

STIMULATING SITUATIONAL AWARENESS IN HEALTHCARE THROUGH THE ARTS: AN INTERPROFESSIONAL AND INTERDISCIPLINARY PERSPECTIVE

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ABSTRACT

Continuous professional development (CPD) of healthcare professionals is essential to consistently meet patient and healthcare needs. Current CPD focuses on profession-specific knowledge and skills. However, changing health requirements of patients and society require CPD to evolve, with a focus on professional adaptive expertise. We developed a training for healthcare professionals to enhance the essential non-profession specific skill of situational awareness. This training crosses professional boundaries by learning in interprofessional teams and through interdisciplinary education with the arts, aiming to stimulate participants' situational awareness. During the pilot, participants observed paintings applying Visual Thinking Strategies, with subsequently transferring their observations to colleagues. To evaluate this new teaching method, participants completed a post-training questionnaire. They reported increased awareness of different perspectives, enhanced attentiveness and improved observational skills. This innovative practice describes the development, implementation and evaluation of the training and closes with a critical reflection

INTRODUCTION

In recent years, healthcare provision has changed from a classic, somewhat paternalistic approach to a more patient- and person-centred one. Patients' needs hold a more significant place in the treatment process, and patients are seen as more proactive participants in their own health (Jo Delaney, 2018). Other important changes include the rapid growth of patients with chronic diseases, but also increased availability of new knowledge and technology, making healthcare more complex and expensive (Frenk et al., 2010). Due to the rapidly changing health needs of patients, healthcare, and society, the lifelong-learning environment in health is also changing, necessitating new forms of continuous professional development (CPD) of healthcare professionals (Mitchell et al., 2023). CPD is part of lifelong learning for healthcare practitioners and implies that they, after their initial training(s), continue to deepen

and develop their knowledge, skills and attitudes (Merry et al., 2023). CPD is progressively required for practitioners to maintain their registration and right to practice healthcare.

In the Netherlands, CPD for healthcare professionals is regulated under the Healthcare Professionals Act (wet BIG) ('BIG-register Legislation'). This act requires periodic re-registration of healthcare professionals and adequate continuing education. Different accreditation organisations, such as the Royal Dutch Medical Association (KNMG) for physicians, the Dutch Professional Nurses Organization (V&VN) for nurses and the Royal Dutch Dental Association (KNMT) for dentists, are responsible for approving and registering CPD activities. Additionally, most professions make use of quality registers, where registration demonstrates that the healthcare professional meets the requirements for CPD. These learning activities are funded in various ways – through employers, the healthcare professionals themselves, professional organizations, government and training funds – making CPD widely accessible through direct investment in training, membership fees, tax deductions and specific grants.

In healthcare, CPD's current emphasis is on developing profession-specific knowledge and skills. However, developing professional competencies that match the current complex needs of patients and society also requires the creation of learning opportunities that bridge professional boundaries, are interactive, focus on competence-based outcomes and go beyond developing medical knowledge and skills (Mitchell et al., 2023; Frenk et al., 2010). For example, consider the impact of the increase in patients with chronic diseases, such as Diabetes Mellitus type 2: a metabolic disease characterized by high blood sugar (glucose), which can cause damage to various organs (Sen & Chakraborty Biplab De, 2016). When treating this disease, attention must be given to lifestyle, medical, social, economic and psychological factors. This complex interaction of factors means that patients' situations can change rapidly. This requires flexibility of healthcare professionals and a holistic approach towards practising healthcare (Nikpour et al., 2022).

To address some of these needs, the authors, consisting of two physicians, two educationalists and one philosopher, developed a new training for healthcare professionals, emphasising crossing professional boundaries and developing essential non-profession specific knowledge and skills. As regards the latter, one of the most important non-technical skills for healthcare professionals is situational awareness (Ghaderi et al., 2023): the process of receiving, interpreting and anticipating information in dynamic complex environments such as healthcare (Graafland & Schijven, 2015). Situational awareness is of major significance in healthcare, as it enables healthcare professionals to have a comprehensive understanding of the patient's clinical situation, including medical, social and environmental factors. As such, situational awareness was chosen as the foundation for our training. To engage in learning across boundaries, the training was given an interprofessional and interdisciplinary character, as detailed in the next paragraph. Subsequently, we will describe the developmental process of the training, following the ADDIE framework (Analysis, Design, Development, Implementation, Evaluation) (Kurt, 2017). In the analysis, we explain the key concepts for the training: situational awareness and adaptive expertise. Using both literature (Fancourt & Finn, 2019; Haidet et al., 2016) and prior experience, we incorporated an interdisciplinary design by collaborating with the arts. The learning goals and activities are elaborated in the development phase. The last phase explores how the training was implemented and evaluated.

INTERPROFESSIONAL AND INTERDISCIPLINARY EDUCATION

Medical education is already changing to meet the current needs of patients and society by embedding interdisciplinary and interprofessional education into the formal medical curriculum (Albert et al., 2015; Taylor et al., 2018; WHO, 2010). Interdisciplinary education

integrates disciplinary knowledge of disciplines not directly related to healthcare (e.g., engineering, law, arts), finding a common 'ground or language.' It teaches students to solve complex discipline-transcending problems by considering these from more than one perspective and integrating knowledge across disciplines. Interdisciplinary education develops interdisciplinary competencies: critical thinking, creativity, reflection and a broader perspective (Angerer et al., 2021). Interprofessional education focuses on integrating knowledge and skills from different healthcare professions (e.g., nursing, physiotherapy). Through interprofessional education, students from two or more separate healthcare programmes learn with, from and about each other to improve collaboration, communication and healthcare provision (WHO, 2010).

This development in medical education, although promising, focuses more on the new generation of healthcare professionals rather than those already working as professionals. Furthermore, our experience shows that medical students encounter challenges in integrating their new interdisciplinary and interprofessional knowledge and skills in the workplace, as the workplace is often still shaped by traditional educational ideas. It is therefore important that CPD also becomes interdisciplinary and interprofessional. Over and above the importance for the healthcare professionals themselves, this type of education is important for the socialisation of medical students: the process of learning the values and beliefs of a professional domain (Biesta & van Braak, 2020).

ANALYSIS

During the analysing phase of the training, we posed the following question to several people who train healthcare professionals: what is of note in the workplace right now? The overarching theme we found was the ability to adapt to unexpected situations. Healthcare professionals must constantly adapt to the evolving health requirements of patients, healthcare and society (Jo Delaney, 2018; Constand et al., 2014). Two examples that emerged during the analysis were: patients are upset with you because a colleague set the wrong expectation and now you have to manage their frustration. Or, you are already taking care of too many patients due to staff shortages and then an additional, very sick patient is admitted to your ward because someone else made that decision.

In order to adapt to unexpected situations, healthcare professionals need adaptive expertise – the ability to find new solutions in response to change and to create and develop the associated new knowledge and skills (Pelgrim et al., 2022; Kua et al., 2021). This type of expertise requires a different way of making decisions. In the domain of healthcare, professionals must continuously make decisions that have important consequences for patients. Routine expertise focuses on the rapid and efficient completion of routine tasks, where decision-making is non-analytical and unconscious, relying on previous experience. In contrast, adaptive expertise requires professionals to switch to more conscious, slower and analytical thinking to respond to unexpected situations (Graafland & Schijven, 2015).

Training adaptive expertise by enhancing situational awareness

After finding this overarching theme, we decided to translate training adaptive expertise into a more practical skill that closely reflects the healthcare professional's real-world experience. Thus, the goal of the training became to enhance the non-technical skill of situational awareness; the ability to observe, interpret and, with that, adequately anticipate situations (Graafland, 2015; Flin et al., 2009). Situational awareness allows healthcare professionals to adequately adapt to changing situations, thereby improving decision-making, patient safety, performance of healthcare professionals and health outcomes (Feller et al., 2023; Ghaderi et al., 2023; Green et al., 2017).

Constantly evolving health requirements are a challenge for decision making. Research shows (Graafland & Schijven, 2015) that even experienced healthcare professionals find it difficult to observe and interpret important information during high-risk procedures. Human judgement is influenced by many emotional, cognitive and social factors. The limited capacity of the human brain's working memory leads to information omission, creating a selective perception based on past experiences and preferences. Consequently, two people may have very different observations of the same reality (Graafland & Schijven, 2015). Stress further complicates observation and interpretation by reducing concentration and problem-solving capacity. In stressful situations, people often rely on routine expertise, making quick decisions based on past experiences. While effective in routine cases, this approach is problematic in non-routine situations, where it is essential to switch to the slower and analytical thinking of adaptive expertise (Pelgrim et al., 2022; Graafland & Schijven, 2015).

Training situational awareness will help professionals recognise non-routine situations and facilitate a shift to analytical thinking. It is suitable for interprofessional team training, as medical care is almost always done in a team. Therefore, it is important that all members of the team have a high level of situational awareness (Weller et al., 2024; Graafland & Schijven, 2015). Currently, situational awareness is not structurally trained in healthcare. Healthcare professionals practice this skill independently in high-risk environments such as operating rooms. Additionally, there is a safety training programme for multidisciplinary teams in emergency care called Crew Resource Management (CRM) (Graafland & Schijven, 2015). With our new training, we aim to train healthcare professionals structurally in situational awareness, to improve team performance, enhance patient safety and ensure that all team members are prepared to handle both routine and non-routine situations effectively, thereby becoming better adaptive experts.

DESIGN

Building upon earlier experiences with interdisciplinary education (e.g., between medical students, healthcare professionals, art students and professionals), we recognised that situational awareness training can be attained through interdisciplinary CPD that incorporates visual arts. Participants became more aware of and open to other perspectives, enhancing their observation and interpretation skills. They accepted more ambiguity, gained more insight into their mental processes and learned to reflect more in the moment, all crucial factors that can assist problem solving and adapting to non-routine situations (Christophe, Jumelet, & Schillings, 2022). Beyond our own experience, much has been written about the use, qualities and learning outcomes of the arts in medical education (Haidet et al., 2016). There is a growing body of research showing that the arts can improve clinical, communication and personal skills in healthcare professionals (Fancourt & Finn, 2019).

The current training is based on the following learning goals: 1) to develop enhanced self-awareness regarding methods of observation and interpretation; 2) to improve observational skills and the transfer of observations to colleagues; 3) to gain more insight in the (disciplinary) perspectives of other professionals; and 4) to apply the training experiences regarding observation, interpretation and anticipating to workplace case studies. These learning goals were not explicitly mentioned during the training.

DEVELOPMENT

The learning activities were developed with an interdisciplinary trainers' team, more specifically, an educationalist, a physician, a visual artist and a physician who has experience with applying the visual arts in her daily practice. This team created three

assignments: 1) observing a painting employing Visual Thinking Strategies (VTS): a method to look at art together in a structured way and to have an open conversation about it (Reilly, Ring, & Duke, 2005); 2) observing a painting and transferring observations; and 3) applying the skills learned to a workplace case study. The first two assignments were devised to achieve learning goals 1-3 and the third assignment for learning goal 4.

With the first assignment, the participants look at a painting through VTS for 30 minutes. A certified VTS discussion leader asks questions that encourage observing without judgement and listening to each other's observations with respect. This method is about searching for meanings together and learning to adjust your opinions (Reilly, Ring, & Duke, 2005). For the second assignment participants form a group of three. A painting is depicted digitally, and the first person in the group observes the painting closely and describes their observations. The second person sits with their back to the painting and tries to draw the first person's observations. The third person observes the whole process. Then, after 15 minutes of describing, observing and drawing, the second person is permitted to turn around to see the actual painting and the difference between what they interpreted from the description. The three participants shortly discuss the assignment within their group: how was it for each one? What stood out? In this way, different interpretations become visible. Next, this evaluation will be transferred to the whole group: how was this assignment for the participants? What did they learn from it? Altogether, the second assignment will take 45 minutes. For the third assignment, a workplace case study is discussed, brought in beforehand from the participants themselves. Participants form groups of up to six people and discuss how they can use what they experienced with the arts in the case study. This assignment takes 30 minutes and concludes with a whole-group discussion of the outcomes of the subgroups.

IMPLEMENTATION

The pilot phase of the training was conducted in November 2023 at the Children's Hospital of the UMC Utrecht, with 44 participants from different healthcare professions: nurses, physicians, team managers, secretarial staff and nursing educators. The training took place during a regular education afternoon. Unfortunately, we had to opt for two assignments instead of three, due to the two-hour timeframe. The training was led by the visual artist and the physician who has experience with applying the visual arts in her daily practice. We chose to carry out assignment 1 and 2 and integrate assignment 3 into these assignments as much as possible, trying to make a connection between the skills learned and the healthcare professionals' workplace. For assignment 1, the group was divided into two. Each group was accompanied by one of the teachers to look closely at a painting in the building. In principle,



Figure 1 - Gabriel Metsu, the sick child, (1664-1666). Oil paint on canvas. Rijksmuseum, Amsterdam (Metsu, 1664).

any painting is suitable for this form of teaching.

For the second assignment, Gabriel Metsu's painting 'the sick child' was chosen, with the idea that this might align with the interest of the participants who take care of sick children every day (Figure 1). After the second assignment, the training ended with an evaluation, where we discussed the learning experiences and tried to connect them to the professionals' daily work.

EVALUATION

At the end of the training the participants were asked to anonymously complete a questionnaire. This consisted of open-ended questions and questions that could be answered using a 5-point Likert scale (1: totally disagree - 5: totally agree). The open-ended questions asked whether this was a useful training, what the participants learned from it and what they will use in their daily work. The Likert scale questions were directed to the learning goals: 1) by practicing observing through looking at a painting, I am more aware of my own way of observing; 2) through this workshop, I think I am better able to transfer my own observations to my colleagues; 3) I will apply the experience gained from this workshop in my current work in the clinic. The evaluation form was a teaching evaluation, so there has not yet been any solid research on the learning outcomes of this training. However, the results may give an indication of how the training was experienced by the participants. Figure 2 summarises the answers to the three statements, showing 50% or more agreed and totally agreed the training helped reaching the learning goals.

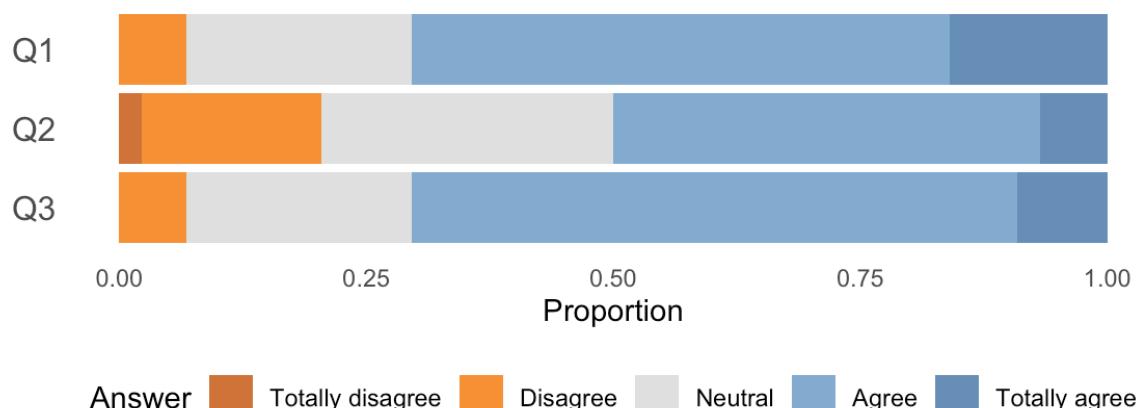


Figure 2 - Answers on obtained learning goals in proportion (N=44).

The open-ended questions show five recurring topics. First, it taught participants the importance of taking a step back sometimes, to stand still to see the bigger picture. The participants realised that this bigger picture disappears during stress. This corresponds well to situational awareness and stress complicating observation and interpretation (Graafland & Schijven, 2015). Second, the training broadened participants' views, and they learned to see things from other perspectives. It made them realise that everyone observes and interprets things differently in the same situation. Third, they learned the importance of asking for help and helping each other. These topics underline the added value of the interprofessional and interdisciplinary nature of the training (Angerer et al., 2021; WHO, 2010). Fourth, participants made some suggestions to improve the workshop. They had expected the training to focus more on workplace case studies, so that there was a better connection with their daily work. Furthermore, they found the group of participants too big and recommended that the area for assignment 1 should be quiet for good concentration and communication. Fifth, for some

participants the training was not useful or only slightly useful, because it added nothing to their daily work.

Participants indicated in the evaluation form that they plan to apply the following skills to their daily work: they intend to take more time to take a step back from situations, observe a situation better by looking more objectively and asking the other person what they see, because together you see more. They plan to not interpret too quickly and to transfer information in more detail, because they learned that the words you say can be interpreted differently by another person. Also, they think they will work with a more open attitude, try to ask for help earlier and to listen better to each other and the patient.

REFLECTION AND CONCLUSION

Overall, we can look back positively on a first pilot of this innovative training. Without explicitly mentioning the learning objectives, these were brought up multiple times in the answers to the open-ended evaluation questions. Participants learned to slow down when a situation calls for it, to become more aware of different perspectives and the importance of helping each other. Also, most of the participants agreed that they had improved their skills in observing and transferring the observed, and they intend to apply the learned experiences in their work.

More solid research is needed to draw conclusions on the effects of this training. We agree with the participants that the group of participants was too big for this type of education. Also, the training should focus more on the workplace by adding assignment 3 into the training. Therefore, a minimum of 2.5 to 3 hours is needed. Slowing down, asking for help or having a more open attitude can, for example, help to deal with an angry patient or managing an overwhelming workload.

For the follow-up, we are exploring where to embed this training in our academic hospital. One of our considerations is to give the training a truly interdisciplinary character by having healthcare professionals learn together with professionals in the visual arts, rather than just using art for the medical profession.

Looking at the professional skills required in rapidly changing healthcare, we consider adaptive expertise and situational awareness important for future healthcare workers. This interprofessional and interdisciplinary training is an important addition to the current disciplinary training offers in CPD for healthcare professionals.

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