



Creating authentic video scenarios for use in prehospital research



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ABSTRACT

Video scenarios have been used to explore clinical reasoning during interviews in Think Aloud studies. This study used nominal group technique with experts to create video scenarios to explore the ways paramedics think and reason when caring for children who are sick or injured. At present there is little research regarding paramedics' clinical reasoning with respect to performing non-urgent procedures on children. A core expert panel identified the central structure of a prehospital clinical interaction and the range of contextual factors that may influence a paramedic's clinical reasoning [the way in which information is gathered, interpreted and analysed by clinicians]. The structure and contextual factors were then incorporated into two filmed scenarios. A second panel of clinical practice experts, then critiqued the body language, spoken word and age appropriate behaviours of those acting in the video scenarios and compared them against their own experience of clinical practice to confirm authenticity. This paper reports and reflects on the use of nominal group technique to create authentic video scenarios for use in prehospital research.

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1. Introduction

Children can become sick or injured at home, school or in a public place which can result in an ambulance being called. Paramedics caring for these children formulate a plan of care which may involve performing a clinical procedure such as blood sampling, wound dressing or the administration of medicines. Clinical procedures can cause children to become upset or distressed [1,2], which may lead them to be un-cooperative and held by a parent against their will so the procedure can be carried out thereby heightening the child's distress. It is not always necessary for paramedics to perform these procedures urgently, indeed many procedures can often be deferred until the child reaches the emergency department. Little is known about how paramedics think or, more precisely, clinically reason in situations that involve non-urgent procedures on children. Clinical reasoning is a complex process using discipline-specific knowledge to gather, analyse and evaluate verbal and non-verbal pieces of information (contextual cues) about a patient and the care setting [3]. The effect contextual factors have on clinical reasoning has previously been explored using video scenarios [4]. This paper will explain the process and research methods used to construct authentic video scenarios that

have been developed for future use as a data collection tool to explore paramedic clinical reasoning.

2. Background

There is little evidence describing what contextual factors influence the clinical reasoning of paramedics around performing non-urgent procedures on children. Clinical reasoning has been defined as a critical skill [5] and an essential feature of healthcare practice [6]. Clinical reasoning is similar to clinical decision-making, but clinical reasoning does not only focus on the end-point of a process, it is interested in the cognitive process itself [3]. By deconstructing and analysing how paramedics perform clinical reasoning about children who require a non-urgent clinical procedure it may be possible to gain a clearer understanding of how paramedics begin to make decisions.

Review of the clinical reasoning literature highlights a number of examples where simulation or scenarios [7] have been used to explore clinical reasoning. High Fidelity simulation has become a popular educational resource that aims to immerse participants in the task under observation in an authentic way "by inducing a sense of being there" [8]. Authentic scenarios and simulations in healthcare are variously described as seeming to be real [8], realistic [9], depicting real life [10] and can be difficult to achieve [11]. Generating simulations can be difficult as the actors may be required to precisely reproduce the same performance numerous

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times and in different locations. This can be especially challenging for simulations involving children, when subtle nuances surrounding the portrayal of contextual factors such as anxiety, distress or mischief can be lost during repeated simulations. An advantage of video scenarios over simulations is that they allow the children and adults to rehearse and repeat their performance so that only those clips that authentically portray the correct range of contextual features are used.

The video scenarios described in this paper were developed for use as a data collection tool to explore paramedic clinical reasoning. In order for these scenarios to be authentic they needed to represent a genuine, true to life portrayal of the real events paramedics are faced with as part of normal clinical practice. The scenarios had to contain ample contextual information and a sufficiently nuanced performance that captured the gestalt of a clinical interaction with children. Only by doing this would the paramedic participants achieve the desirable level of immersion when viewing the scenarios.

This paper will describe one method of creating video scenarios that authentically depict real life pre-hospital clinical interactions with children to facilitate the exploration of paramedic clinical reasoning strategies.

3. Methods

The video scenarios were developed through the use of nominal group technique (NGT). NGT is a time efficient method of achieving the formal consensus of a group through a structured meeting [12]. The NGT process adopted for this study involved three sequential expert panel meetings reaching a consensus on the structure, context and authentic portrayal of clinical interactions with children whom are sick or injured. Participants were sampled and recruited by the researcher from the researcher's own place of employment and were known professionally to the researcher and fully aware of the study.

3.1. Recruitment and sampling of the expert panels

Expert panels have been used across a range of health research disciplines to reach a consensus on a number of issues including the development of data collection tools [13]. Whilst expert panels are used widely within research, few papers specifically describe the recruitment and constitution of their panel. It is suggested that the convened panel have the required expertise and be representative of their profession [14]. In this study, two expert panels (core panel and authenticity panel) were recruited based on the participant's role title and minimum clinical experience criteria. Recruitment of participants to the core expert panel was purposive with inclusion criteria based on the role title of consultant paramedic and a minimum clinical experience in prehospital care of ten years. Recruitment of the authenticity expert panel was similarly purposive with similar inclusion criteria. However, the role title was changed to advanced paramedic. All those fulfilling the criteria for the core expert panel criteria ($n = 4$) and the authenticity panel ($n = 13$) within one ambulance trust were invited by the researcher to participate by email. The e-mail included an information sheet for the specific expert panel to which the participant was invited. The core expert panel recruited four panellists, the authenticity

expert panel recruited five panellists. Members of each expert panel were known to both each other and the researcher.

3.2. Data collection within each of the panel meetings

Data were collected over four months during 2016 at two sites in the North West of England. Both sites had a room allocated to the researcher and participants for the duration of the meetings. The process of NGT used in this study followed the stages of; introducing the task, silent idea generation, sharing ideas, group discussion and voting/ranking [14] facilitated by the researcher. The data collection process and structure of this study is shown in Fig. 1. At the beginning of each NGT session panellists were introduced to NGT, the importance of each stage within the process, an overview of the project and provided with the opportunity to ask questions. Each of the two panels had a different purpose; the core expert panel focussed on defining the structure of a prehospital incident with a child and identifying the contextual factors that may influence that incident, the authenticity panel focussed on reviewing the raw footage of the video scenarios and deciding which of those scenarios appeared to be most authentic to clinical practice.

All expert panel meetings lasted no more than one hour and followed the prescribed format for NGT [14]. During each of the expert panel meetings panellists were given up to five minutes to quietly contemplate their responses (silently generate ideas) and write them down on paper provided by the researcher. Each panellist in turn shared their responses with the rest of the panel. The individual responses were recorded by the researcher on the flip charts so all panellists could review their own and others' responses and this helped to facilitate the group discussion. The panel then spent approximately ten minutes in free group discussion of the accumulated responses attributing their personal values to one response or another. The panel were then asked to decide as a group which of the responses were the most important and assign a numerical ranking to these responses. All meetings of the expert panels were digitally audio recorded with consent of those present and permission was gained for anonymised quotes to be used in papers and presentations. The consent form also covered future use in print and presentation of all collected data. All participants have reviewed this manuscript.

3.3. Core expert panel meetings

The first meeting of the core expert panel asked panellists to focus on their own experiences relating to the dialogue during, stages of and factors which may influence a pre-hospital incident with a child. The panel were asked three questions during the first meeting to explore the structure and contextual factors of a clinical interaction involving a child who was sick or injured (Table 1). Following this first meeting the researcher listened to the audio recording of the meeting and reviewed the flip charts to create two storyboards of a fictitious incident (Fig. 2). These storyboards were used during the second meeting of the core expert panel to help panellists further develop the portrayed incidents. This further development included the addition of possible conversations and describing how the conversations would evolve and be realistically portrayed. Due to the short time between the first and second core expert panel meetings it was not possible to transcribe the

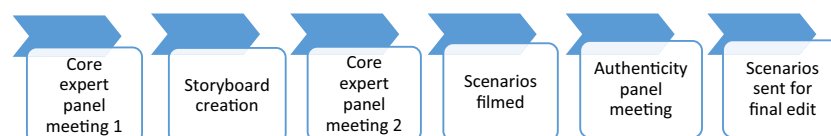


Fig. 1. Data collection process.

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