMS personnel to guide the identification and management of domestic violence.^[30]

Prompt interventions and referral to further care and support services can have a positive effect on the client’s life management in the acute situation, but also in the long term.^[31] Interventions can stop the problem from becoming chronic and prevent the development of mental health problems, which in turn can improve the family’s life quality and save society’s resources.^[20]

3. METHODS

This is a qualitative interview study conducted in Finland with out-of-hospital emergency care providers. The findings are based on inductive content analysis.

3.1 Objective

The study describes out-of-hospital emergency care providers' experiences and views of situational awareness (SA) in the identification of abuse, including observations that led them to suspect abuse. The knowledge produced can be used to develop initial and continuing education for emergency medical services (EMS). SA has not been studied within the context of abuse identification in EMS before.

The research questions are:

1. What does emergency care providers' self-defined situational awareness involve in the identification of abuse?
2. What observations lead emergency care providers to suspect abuse?

3.2 Data collection

The study was conducted in Finland, in a medium-sized hospital district. All the 180 professionals working in the out-of-hospital emergency services of the hospital district were contacted by email and invited to participate. All potential participants shared the same information about the study and had an equal opportunity to participate. The investigators did not in any manner influence the selection of the targeted population. Twelve professionals, nine prehospital emergency care providers and three community paramedics, were willing to be interviewed. Having received all the relevant information about the study, they were asked to sign a written consent form. The concept of situational awareness was not discussed beforehand; the study relies on participant definitions of SA.

One investigator conducted the interviews with the participants in April and May of 2019. The interviews were based on the following themes: (I) Abusive situations encountered in EMS; (II) How is abuse detected in EMS; (III) Situational awareness as an emergency care provider's attribute; (IV) What does an emergency care provider's situational awareness involve as a skill; (V) Factors that influence situational awareness; (VI) Challenges in encountering abused clients in EMS; (VII) Assessment of the abused client's life situation; and (VIII) Arranging further care for the client.

The length of the taped interviews varied from 45 to 60 minutes. The participants, 6 women and 6 men, were 25-50 years old. All of them had been working for the out-of-hospital emergency medical services for at least 3 years. The most experienced professionals had a work history of over 10 years

in the EMS. Almost a hundred pages of transcribed data were generated (font 12 single spacing). Anonymity was secured by numbering the interviewees.^[32]

3.3 Data analysis

The study used inductive content analysis. The principal investigator conducted the analysis, reading the material through several times to detect phrases, clauses and sentences that seemed to answer the two research questions. This was continued until saturation was reached and no new themes emerged. Summarized meaning units were formed and similar items grouped together under categories. Categories with similar meanings were sorted into generic categories, which were abstracted into a main category. The other members of the research team contributed by commenting on the findings of the study. There was general agreement on the interpretations.^[33]

3.4 Rigor and ethics

Situational awareness is difficult to operationalize and measure. For this study, a qualitative approach was selected in order to obtain a rich body of data to further and deepen the understanding of the topic. The permission to conduct research was obtained from the hospital district's administrative director of nursing.

The criteria of reflexivity, credibility, confirmability and transferability were used to assess the rigor of the study.^[34] To start with reflexivity; the members of the research team had prior knowledge of the topic based on extensive research experience and first-hand preunderstanding of the identification of abuse in emergency nursing practice. This facilitated the analysis, but may have influenced the findings. The investigators were aware of holding presuppositions, and made an effort to consult the data to avoid bias. The carefully conducted analysis and reporting can help readers assess the credibility and confirmability of the findings, or decide if the results could be supported by other investigators. A number of direct quotations (translated from Finnish) were included to allow readers hear the original voice of the participants. The investigators assume that the findings can be transferred to EMS settings in other countries.

4. RESULTS

This chapter first presents the findings regarding the first research question, What does emergency care providers' situational awareness involve in the identification of abuse? Based on the analysis of the interviews, situational awareness appeared to consist of cognitive competence (logical reasoning and detection of cause-effect relationships); emotional competence (empathy and emotional intelligence);

social competence (interaction skills and assessment of family dynamics), and experiential knowledge. The latter part of the results deals with emergency care providers' responses to the second research question: What observations lead emergency care providers to suspect abuse? The analysis yielded the following categories: The overall situation; the client's physical condition; the client's mental condition; the context and circumstances, and the logic in client reports. Direct quotations are provided, with the interviewees coded P1-P12. The results of this study have been summarized in Figure 2.



Figure 2. Situational awareness according to the study participants

4.1 Constituents of situational awareness

4.1.1 Cognitive competence

According to the results, it seems that logical reasoning and detection of cause-effect relationships were essential cognitive skills contributing to the situational awareness of the study participants. First, the emergency care providers appeared to base their logical reasoning on their impression of the client-context relationship. The interviewees were more likely to suspect abuse, if they received conflicting information from the client and the environment (context). What the clients told was at times in opposition with the cues present in the environment. Second, sometimes an absence of communication was detected. Things were left unsaid, which indicated that the client was withholding information for fear of further violence or neglect from the abuser. The emergency care providers said, for example,

“The environment was a little strange, first I noticed that this old house was kind of messy, although they had clearly cleaned it, then behind the couch there was this puke bucket, which of course did not fit into the picture of an old person like this, you see them in alkies, where they fall asleep on the couch in order to be able to vomit and keep drinking beer at the same time, so they get the buzz over and over again, so this bucket was something that did not fit into the picture at all, then we found out that a bachelor son was living there with his mother most of the time, he took advantage of her money, because of unemployment he could not afford

to keep drinking for two weeks if he did not help himself to his mother’s wallet.” (P1)

Third, the emergency care providers interviewed for this study reported that they grew suspicious if a client did not continue describing the original situation or symptoms, but started meandering in an illogical way, bringing in new unrelated information. One of the interviewees described a situation: “There were too many stories for what had happened, or the story kind of kept changing”. The interviewees said that in addition to fear, this kind of reaction might be explained by feelings of shame or by an attempt to protect the abuser from punishment. Despite the suffering, the abused may still love the abuser.

In addition to the observations and logical reasoning regarding clients' communication, the interviewees mentioned the ability to anticipate and comprehensively assess the client's situation, the “whole picture”, as they said. One of them explained,

“A paramedic’s situational awareness is a kind of reasoning, which aims at stopping the revolving door system, people coming for treatment again with the same or another complaint, things not being dealt with, getting stuck. We should develop the co-operation, to prevent the same person being stuck in the cycle without proper attention, situational awareness means that you recognize that the same person uses the resources again and again, when the overall situation is not under control, situational awareness also means courage to break the vicious circle, let the cat out of the bag and intervene with the abuse, when you see clients in their homes.” (p8)

Last, the detection of cause-effect relationships emerged as a cognitive element in the emergency care providers' situational awareness. They reported having detected potential abuse based on patient interviews and physical assessment. The patient's symptoms were a starting point for seeking explanations, especially if the symptoms seemed uncommon or severe in relation to the patient's report. These symptoms could involve, for example, “bruises in unexpected places, in children bruises in areas that cannot be explained by children's normal activity” (P2), or “The grandma had bruised buttocks, she said she had fallen down the stairs, but there were no stairs in the house, and she had not been out for years, and could not move properly”. (P6)

4.1.2 Emotional competence

Besides cognitive skills, emotional skills, especially empathy and emotional intelligence, were seen to be constituents of situational awareness. The emergency care providers also repeatedly referred to having had a “gut feeling” or an “in-

tuitive feeling” that all was not well. For example, *“I had this funny feeling right from the start, a premonition that something was wrong about the situation.”* (P5)

Placing oneself in another person’s situation and making an effort to reach the other person’s experience of reality were mentioned in the interviews as helpful skills, especially when working with depressed, anxious and fearful clients, who may have been subjected to abusive behavior. According to the emergency care providers, approaching clients with empathy and compassion helped to gain their trust and made clients more likely to open up and tell about their fears and abusive experiences. The interviewees described their work as follows, *“I have got into the habit of asking about the person’s life history, because empathy has a surprisingly calming effect on the situation.”* (P7)

“When you express understanding, you can turn the situation around, I have been doing that, a lot of talking, because of that I have discovered many things that affect the situation, well, the interview is essential, good antennae. The seventh sense is not always enough, you have to figure out something else, a complementary question, asking in an inconspicuous, neutral way and being present, giving space to the client, so the client will give you the diagnosis, they can tell a lot more, also about abuse.” (P3)

The interviewees pointed out that clients who have been subjected to abuse are very vulnerable and prone to exhibit various emotions and reactions, depending on how serious or unexpected the situation has been. This requires situational sensitivity and ability to determine if the client can cope with the situation, or whether emergency mental health services or crisis intervention is indicated. One of the emergency care providers described a situation, *“We had a call with a dead person, and tried to get some sort of crisis response for them, it was a situation where they could have used mental support and comfort. Somebody had been killed and another one stabbed and the family members were in a state of shock.”* (P11)

The interviewees stressed the importance of listening, “being present” and providing an appropriate response to emotional reactions. The ability to interpret nonverbal behavior was mentioned as well. For example, *“It is a form of ethical competence, emotional competence, the way you recognize a social emergency and know what to do, what you are allowed to do in a person’s home territory, it is nonverbal speech, reading between the lines.”* (P3)

Finally, emotional intelligence skills are also of importance from the perspective of occupational safety. The interviewees mentioned situations, in which the abuser was present

and implicitly or explicitly aggressive or under the influence of drugs. For example, *“Emotional intelligence skills and situational sensitivity have been helpful, we have always got out of the scene when guns and knives have appeared”* (P6), and *“Emotional intelligence, situational awareness, a gut feeling, that is what is needed when you are faced with strong hate speech, there is more of that nowadays.”* (P8)

4.1.3 Social competence

Further skills that emerged as important constituents of situational awareness in this study involved interaction skills and assessment of family dynamics, presented here under the heading Social competence.

Professionals in emergency medical services may face complex situations, in which good interaction skills are necessary. The interviewees gave examples of situations, where the suspected abuser and abused were simultaneously present, the atmosphere was fearful, and open communication did not seem possible. The following quotations from two interviewees are examples of threatening situations, in which the need for good interaction skills becomes pronounced.

“If there is this fear or awkwardness in an interaction situation, well, if you realize that there’s something, you start feeling that you want to know more about it, find out about it, that is what situational awareness is, it depends on who is there, and if you start suspecting that this is now the guilty one, you may not be able to bring it up there and then, there is this discretion that belongs to situational awareness, you don’t just blurt out everything you’ve noticed, because you don’t know how the others will react, especially if someone feels guilty there, there may be an aggressive outburst.” (P4)

“The man was at least two meters tall if not taller, but then what happened, I realized that the client was threatened, and there was also an occupational safety risk, so that if I had asked the wrong questions at that time, he might have reacted with aggression. But then, after he had gone, we stopped beating about the bush.” (P7)

According to the interviewees, interaction skills were required to make a realistic assessment of the overall situation without causing risk to anyone’s health and safety. As one participant put it, one had to “figure out a way to open up the situation, cleverly, with humility and respect” (P10). The interviewees pointed out that at times, situations escalated so that it became necessary to transport the client to the emergency clinic for an assessment and interview. In such cases, it was essential to separate the suspected abuser and the abused in order to protect both the client and the care providers. In a safe environment it was more likely that the client found the courage to report what had happened.

Good interaction skills were also necessary to ensure smooth collaboration between the professionals in challenging situations, and to improve what the interviewees called “team awareness”. One of the interviewees told,

“It even happened that there was no reason to take the client to hospital and my colleague was wondering a little, why are we transporting this client, why did you say that now we are leaving – and then I said I’ll tell you at the hospital, and during the ride I kept interviewing the client and getting more information, and the driver was listening in the vehicle, and I didn’t have to explain any more after all.” (P1)

Another finding that emerged from the analysis was that the observation of family dynamics to detect intimate partner violence, child maltreatment and other forms of abuse was seen to be an important part of situational awareness. According to the interviewees, this is a challenging task during a typically short contact that requires what they called “psychological situational awareness” and work experience. The emergency care providers told that they needed to keep their eyes open for signs of intoxicant abuse, “learned helplessness” and indifference. In the examples given by them, a baby “had been left in the car in a hot day, the parents blasted, sunning themselves, we had to take the baby to the emergency clinic” (P12), and another baby’s parents “out clubbing, with the baby left outside the bar in a stroller. Un unknown bypasser had called the emergency number, so we got there.” (P11)

According to the participants, the assessment of family dynamics was based on the observation of verbal and non-verbal interaction. The emergency care providers told that they paid attention to what was shared between family members, and what was “hushed up”, possibly due to feelings of shame, guilt or fear. As one participant put it, “the abused may feel ashamed and deny the situation, because they are afraid”. (P3) In another example, one person dominates the interaction in a family; “If the other person replies, she or he is at once put down, things like that, you notice from communication that they are not in good terms” (P9). The emergency care providers also observed non-verbal cues in family members, for example physical distance maintained between people. In one case, “the arm was broken, they just said that the child had fallen off a swing, but clearly the child avoided one of the parents.” (P12)

The interviewees pointed out that ethical issues needed to be considered in the assessment of family dynamics. They said that despite suspected abuse, it was important to approach family members neutrally, and not accuse them of anything. For example, one participant told, “I usually ask if they want help there or if they think they can cope on their

own, I almost always ask that, because all families have a different setup.” (P11). Concerns about potential abuse had to be addressed in a discreet manner. Several interviewees agreed that bringing up a concern with family members was not an easy task, because the problem was commonly denied. One had to “think carefully if it was possible to bring it up on scene.” (P4). Some specific situations were also described during the interviews, for example “One of the spouses has Alzheimer, is jealous and controls the other one, it’s hard for both of them, talking sense doesn’t help, there’s no use, they don’t get it.” (P6) One of the emergency care providers discussed the difficulty of dealing with suspected child abuse as follows:

“It is quite difficult, how to bring it up to the parents in that situation in a neutral way, you can’t just blurt it out – how to communicate that the injury is not a typical one – like a bruise would be in a child of this age, to ask are you sure it happened the way you told me, it can be quite a challenge, and of course in such a situation I start suspecting that the child has been abused, that the injuries don’t match the mechanism of injury, what the parents tell, what has happened, of course in that situation you take the child to hospital, to be examined, but how to say it to the parents, when you have to be honest, on the other hand, it won’t work if the parents get insulted, if you accuse them, it may be a challenging situation.” (P5)

4.1.4 Experiential knowledge

There was one more element, the use of experiential knowledge, that emerged from the data analysis as a significant constituent of situational awareness. According to the emergency care providers, their previous experience of work with children, older people and clients of mental health services made them better prepared to identify abusive situations and to decide what action to take. The participants felt that earlier encounters with abused clients had increased their sensitivity and “intuition”, or “gut feeling” about various situations. One of the participants, for example, faced with a fist fight between a drunk couple had been able to refer to an earlier case of domestic violence and follow the same course of action, separating the couple and talking to them one by one. As one of the interviewees elaborated,

“It’s a kind of sensitivity that develops with work experience, the first thing I paid attention to during the first 15 seconds was that it was a shabby-looking house, mainly ok, what you can expect from an old house, no design, but then this puke basin didn’t fit into the grandma’s place, she didn’t show the habitus of an alcoholic, she was a non-drinker, so why is the basin there, something is wrong now, and there were sheets on a black leather couch. You could see that someone had

been sleeping there, but the grandma had a nicely made bed in the bedroom.” (P1)

The interviewees further mentioned that the “gut feeling” was especially useful in situations involving several people besides the client. The participants claimed that a well-developed gut feeling or intuition could also help identify clients’ problems even when the emergency care providers and clients had no common language.

4.2 Indicators of abuse

4.2.1 The overall situation

The second research question in this study was: What observations lead emergency care providers to suspect abuse? The ability to detect certain indicators of abuse is seen to be part of the emergency care professionals’ situational awareness.

The emergency care providers interviewed for this study told that in their work, they always took into consideration the overall situation on scene. First, it was essential to determine the most serious or urgent problem. In addition, both the client’s and the care providers’ safety needed to be secured. For example, as one of the participants said, *“When we get there, we must check the exits, check the environment and take into consideration all potential risk factors, make observations, try to assess how people are coping here, in this home” (P7)*. Another interviewee explained: *“First, in an apartment with drug users or intoxicated people, I concentrate on finding the person in need of treatment, then I take a general look at the other people’s condition and quickly check the exits.” (P4)*

According to the interviewees, the assessment of the overall situation provides a background for the recognition of potential cases of abuse. For example, learning about broken family relationships, divorce or conflicts in a blended family can help emergency care professionals put their observations into a context. One of the participants described a situation as follows: *“A girl said that her mother had spent three weeks with some man in XXX and didn’t care where the daughter was, young people sit in a park, they have no other place, she had cut open her wrists.” (P6)*

4.2.2 The client’s physical condition

The emergency care providers reported that they used the ABCDE protocol to assess the physical condition of their clients. In addition to the measurements and observations based on the ABCDE approach, they paid attention to their clients’ general appearance and physical complaints and symptoms. One participant said, *“I always assess the patient using the ABCDE protocol, then I check for cuts, lacerations, bruises and fractures” (P3)*. Second, the interviewees reported comparing their observations to the clients’ report

of the incident to detect signs of physical abuse. These involve, for example, *“injuries that don’t make any sense at all, like both hands have been burnt”*. One of the participants described the assessment:

“To see if there is a reply, if the heartbeat is regular, if the skin is warm or cold, is there cold sweat, what does the client look like, pale face, sleepy or alert, is there a coherent reply, at the same time you can check many things, see if there is a problem in the protocol, if we need more examinations, a more detailed assessment, so in a way ABCDE is so handy and fast to do, it should be done in every situation.” (P2)

“If the client was an older person, special attention was paid to nutrition. One of the emergency care providers described a situation encountered in a client’s home: “then there was the grandma’s malnutrition, her tongue was dry and cracked, protruding bones, I checked the fridge and there was nothing but the light”. (P8)

4.2.3 The client’s mental condition

The interviewees further reported that they paid attention to clients’ mood, psychological state, memory and apparent resources. Suspicion of abuse was often an incidental finding based on client’s hyperventilation, anxiety or fearfulness. Clients’ expressions of guilt or shame had sometimes alerted the emergency care providers to the possibility of abuse in the family. The interviewees paid attention to how the situation was described, trying to “read between the lines”, if they got the impression that the client was not telling everything or tried to hide an essential piece of information. The participants said, for example: *“When you ask yourself why the grandma had a panic disorder, at least the reason was clear, the fear of what the son might think of next” (P1)* and *“Sometimes there are these bachelor sons or daughters who take advantage of the old people, the old people are afraid and feel guilty, they try to hide the situation and protect their child.” (P7)*

4.2.4 The context and circumstances

Assessing the physical context and living circumstances of clients was mentioned as part of the practices established to detect potential abuse. As one participant said, *“All observations, not just the physical and mental issues, but the whole context, comprehensively” (P2)*. Occasionally the clients’ social distress and financial problems were evident. For example, *“The children’s clothes were dirty, wrong-sized clothing, the family had no money. . . .” (P3)*

Signs of alcohol and drug use in the context frequently seemed to make the emergency care providers pay attention to the possibility of abusive behavior. One participant explained how children could be affected:

“Minors, who have used something, having cramps over and again, vomiting until nothing comes out, staggering blood alcohol levels, you start asking yourself if their home circumstances are in order, how can a 12-year-old get into such a situation, where do they get the money for booze, often there is a divorced family background.” (P8)

Other examples given by the participants involved older people living in homes full of alcohol bottles or packages, but seeming sober, although anxious and fearful. For example, *“hundreds of booze bottles in the hallway, but an ordinary grandma in the cottage”* (P4). Self-abuse was also mentioned; some clients neglected their nutritional needs and used their money on alcohol and tobacco. One of the interviewees described a client’s situation, *“didn’t remember to get food, but a half-liter liquor bottle, that was available.”* (P10)

The emergency care providers also mentioned poor temperature regulation in the home as an additional indicator of potential abuse. Some clients lived in too cold or too warm rooms, which according to the interviewees could be attributed to economic hardship or to intentional or unintentional neglect. In summer, lack of ventilation or air conditioning in old houses frequently made the homes too warm, whereas in winter, not being able to pay for the heating or not having the energy to bring in wood for a fireplace resulted in too low temperatures in the home. To quote the participants, *“too cold places, in winter you may freeze even inside”* (p1) and *“a dehydrated old person, exhausted from heat in her own home, no ventilation and the temperature was +32 degrees inside the cottage, she hadn’t had anything to drink for hours”*. (P4) According to one participant, the situation could be *“like a gossamer or sum of many things that lead to abuse, the old person is left alone, nobody cares”* (P1). The interviewees also pointed out that problems could be caused by clients’ memory problems or impaired body temperature regulation. Sometimes the family members did not recognize the problem.

4.2.5 The logic in client reports

According to the emergency care providers, differing and illogical reports from clients and other people present on scene alerted them to suspect abuse. Sometimes the client’s report changed during the interview, or the other persons presented a different version of the incident. As a professional, one needed sound experience, an ability to look at the situation with calmness and concentration, and *“good antennae, trying to figure out something so one could decide what was true and realistic in a situation”*. (P5)

5. DISCUSSION

This qualitative study is based on interviews of 12 emergency care providers from out-of-hospital emergency medical services. The study aimed at exploring what the emergency care providers’ self-defined situational awareness involved in the identification of abuse and what observations had led them to suspect abuse. The concept of situational awareness was not discussed beforehand; the study relied on participants’ self-reported experiences and conceptions of SA. The role of SA in the EMS has been discussed earlier,^[14,35] but not as a skill or competence in the context of abuse identification.

According to the results, SA is based on a combination of cognitive, emotional and social competence. SA is usually defined as a cognitive concept,^[18] but the participants to this study pointed out that the SA required in the identification of abuse was also based on good emotional intelligence and interaction skills. They also repeatedly referred to a “gut feeling” or “intuition” in the identification of abuse that developed through work experience. Similarly, the emergency care provider’s instincts or “gut feeling” was included in the checklist suggested for the identification of abuse in older adults by Cannell,^[29] even though intuition is difficult, if not impossible, to validate. Still, the results may prompt reflection on whether it is useful to conceptualize SA – or active perception, comprehension and prediction - as a merely cognitive process. The study results may at least suggest that the identification of abuse is not merely based on cognitive action.

According to the interviewees, SA meant that in addition to routine patient assessments and interviews, they observed other factors that emerged in the situations or contexts. The perceptions needed to be as objective as possible, combined with logical reasoning and an examination of cause-result relationships. In addition, the participants said that SA included empathy skills, ethical consideration and an ability to consider the overall situation at scene, including the assessment of the atmosphere and family dynamics. The participants’ descriptions of looking at the overall situation were similar to Arfsten’s summary of how in SA, the goal was to gather information through purposeful and active perception and to integrate it into a coherent picture for decision-making or action.^[18] Ethical practice meant that the emergency care providers approached the alleged victims with sensitivity, and exercised special care and discretion in encounters with the suspected abusers. Abusers, too, were seen to be in need of help. The interviewees further indicated that SA developed with work experience. Much of this competence is probably embedded as tacit knowledge.^[15] It may be that experienced emergency care providers examine the situation on scene according to a model based on their previous experiences.

Given that good emotional intelligence and interaction skills are required in the identification of abuse and in bringing up the concern with the client, attention should be paid to these skills in initial and continuing education of emergency care professionals. Sufficient and accurate communication has been found to be essential for both situational awareness and effective team work.^[36] Simulation-based education can be an effective tool in the development of situational awareness, emotional intelligence and decision-making skills, which are all necessary for high quality, safe encounters with abused clients.^[37,38] Still, it must be accepted that newly graduated healthcare professionals may focus most of their attention on routine measurements and interviews, and may miss clues that more experienced colleagues recognize as indicators of abuse.

6. CONCLUSIONS AND IMPLICATIONS FOR PRACTICE AND EDUCATION

According to the study participants, logical reasoning and comprehensive assessment skills, but also empathy and social skills are required in the identification of abuse in the out-of-hospital emergency care setting. Although situational awareness develops with work experience, it is advisable for educators to include a wide range of cognitive, emotional and social skills in the initial and continuing education of emergency care professionals. These skills can be practiced using simulation-based education. The use of multiprofessional learner groups in the simulations can help promote team situational awareness and effective team work.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

REFERENCES

- [1] Norman, RE, Byambaa M, De R, et al. The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-Analysis. *PLoS Med.* 2012. PMID: 23209385. <https://doi.org/10.1371/journal.pmed.1001349>
- [2] Namboodri BL, Rosen T, Dayaa JA, et al. Elder abuse identification in the prehospital setting: an examination of State Emergency Medical Services Protocols. *J Am Geriatr Soc.* 2018; 66(5): 962-968. PMID: 29566428. <https://doi.org/10.1111/jgs.15329>
- [3] Rosen T, Lien C, Stern ME, et al. Emergency medical services perspectives on identifying and reporting victims of elder abuse, neglect, and self-neglect. *J Emerg Med.* 2017; 53(4): 573-582. PMID: 28712685. <https://doi.org/10.1016/j.jemermed.2017.04.021>
- [4] Endsley MR. Measurement of situation awareness in dynamic systems. *Hum Factors.* 1995; 37(1): 65-84. <https://doi.org/10.1518/001872095779049499>
- [5] Hunter J, Porter M, Williams B. Towards a theoretical framework for situational awareness in paramedicine. *Saf Sci.* 2020; 122: 104528. <https://doi.org/10.1016/j.ssci.2019.104528>
- [6] Lowe DJ, Ireland AJ, Ross A, et al. Exploring situational awareness in emergency medicine: developing a shared mental model to enhance training and assessment. *Postgrad Med.* 2016; 92(1093): 653-658. PMID: 27129912. <https://doi.org/10.1136/postgradmedj-2015-133772>
- [7] McGuinness B. Quantitative analysis of situational awareness (QUASA): applying signal detection theory to true/false probes and self-ratings. *Command and Control Research and Technology Symposium.* San Diego; 2004.
- [8] Busby S, Witucki-Brown J. Theory development for situational awareness in multi-casualty incidents. *J Emerg Nurs.* 2011; 37(5): 444-452. PMID: 21889652. <https://doi.org/10.1016/j.jen.2010.07.023>
- [9] Kuusisto R, Kuusisto T, Armistead L. Common operational picture, situation awareness and information operations. *Proceedings of the 4th European Conference on Information Warfare and Security.* Glamorgan: UK; 2005. 175-185 p.
- [10] Rosenman ED, Dixon AJ, Webb JM, et al. A simulation-based approach to measuring team situational awareness in emergency medicine: a multicenter, observational study. *Acad Emerg Med.* 2017; 25(2): 196-204. PMID: 28715105. <https://doi.org/10.1111/acem.13257>
- [11] Tikanmäki I, Ruoslahti H. How are situation picture, situation awareness, and situation understanding discussed in recent scholarly literature? In Bernardino J, Salgado A, Filipe J (Eds.) *Proceedings of the 11th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management.* Setúbal: Science And Technology Publications; 2019. 419-426 p. <https://doi.org/10.5220/0008494104190426>
- [12] Flin R, O'Connor P, Crichton M. *Safety at the sharp end: a guide to non-technical skills.* Aldershot (UK): Ashgate; 2008.
- [13] Lei C, Palm K. *Crisis resource management training in medical simulation.* [Updated 2020 Aug 11]. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2020 Jan.
- [14] Mikkola R, Paavilainen E, Salminen-Tuomaala M, et al. Out-of-hospital emergency care providers' work and challenges in a changing care environment. *Scand J Caring Sci.* 2018; 32: 253-260. PMID: 28524371. <https://doi.org/10.1111/scs.12456>
- [15] Norri-Sederholm T. *Tilanne päällä! Tiedon tarpeesta jaettuun tietoon - Hätäkeskuspäivystäjän ja ensihoidon kenttäjohtajan tilannetietoisuus.* [Dissertation] Publications of the University of Eastern Finland. *Dissertations in Social Sciences and Business Studies No 96;* 2015.
- [16] Hunter J, Porter M, Williams B. What is known about situational awareness in paramedicine? A Scoping Review. *J Allied Health.* 2019; 48(1): e26-e34.
- [17] Norri-Sederholm T, Kuusisto R, Kurola J, et al. A paramedic field supervisor's situational awareness in prehospital emergency care. *Prehosp Disaster Med.* 2014; 29(2): 151-159. PMID: 24588978. <https://doi.org/10.1017/S1049023X14000132>
- [18] Arfsten K. Before, now, and after the event of terror: situational terror awareness for civilians in US Homeland Security. *Eur J Secur Res.* 2020; 5: 223-258. <https://doi.org/10.1007/s41125-019-00054-9>

- [19] Kuusisto T, Kuusisto R, Roehrig W. Situation understanding for operational art in cyber operations". In Abouzakhar N. (ed.) Proceedings of the 14th European Conference on Cyber Warfare and Security ECCWS-2015. Published by Academic Conferences and Publishing International Limited Reading, UK 44-118- 972-4148. Hatfield, UK; 2.-3.7.2015. 169-178 p. Available from: www.academic-publishing.org
- [20] ETENE. Etiikan tila sosiaali- ja terveystalalla. Etene-julkaisuja 35. Valtakunnallinen sosiaali- ja terveystieteiden neuvottelukunta ETENE, Sosiaali- ja terveysministeriö, Helsinki. 2012. Available from: <https://etene.fi/documents/1429646/1559054/ETENE-julkaisuja+35+Etiikan+tila+sosiaali-+ja+terveysalalla.pdf/b02f3efc-c92b-456f-a97a-2a524ef3b2f9/ETENE-julkaisuja+35+Etiikan+tila+sosiaali+ja+terveysalalla.pdf.pdf>
- [21] Decety J, Jackson PL. The functional architecture of human empathy. *Behav Cogn Neurosci Rev.* 2004; 3: 71-100. PMID: 15537986. <https://doi.org/10.1177/1534582304267187>
- [22] Neumann M, Edelhauser F, Tauschel D, et al. Empathy decline and its reasons: a systematic review of studies with medical students and residents. *Acad Med.* 2011; 86: 996-1009. PMID: 21670661. <https://doi.org/10.1097/ACM.0b013e318221e615>
- [23] Ellialty T. Family violence. *Encyclopedia of family studies.* 2015. <https://doi.org/10.1002/9781119085621.wbef382>
- [24] Hornor G. Emotional maltreatment. *J Pediatr Health Care.* 2012; 26(6): 436-442. PMID: 23099310. <https://doi.org/10.1016/j.pedhc.2011.05.004>
- [25] Sloman L, Taylor P. Impact of child maltreatment on attachment and social rank systems: introducing an integrated theory. *TraumaViolence Abuse.* 2016; 17(2): 172-185. PMID: 25948552. <https://doi.org/10.1177/1524838015584354>
- [26] Manthorpe J. The abuse, neglect and mistreatment of older people with dementia in care homes and hospitals in England: the potential for secondary data analysis: innovative practice. *Dementia.* 2015; 14(2): 273. PMID: 24962001. <https://doi.org/10.1177/1471301214541177>
- [27] Seppälä J. Sosiaalisessa hädässä olevan tunnistaminen. In: Alanen P, Jormakka J, Kosonen A, Saikko S. Oireista työdiagnosiin. Ensihoitopotilaan tutkiminen ja arviointi. Helsinki (Finland); 2016. 274-286 p.
- [28] Sipiläinen H. Hoitotyön johtajien käsityksiä vanhusten kaltoinkohtelusta vanhainkodeissa. [Master Thesis]. University of Kuopio (Finland); 2008. 105 p.
- [29] Cannell MB, Jetelina KK, Zavadsky M, et al. Towards the development of a screening tool to enhance the detection of elder abuse and neglect by emergency medical technicians (EMTs): A qualitative study. *BMC Emerg Med.* 2016; 16: 19. PMID: 27250247. <https://doi.org/10.1186/s12873-016-0084-3>
- [30] European Society for Emergency Medicine EUSEM. Guidance for domestic abuse & violence in the ED. [Accessed at 2020.10.02]. Available from: <https://www.eusem.org/news/272-guidance-for-domestic-abuse-violence-in-the-ed>
- [31] Feo R, Kitson A. Promoting patient-centred fundamental care in acute healthcare systems: a discussion paper. *Int J Nurs Stud.* 2016; 57: 1-11. PMID: 27045560. <https://doi.org/10.1016/j.ijnurstu.2016.01.006>
- [32] Kylmä J, Juvakka T. Laadullinen terveystutkimus. Helsinki (Finland): Edita. Prima Oy; 2012.
- [33] Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs.* 2008; 62: 107-115. PMID: 18352969. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- [34] Puusa A, Juuti P. Laadullisen tutkimuksen näkökulmat ja menetelmät. Tallinn (Estonia): Gaudeamus; 2020.
- [35] Heightman A. Situational awareness advice for EMS providers. *JEMS.* 2017; 4(42).
- [36] Parush A, Kramer C, Foster-Hunt T, et al. Communication and team situation awareness in the OR: implications for augmentative information display. *J Biomed Inform.* 2011; 44(3): 477-485. PMID: 20381642. <https://doi.org/10.1016/j.jbi.2010.04.002>
- [37] Schulz CM, Endsley MR, Kochs EF, et al. Situation awareness in anesthesia: concept and research. *Anesthesiology.* 2013; 118(3): 729-742. PMID: 23291626. <https://doi.org/10.1097/ALN.0b013e318280a40f>
- [38] Salminen-Tuomaala M. Developing emotional intelligence and situational awareness through simulation coaching. *Clinical Nursing Studies.* 2020; 8(2): 13-20. <https://doi.org/10.5430/cns.v8n2p13>