

INNOVATIVE METHODS OF DOCUMENTING MEMORY EVIDENCE FROM
VICTIM-SURVIVORS OF GENDER-BASED VIOLENCE

– A CASE STUDY IN KENYA

by

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Abstract

This thesis aimed to explore innovative methods of documenting memory evidence from victim-survivors of gender-based violence (GBV), including the use of digital technologies, training non-police first responders (e.g., community actors), and using a behaviourally informed interview technique. Chapter 1 introduces the rationale of this thesis, as well as our collaborator, the Wangu Kanja Foundation (WKF), who co-designed this thesis.

Chapter 2 presents a scoping review synthesising empirical literature on interviewing adult victim-survivors of sexual assault. Overall, 12 research articles met our inclusion criteria which highlights the lack of research in this area and the novelty of this thesis.

Chapter 3 presents a systematic review of digital technologies (GBVxTech) that are used globally to document cases of GBV. The systematic review explored whether these platforms use evidence-based interview principles. GBVxTech platforms use some interview best-practice (e.g., not using leading questions). However, there is still much improvement to be made (e.g., using more open responding methods). Additionally, around half of the platforms we reviewed did not provide security measures (e.g., password protection), placing victim-survivors at substantial risk. We offer recommendations to improve the memory documentation procedure and to promote the safety of the victim-survivor.

Further, Chapter 4 investigates the use of an online documentation tool in obtaining an immediate disclosure from participants, and whether this first recall attempt preserves memory accuracy over time. The online documentation tools we investigated were co-designed with the WKF, including a mobile phone application called SV_Case Study (hereafter referred to as MobApp), and a behaviourally informed version (hereafter MobApp+). Participants with an initial recall attempt (MobApp(+)) had a higher recall accuracy rate after one week, in

comparison to participants with no initial recall attempt. Furthermore, the addition of behaviourally informed questions did not increase the number of incorrect details recalled. These findings are promising for using online documentation tools and behaviourally informed questions when interviewing victim-survivors.

In addition to GBVxTech, victim-survivors are reporting their cases to non-police first responders. Chapter 5 evaluates our innovative interview training programme conducted with non-police first responders to GBV in Kenya. We found that participant's knowledge of interview best-practice increased post-training. Additionally, participants' ability to provide ground rules instructions and utilise rapport-building techniques improved after receiving the training. The training did not increase the number of open questions participants posed. Overall, this is a promising first investigation into training community actors to document initial disclosures of GBV.

Chapter 6 presents the results of a randomised control trial exploring the differences in the number of details recorded using the standard WKF intake form (same questions as MobApp) or a behaviourally informed documentation form. We found that interviewers recorded more information overall from survivors when using the behaviourally informed documentation tool compared to the standard WKF intake form, as well as behaviourally informed details. Additionally, interviewers recorded more details from survivors after receiving our innovative training package. Overall, the combination of interview training and the behaviourally informed documentation form was beneficial in recording more information from survivors that may benefit criminal justice proceedings. Finally, in Chapter 7, we discuss our key findings in the context of the wider literature, provide an overview of the strengths and limitations of the research, as well as implications and recommendations for future research and practice.

For my family

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Authorship Statement

This research was completed by the author (LS) with supervision and support from Professor Heather Flowe (HF) and Dr Melissa Colloff (MC).

Specific authorship contribution to each chapter are as follows:

Chapter 1: Introduction = LS drafted the chapter; HF gave feedback to improve the academic writing and ensure all necessary content was covered. LS finalised the chapter based on this.

Chapter 2: Scoping Review = LS designed the protocol for the review, including the search strategy, chosen databases, and inclusion/exclusion criteria, with feedback from HF. LS completed the search process, with reliability analysis by Madeleine Ingham (MI). LS drafted the chapter with feedback and edits from HF. All authors have reviewed and edited this manuscript for future submission.

Chapter 3: Systematic Review of GBVxTech (Author contribution taken from published paper) = LS: Conceptualisation, Data curation, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing. Tia Bennett (TB): Data curation, Formal analysis, Methodology, Project administration, Visualisation, Writing – review & editing. Jessica Cotton (JC): Conceptualisation, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. Sarah Rockowitz (SR): Conceptualisation, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. HF: Conceptualisation, Data curation, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing.

Chapter 4: Evaluation of MobApp and MobApp+ (Author contribution taken from published paper) = Conceptualisation, LS, HF, Wangu Kanja (WK) and Kari Davies (KD);

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Data within this study were used within the MSc thesis of ER. LS collected additional data to ensure power to answer our research questions, re-coded and re-analysed the data, and re-wrote the manuscript for publication and use within this doctoral thesis.

Chapter 5: Innovative Training Package = LS designed the innovative interviewing training package with feedback and guidance from HF, WK, and SR. LS trained WK to facilitate the training with members of her team in Kenya. LS and HF monitored the training remotely for standardisation. LS, Rachael Walsh (RW), Emily Kuhn (EK), William Cosnett (WC), and Eunhee Kim (EK) conducted data coding and reliability. LS analysed the data with input from Amelia Kohl (AK) and HF. LS drafted the manuscript with input from RW and HF. All authors reviewed and edited the manuscript for submission.

Data within this study were used within the MSc thesis of RW. These data were re-coded and re-analysed by LS for use in this doctoral thesis and the manuscript was rewritten with additional information added by LS for publication.

Chapter 6: Randomised Control Trial = LS, KD, WK, and HF co-designed the behaviourally informed tool. A train-the-trainer approach was used, whereby LS trained WK and members of the WKF to train interviewers for data collection. LS and Alan George (AG) completed data coding and reliability. LS and HF completed data analysis. LS drafted the

manuscript with feedback and guidance from HF, AK, SR and Kirstin Wagner (KW). All authors reviewed and edited the manuscript for submission.

Chapter 7: Discussion = LS drafted the chapter; HF gave feedback to improve the academic writing and ensure all necessary content was covered. LS finalised the chapter based on this.

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Thesis Format

This thesis follows the University of Birmingham's Alternative Thesis Guidelines. This permits students to submit published material within their thesis. Two chapters from this thesis have been published following peer-review (Chapters 3 & 4) and two chapters are currently under review at a peer-reviewed journal (Chapters 5 & 6). The publications references are:

Chapter 3: Stevens, L. M., Bennett, T., Cotton, J., Rockowitz, S., & Flowe, H. D. (2024). GBVxTech: Systematic Review of Gender-Based Violence Reporting Apps in Capturing Memory Evidence. *Frontiers in Psychology – Forensic and Legal Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1289817>

Chapter 4: Stevens, L. M., Reid, E., Kanja, W., Rockowitz, S., Davies, K., Dosanjh, S., Findel, B., & Flowe, H. D. (2022). The Kenyan Survivors of Sexual Violence Network: Preserving Memory Evidence with a Bespoke Mobile Application to Increase Access to Vital Services and Justice. *Societies*, 12, 12. <https://doi.org/10.3390/soc12010012>

Chapter 5: Stevens, L. M., Walsh, R., Kohl, A. T., Kuhn, E., Kanja, W., Rockowitz, S., Cosnett, W., Kim, E., & Flowe, H. D. (under review). Training Non-Police First Responders to use Best-Practice Interviewing Skills when Documenting Cases of Sexual and Gender-Based Violence in Kenya. *Applied Cognitive Psychology*.

Chapter 6: Stevens, L. M., Davies, K., Wagner, K., Kanja, W., George, A., Rockowitz, S., Kohl, A. T., & Flowe, H. D. (under review). A Behaviourally Informed Interview with Survivors of Sexual Violence in Kenya - A Randomised Control Trial. *Law and Human Behaviour*.

In accordance with the Alternative Thesis Guidelines, the published articles are included as PDFs and are therefore not included in the pagination of the thesis. Further, due to the inclusion of published work all chapters are self-contained, including the references, tables, figures and appendices. Due to the alternative nature of this thesis, there may be overlap in content between chapters.

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List of Abbreviations

ABE Achieving Best Evidence

BCL Behavioural Crime Linkage

CI Cognitive Interview

DHS Demographic Health Survey

FCDO Foreign Commonwealth and Development Office

GBV Gender-Based Violence

HRD Human Rights Defender

LMICs Low-and-Middle-Income Countries

MO Modus Operandi

Network Survivors of Sexual Violence in Kenya Network

NGO Non-Governmental Organisation

PRISMA Preferred Reporting Items for Systematic Reviews and Meta-Analysis

Protocol International Protocol on the Documentation and Investigation of Sexual Violence in Conflict

RCT Randomised Control Trial

SGBV Sexual and Gender-Based Violence

VCD Visual Communication Desensitisation

WHO World Health Organization

WKF Wangu Kanja Foundation

CHAPTER 1 INTRODUCTION

This thesis aimed to understand the use of innovative methods of documenting memory evidence from victim-survivors of gender-based violence (GBV). In particular, we explored the use of digital documentation tools, non-police first responders, and behaviourally informed documentation tools to record statements from victim-survivors. To do this, we: 1) reviewed literature on interview methods used with adult victim-survivors of sexual assault; 2) reviewed the current state of digital platforms that document cases of GBV globally; 3) investigated the effectiveness of an online self-reporting tool in obtaining memory evidence that is preserved over time; 4) pioneered and evaluated an interview training package in Kenya with non-police first responders (e.g., community actors); and 5) conducted a randomised control trial in Kenya, to investigate whether a behaviourally informed documentation form obtained more memory details from survivors of sexual violence than currently used documentation techniques.

Within this introductory chapter, we will outline definitions of violence, provide a background of the prevalence of GBV globally, as well as Kenya specifically, highlight the rationale for this research and provide an overview of the aims and chapter structure for the current thesis.

1.1 Definitions of Violence

Types of violence, including GBV, are defined differently throughout the literature (Rockowitz et al., 2023). Therefore, we will provide an overview of the definitions used within this research.

1.1.1 Gender-based violence

GBV is an umbrella term that encapsulates any harmful act perpetrated against an individual or group due to their gender. This encompasses domestic, sexual, psychological, financial, and digital violations, as well as female genital mutilation, human trafficking, and child marriage (United Nations, n.d.). GBV is the key term used within Chapter 3 of this thesis that explores digital methods of documenting GBV cases (hereafter referred to as GBVxTech, World Bank, 2019). GBVxTech platforms are typically created to document any type of violence within the GBV definition. They do not tend to specialise to any one offence type (e.g., sexual violence); as such, the term GBV is applied in this chapter. In Chapters 4 & 5 we extend the umbrella term to sexual and gender-based violence (SGBV), as this is the preferred terminology of our partner organisation. However, the acts of violence they encapsulate are the same.

1.1.2 Sexual violence

Sexual violence is defined by the World Health Organization (WHO) as ‘any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic or otherwise directed against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting’ (WHO, 2021a). This is the key term used within Chapters 4 and 6, as these chapters utilise behavioural crime linkage theory that has been empirically validated with sexual violence cases, but not other forms of violence (e.g., domestic violence).

1.1.3 Sexual assault

Sexual assault is defined as "A person (A) commits an offence if— (a) he intentionally touches another person (B), (b) the touching is sexual, (c) B does not consent to the touching,

and (d) A does not reasonably believe that B consents” (Sexual Offences Act, 2003). This is the key term used within Chapter 2 that reviews the use of different interview methods with adult victim-survivors of sexual assault. Sexual assault is the common legal term used to describe cases of sexual violence (Sexual Offences Act, 2003). Therefore, we applied this term in Chapter 2 when discussing police interview procedure.

1.1.4 Terminology used for the victim-survivor

When discussing individuals who have endured GBV different terms are used, including ‘victim’, ‘survivor’, or some combination of the two, as well as the term ‘complainant’ within the legal context. The word ‘victim’ is frequently used for brevity to encompass all such terms that refer to those who have endured GBV (George & Ferguson, 2021). However, we understand and acknowledge that preferred terminology is a complex issue and is dependent upon context. In the Kenyan context, the term ‘survivor’ is preferred to empower those who have endured violence. Therefore, we use this term in research with our collaborators in Kenya to ensure we are sensitive to the language preferred.

1.2 Prevalence of Violence

GBV is a pertinent issue globally, as a systematic review of research and prevalence surveys found that 1 in 3 women over the age of 15 have experienced some form of intimate partner violence, or non-partner sexual violence at least once in their lifetime (WHO, 2021b). Whilst global statistics on incidence rates against male victims are rare, we know from a nationally representative victimisation survey that 1 in 3 men living in the United States have endured sexual violence, intimate partner violence, or stalking within their lifetime (Smith et al., 2018). These global trends are also seen in the United Kingdom (UK) and Kenya where the current research was conducted. In the UK, victimisation surveys (i.e., Crime Survey for

England and Wales) revealed that approximately 7.9 million adults over the age of 16 have experienced sexual assault (or attempted sexual assault) in their adult lifetime (Office for National Statistics, 2023). In Kenya, national statistics and victimisation surveys found that 38% of adult women (i.e., aged 15+) have endured physical and/or sexual intimate partner violence within their lifetime (OECD, 2023). Additionally, these statistics are likely an underestimation of the true prevalence rate (WHO, 2003), as victims often do not report their experiences. This is due to both the stigma surrounding the crime (Shaibakova, 2020) and the low prosecution rate; whereby fewer than 2% of cases reported to the police in the UK and Kenya respectively received a conviction (Home Office, 2021; Rockowitz et al., 2024). However, victimisation surveys still provide a better estimate of SGBV prevalence than police data due to underreporting to the police in both the UK and Kenya (Office for National Statistics, 2021; Rockowitz et al., 2024). Therefore, as we know that many victim-survivors are not reporting to the authorities, researchers need to consider where memory documentation attempts are being conducted (e.g., online or with community organisations), and how we can improve these innovative methods of documentation to capture detailed and accurate statements.

1.3 Importance of Memory Evidence

In criminal investigations, police officers obtain a statement from a victim by asking them to recall what happened to them (i.e., retrieve information about a specific past event(s)). This statement is imperative for obtaining details regarding the crime, the perpetrator, the crime scene location, and any other forms of corroborating evidence. In cases of sexual violence, the victim's statement during the police interview is the primary, and often only, source of evidence for the case (Kebbell et al., 2007; Lees, 2002; Tetreault, 1989). Especially when the case in question is arguing issues of consent (Rees, 2010) and DNA evidence is not helpful.

Cases are more likely to be prosecuted when an interview is conducted appropriately and high-quality memory evidence is documented (Fisher et al., 1987; Pipe et al., 2013). Thus, it is integral that memory evidence is preserved and protected for use in criminal justice proceedings in GBV cases. Therefore, this thesis investigates the use of innovative interview methods to document this memory evidence efficiently, when victim-survivors are not reporting to the police.

1.4 Current Guidance on Interviewing Victim-Survivors of GBV

There is some interview guidance when documenting memory evidence from vulnerable victims, such as those who have experienced sexual victimisation. These include the Achieving Best Evidence Guidance within the UK (ABE; Ministry of Justice, 2022), the International Protocol on the Documentation and Investigation of Sexual Violence in Conflict (hereafter referred to as the Protocol; Foreign Commonwealth & Development Office (FCDO), 2017), and the Murad Code (2022) for victims in humanitarian contexts (e.g., conflict zones). In what follows, we will outline the key principles of these guidelines.

1.4.1 Achieving Best Evidence Guidance for Interviewing Vulnerable and Intimidated Witnesses (UK)

The ABE includes interview guidance for all vulnerable and intimidated victims and witnesses (e.g., victim-survivors of GBV, Ministry of Justice, 2022). Key interview principles outlined in the ABE guidance to improve memory documentation include 1) rapport building and narrative practice, 2) ground rules administration, and 3) a funnel approach to questioning (i.e., beginning with open questions and following up with specific prompts). Whilst different countries will have their domestic guidance that police will follow when interviewing victim-survivors, it is important to note that victim-survivors frequently do not report to the police.

This is exacerbated even further in humanitarian contexts, such as conflict zones. Therefore, guidance has been constructed for first responders in these humanitarian contexts, such as the Protocol (FCDO, 2017) and the Murad Code (2022).

1.4.2 International Protocol on the Documentation and Investigation of Sexual Violence in Conflict

The Protocol advocates for the same best-practice interview principles as the ABE guidance (Ministry of Justice, 2022). However, the Protocol additionally provides training on the effective documentation and investigation of GBV incidents in conflict zones. This training can be helpful for legal and non-legal actors, including non-governmental organisations (NGO) and human rights defenders who are first responders to incidents. Whilst the Protocol contains core guidance and training on interview practice, they encourage practitioners to adapt the guidance to suit their context and ensure that it is culturally sensitive and fit for purpose. The Protocol has been successfully implemented in Burma, where the protocol was translated into local languages and used by police, governmental officials, and community actors, resulting in the first conviction under the Burma penal code (Independent Commission for Aid Impact, 2020).

1.4.3 Murad Code

The Murad Code (2022), named after Nobel Peace Prize winner Nadia Murad, provides guidance on ethical interviewing principles with victim-survivors of sexual violence. For example, ensuring victim-survivors provide informed consent, always prioritising their privacy and safety, and limiting re-traumatisation (e.g., do not repeatedly interview). In 2014, Nadia Murad, along with many other Yazidi women and girls, was captured and held as a sex slave by ISIS for several months before she managed to escape. She has become a prominent

advocate for victims of sexual violence and human trafficking, particularly in conflict zones. Following this, she helped to coin the Murad Code that covers interview best-practice and human rights principles. Further, survivors provided feedback that was incorporated into the creation of the Code to ensure it spoke to their needs and prioritised their voices.

1.4.4 Implementation and Evaluation of Current Guidance

Whilst it is beneficial that researchers and policymakers are considering guidance for documenting incidents of GBV, there is an overall lack of evaluation for how community actors can embody these principles in the field (Smith et al., 2019). We know that interviewing is an exceptionally hard skill to train, even for police officers in the most ideal contexts (Lamb et al., 2002). For non-police first responders, not only is interviewing a difficult skill to learn, but they can only receive training on the Protocol by travelling to the Hague to receive in-person training, or via online self-training that requires access to technology. These methods may be difficult for all grassroots organisations to obtain. As such, there has been limited evaluation of the Protocol and other international guidelines implementation on the ground. Therefore, the current thesis explored how training and documentation infrastructure can improve the ability of first responders in the field to document incidences of GBV using best practice. Importantly, we focus on providing non-police first responders with the infrastructure to document cases of GBV. Whilst the Protocol offers guidance for both documentation and investigation, many low-and-middle-income countries (LMICs) do not have the capacity to investigate. Therefore, it is integral to document cases efficiently to increase political good will to provide a budget for prioritising the investigation of GBV cases.

1.5 Justification for the Thesis

1.5.1 *Challenges faced by victim-survivors of GBV*

Globally, victim-survivors of GBV face a myriad of challenges when it comes to reporting the experiences they have endured. Firstly, victim-survivors experience immense self-blame and feel that they will not be believed should they disclose, which limits their reporting rates (Campbell et al., 2009). Additionally, of those victim-survivors who do report, their memory evidence is commonly criticised for being inconsistent (Archambault & Lonsway, 2008; Hohl & Conway, 2017); when, hypermnesia and forgetting are typical aspects of memory (Hohl & Conway, 2017).

Additionally, the nature of GBV offences involves variables that impact memory and understanding of its accuracy. Firstly, victim-survivors of sexual violence frequently delay reporting to the police (Read & Connolly, 2007) and face even further delay before trial completion (Waxman, 2019). Therefore, victim-survivors are criticised for having weak memories due to forgetting. Experts in eyewitness memory agree that memory will be most complete and accurate immediately following the incident (Kassin et al., 1989; 2001; Wixted & Ebbesen, 1991). Following this, the ability to recall memory details follows a power function of forgetting (Wixted & Ebbesen, 1991; 1997); whereby the number of details that can be recalled diminishes rapidly before reaching asymptote over time. Memories are at their most vulnerable to forgetting immediately following the encoded event when they have not been consolidated (Wixted, 2004). If a memory is not consolidated or rehearsed it will weaken in memory strength, meaning that individuals will find it difficult to access and recall this memory in the future.

An early initial recall attempt can preserve the amount of detail recalled over time (Ebbesen & Reinick, 1998; Gabbert et al., 2009), as well as the accuracy of the details

recalled (Stevens et al., 2022). Theoretically, the early initial recall attempt allows interviewees to actively retrieve and rehearse the memory details they are recalling (Atkinson & Shiffrin, 1968), in accordance with the multi-store memory model. This rehearsal will assist in consolidating these memory details into the interviewee's long-term memory store, such that they can be retrieved in the future. Therefore, whilst victim-survivors of GBV may delay reporting to the police, they can capture an early initial recall attempt using innovative methods, such as GBVxTech or reporting to non-police first responders. Moreover, it is vital to consider how we can evaluate and improve these alternative reporting methods to capture the most complete and accurate memory reports from victim-survivors.

Secondly, victim-survivors will have their memory evidence criticised if there is a potential that their statement was contaminated. For example, if a victim-survivor has read or heard the experiences of other victim-survivors, there will be doubt as to whether they are recalling what has happened to them, or incorrectly confusing the source of their memories and recalling others experiences as their own/ with their own (Gabbert et al., 2003, for more information see Johnson et al., 1993). Again, an early initial recall attempt before post-event misinformation can aid in inoculating memory against contamination (Gabbert et al., 2012). Therefore, not only are innovative methods of obtaining victim-survivor statements beneficial for preserving against the effects of forgetting, but they could protect against contamination if collected appropriately (e.g., no leading questions).

Finally, due to the victim-survivor's statement being the primary evidence in incidences of GBV (Kebbell et al., 2007), there is rarely any corroborating evidence. Researchers have designed interview techniques that obtain pertinent information with regard to cases of GBV (e.g., Whole Story Approach, Tidmarsh et al., 2012). The Whole Story Approach encourages interviewers to obtain information regarding 1) how the perpetrator groomed the victim-

survivor (e.g., gained access to the victim-survivor), 2) unique signifiers (i.e., specific patterns of behaviours), and 3) points of confirmation with external witnesses (Tidmarsh et al., 2012). These pieces of information are perceived by prosecutors to strengthen the likelihood of conviction (Darwinkel et al., 2014). However, to date, there is no empirical evidence evaluating whether this approach obtains complete and accurate accounts from victim-survivors of GBV. The information that this interview approach obtains is based on principles of behavioural crime linkage (BCL). BCL is the process of using an offender's unique and consistent behaviours (i.e., their modus operandi) to identify serial offenders and link them to their multitude of crimes (Woodhams et al., 2007). BCL has been used to connect serial stranger sexual offenders to their prolific offences (Slater et al., 2015). Therefore, by obtaining information on the unique behaviours of perpetrators, we may strengthen the investigation potential and likelihood of prosecution. However, we need to empirically validate the use of asking questions within interviews that obtain this behavioural information, to assess whether they obtain complete and accurate accounts from victim-survivors.

1.5.2 *The Wangu Kanja Foundation*

The Wangu Kanja Foundation (WKF) is an NGO based in Nairobi, Kenya. The WKF works to promote prevention, protection, and response to sexual violence in all 47 counties of Kenya. The WKF also convenes the Survivors of Sexual Violence in Kenya Network (hereafter the Network). The Network is made up of human rights defenders (HRDs) that have endured GBV themselves. The Network not only amplifies their voices but the voices of all survivors. Members of the Network are trained by the WKF and are well-known and respected within their communities as safe individuals to discuss cases of GBV.

The WKF and the Network work tirelessly to restore dignity to survivors. Furthermore, they assist all survivors (e.g., men, women, and children) in accessing post-rape care and

support services (medical, police, psychological, and safe shelters, for more information see Rockowitz et al., 2024). The Network are commonly first responders who capture the memory evidence of the survivor (i.e., their statement of the incident). To date, the WKF and the Network have documented the most rigorous data set of GBV and post-rape service provision in Kenya (see Ji et al., 2022). Without the WKF and the Network, the following thesis and research would not be possible. They are integral to the co-design and completion of the research. Additionally, working with a survivor-led organisation allows us to be sensitive to the ethical considerations of working with victim-survivors. For example, ensuring we obtain informed consent from all survivors who participate in our research, providing support services to both our participants and interviewers, and promoting a space for survivors to feed into the research. By working with the WKF, we promote survivor-centred research that prioritises their needs.

1.6 Thesis Aims and Structure

1.6.1 Aims

Overall, this thesis is novel as it partners with a survivor-led NGO to consider alternative avenues to reporting outside of the police, as there is a low reporting rate globally. Minimal research has evaluated alternative methods of documenting complete and accurate memory evidence from victim-survivors of GBV. Therefore, this thesis aimed to explore innovative methods of documenting cases of GBV using digital reporting tools, non-police first responders, and behaviourally informed documentation forms.

1.6.2 Thesis structure

In Chapter 1, the overall justification for the research has been presented, in addition to the specific aims and research questions to be addressed. In what follows, the remaining thesis is structured as:

Chapter 2 presents a scoping review that synthesises empirical research on interview methods used with adult victims of sexual assault. In particular, we explore which methods document complete and accurate accounts while avoiding re-traumatisation. This paper is being written up for publication in *Trauma, Violence and Abuse*.

Chapter 3 reviews GBVxTech platforms used globally and evaluates whether they adhere to best-practice interviewing principles. It also offers recommendations to improve the adoption of interview best-practice in a digital format and how to promote user safety within these platforms. This paper was published in *Frontiers in Psychology - Forensic and Legal Psychology*.

Chapter 4 investigates the use of digital reporting tools as an initial interview, and whether this memory evidence is preserved over time in comparison to a control group with no initial interview. This replicates the experience of victims in real life who may not report incidents immediately. We investigated the digital tool used by the WKF, as well as a behaviourally informed digital tool to explore the impact of these additional questions on the memory evidence reported. This paper was published in *Societies*.

Chapter 5 presents an evaluation study of our innovative interviewing training package that equips non-police first responders with skills in interview best-practice. The efficacy of the training package was measured via improvement in both knowledge of interview best-practice

and interviewing skills displayed in a mock interview. This paper is under review at Applied Cognitive Psychology.

Following empirical validation in Chapter 4, Chapter 6 presents a randomised control trial comparing the standard WKF intake form to the behaviourally informed documentation tool we co-designed with the WKF. We investigated whether by asking behaviourally informed questions, we would record more memory details in total from victim-survivors, in addition to more behaviourally relevant details pertinent to an investigation. This paper is under review at Law and Human Behaviour.

Chapter 7 provides an overall discussion of the key findings of this thesis in the context of both GBV research and investigative interviewing research. Additionally, the strengths and limitations of the research are provided, before discussing the implications of this thesis for future research and practice. Finally, we draw a conclusion regarding the aims of this thesis.

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CHAPTER 2 SCOPING REVIEW OF RESEARCH ON POLICE INTERVIEWS WITH ADULT SEXUAL ASSAULT VICTIMS

Chapter 2 is in preparation for publication at the peer-reviewed journal *Trauma, Violence and Abuse* with the following author list: Stevens, L. M., Ingham, M. P., & Flowe, H. D.

There is an overall lack of research evidence on investigative interviewing with victim-survivors of sexual violence in the Global South, yet there are international protocols that advocate for investigative interviewing principles from the Global North to be applied in such humanitarian contexts (Foreign Commonwealth and Development Office, 2017; Murad Code, 2022). For example, these protocols emphasise the need for rapport building, use of open questions, and expectation management (i.e., ground rules) with victims of sexual violence. However, no research has reviewed the use of these interviewing principles with adult victims of sexual assault. Therefore, this thesis began with a synthesis of current literature on interview methods used with adult victims of sexual assault, in particular what interview methods are effective in documenting complete and accurate memory statements. This was to understand the scope of evidence into current interview practice when documenting memory evidence from victims; before the current thesis explores innovative methods of documenting memory statements from victim-survivors of gender-based violence.

We acknowledge that the research reviewed in this scoping review is from largely white, educated, industrialised, rich and democratic (WEIRD) populations and not from the same criminal jurisdiction as Kenya. Therefore, it cannot be directly applied. But due to the complete research gap in this area, we felt an initial exploratory scope was beneficial, though we are not suggesting this directly applies to Kenya or their criminal jurisdiction. From this scoping review, we were able to collaborate with the Wangu Kanja Foundation on how to adapt/ apply this within our case study in the Kenyan context.

Addendum

Whilst the UK definitions of rape and sexual assault are included within the scoping review due to the nature of the journal this publication will be submitted to, we provide here the definitions of rape and sexual assault as outlined in the Kenyan Sexual Offences Act (2006).

Rape is defined as (a) he or she intentionally and unlawfully commits an act which causes penetration with his or her genital organs; (b) the other person does not consent to the penetration; (c) or the consent is obtained by force or by means of threats or intimidation of any kind.

Sexual assault is defined as any person who unlawfully— (a) penetrates the genital organs of another person with— (i) any part of the body of another or that person; or (ii) an object manipulated by another or that person except where such penetration is carried out for proper and professional hygienic or medical purposes; (b) manipulates any part of his or her body or the body of another person so as to cause penetration of the genital organ into or by any part of the other person's body.

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2.1 Abstract

Police interviews are vital in cases of sexual assault. The victim's statement is often the primary source of evidence in these cases. Worldwide, there is limited guidance for the police for interviewing sexual assault victims. The UK's Achieving Best Evidence guidance (Ministry of Justice, 2022), which provides minimum best practice standards for police interviews with vulnerable victims and witnesses, provides the most comprehensive guidance directed at interviewing sexual assault victims. According to this guidance, minimum best practice includes rapport building, setting ground rules, and using open questions. The aim of the present review was to determine the extent to which these techniques have been studied for use specifically in interviewing adult sexual assault victims. Our main objectives were to determine how effective the techniques are with this population and evaluate the strength of the evidence base. We identified 12 relevant studies through a search of research repositories and grey literature searches following the PRISMA framework. In general, the best practice techniques did not improve memory recall accuracy in research with adult victims of sexual assault. However, there was some evidence that empathetic interviewer behaviour and the use of open questions are associated with more detailed accounts and improved victims' perceptions of the interview experience. Much of the research was qualitative, and largely focused on police and prosecutors' perspectives. There is a need for further research on the impact of best practice techniques on memory accuracy, especially research that is rigorous and informed by memory theory. Research that adopts a victim-centred approach is especially crucial to inform best practice.

Keywords. Sexual Assault, Police Interviews, Victim, Memory Evidence, Interview Methods

2.2 A Scoping Review of Research on Police Interviews with Adult Sexual Assault

Victims

Sexual assault¹ remains a pervasive issue with profound impacts worldwide. In the United Kingdom alone, victimisation surveys found that approximately 1.6 million adults disclosed rape² experiences from 2019-2020 (Office for National Statistics, 2021).

Interviewing victims³ is a critical part of the investigative process for gathering details about the crime, perpetrator, and potential evidence. Often, the victim's statement (i.e., their eyewitness memory) is the primary source of evidence regarding the assault (Kebbell et al., 2007; Lees, 2002; Tetreault, 1989). Therefore, it is critically important that police employ empirically supported and trauma-informed interviews that elicit accurate accounts from sexual assault victims.

Globally, there is basic guidance for interviewing sexual assault victims (Foreign Commonwealth & Development Office, 2017; Ministry of Justice, 2022; Murad, 2022). However, much of the research on the interview principles recommended in this guidance has been conducted in the context of child victims (see Lamb et al., 2007). There is a lack of research evidence on how to support memory retrieval from adult sexual assault victims during police interviews (Flowe & Carline, 2021). Memory retrieval is when a victim remembers previously encoded details (The Human Memory, 2023). Memories can be retrieved via recognition and recall; recognition is identifying previously encoded information following a cue (e.g., a photograph), whereas recall is the retrieval of memories without

¹ Sexual assault is defined as " A person (A) commits an offence if— (a) he intentionally touches another person (B), (b) the touching is sexual, (c) B does not consent to the touching, and (d) A does not reasonably believe that B consents (Sexual Offences Act, 2003).

² Rape is legally defined as the intentional penetration of someone's vagina, anus or mouth by a penis without reasonable consent (Sexual Offences Act, 2003).

³ The term "victim" is being broadly used as an umbrella term for brevity, encompassing associated terms such as "survivor" and "complainant" to refer to those who have endured rape or sexual assault (George & Ferguson, 2021). However, we acknowledge that preferred terminology is complex, debated, and contingent on context.

needing a cue (The Human Memory, 2023). Both recognition and recall memory are used when providing memory evidence to the police. However, victims may not report every detail they retrieve from memory during the interview for a variety of reasons. For example, victims may be unwilling to disclose sensitive information (Campbell, Dworkin et al., 2009), or they may be less confident in the accuracy of certain memory details (Koriat & Goldsmith, 1996), and thus, choose not to report the information they hold in memory.

Due to the importance of memory as key evidence in sexual assault cases, there is a critical need to understand the research underpinning interview guidance for adult victims of sexual assault. A recent survey of victims in England and Wales found that victims were negatively impacted by their experiences with the police and the criminal justice system (e.g., worse mental and physical health, Hohl et al., 2023). For example, three out of four victims surveyed stated that their mental health had declined after reporting their case to the police, and half of all respondents would not report to the police again in the future. Therefore, even with guidelines for how to interview victims of sexual assault, victims are frequently dissatisfied with the service (Hohl et al., 2023). This may be because interviewers are not adhering to the interview guidance (Schreiber Compo et al., 2012), or that we need more research evidence to evaluate current guidance and improve victim experiences. To address these problems this scoping review synthesises and evaluates research on interviewing adult sexual assault victims to assess the knowledge base, identify research gaps, and inform policy and practice.

Specialised guidance for interviewing adult sexual assault victims is needed given the challenges that frequently arise in investigating these types of cases. First, sexual assault victims frequently experience self-blame and fear they will be disbelieved, which can impede their disclosures (Campbell, Dworkin et al., 2009). Compounding this, investigators

sometimes use problematic interview techniques that might cause victim disengagement, such as challenging the victim about the accuracy of their memory and the veracity of their account (Antaki et al., 2015). Second, the nature of sexual assault often involves factors that can affect memory encoding and perceptions about its accuracy, including relatively long delays between the crime and when the victim provides statements about the offense, trauma, and alcohol intoxication. Memories may be forgotten owing to delays in victim reporting (Read & Connolly, 2007) and lengthy case adjudication processes (Flowe et al., 2019) that often occur, especially in sexual offences (Waxman, 2019). Further, memories may be incomplete, owing to trauma (Brewin, 2007) or acute alcohol intoxication during the offence (Flowe et al., 2019). As a result, the victim's account often faces heavy scrutiny, potentially necessitating interview guidance that specifically addresses the common challenges that arise in investigating these types of cases. Third, victims may be re-traumatised by recalling details of the offense, causing the victim further psychological distress and increasing the risk of disengagement from criminal justice proceedings (Ahrens, 2006). Addressing these challenges with evidence-based guidance could help investigators gather more accurate information, protect victim wellbeing, and encourage engagement.

To provide a framework for the review, the next section provides a brief overview of key interview approaches frequently cited as the minimum best practice standards for interviewing witnesses and victims (Brubacher et al., 2014; Powell et al., 2005; Read et al., 2009). These minimum standards for interviews include establishing rapport, setting ground rules, and utilising appropriate questioning techniques (e.g., open questions). Centring the analysis around these well-researched topics will enable a focused synthesis of literature on interviews with adult sexual assault victims.

2.2.1 Minimum Best Practice Standards for Interviewing Victims and Witnesses

2.2.1.1 Rapport Building

Rapport building is a social technique utilised by interviewers to make victims and witnesses feel less emotionally stressed in the interview environment and to help them practise for the upcoming interview (Lyon et al., 2014; Risan et al., 2020). Gabbert et al. (2021) mapped the literature on building rapport within information gathering settings and found that rapport building behaviours could be categorised into one of three functions: 1) building a relationship between the interviewer and interviewee, 2) being warm and approachable, and 3) paying attention to the interviewee. Rapport is typically obtained before the substantive information-gathering portion of the interview begins (i.e., during the non-substantive phase of an interview). The non-substantive phase of an interview is the preparatory stage before the victim or witness is questioned and asked to recall the incident; this stage includes practices such as, providing introductions, rapport building, establishing ground rules and narrative practice. Building rapport is especially critical in sexual assault interviews. Victims often experience shame, self-blame, and fear of disbelief (Campbell, Dworkin et al., 2009). This can inhibit their willingness to disclose information.

Rapport building is important because when the interviewee is more relaxed and trusts the interviewer, they may disclose more information than otherwise would be the case (Fisher & Geiselman, 1992; Risan et al., 2020; Vallano & Schreiber Compo, 2015) and provide a more accurate account (Kieckhaefer et al., 2014). Interviewers in the US reported using empathetic speech and small talk to build rapport with their interviewee (Vallano et al., 2015). However, audio recordings of US police interviews show that interviewers engage in both positive (e.g., showing concern) and negative rapport building behaviours (e.g., intimidating the witness; Schreiber Compo et al., 2012). As such it is vital that rapport building is being implemented

appropriately in the field to ensure complete and accurate documentation of statements. This is even more integral when the interview pertains to sensitive content, as the interviewee may be reluctant to disclose (Ahrens, 2006). In the UK, the Achieving Best Evidence (ABE) guidance for interviews with vulnerable victims recommends building rapport through the discussion of a neutral or positive previous experience to create a positive mood (e.g., discussion of hobbies, Ministry of Justice, 2022). This process is referred to as *narrative practice* (Lyon et al., 2014; Roberts et al., 2004; Yi & Lamb, 2018). Whilst the ABE advises the importance of rapport building, it emphasises reducing the non-substantive phase of the interview to prevent victims from becoming overly fatigued or anxious (Ministry of Justice, 2022). If an interviewee does not wish to discuss a neutral event, they should be allowed to progress to the information-gathering portion of the interview.

However, if narrative practice is used, the questions asked should reflect the same interview strategies used within the information-gathering phase (e.g., start with open questions followed by specific follow-up questions). Narrative practice allows interviewees to familiarise themselves with giving detailed elaborate responses during the interview (Ministry of Justice, 2022; Roberts et al., 2014) which is not natural in everyday conversation. Researchers have found that narrative practice increases the accuracy of children's responses within experimental interviews (Yi & Lamb, 2018) and the number of details obtained from child sexual abuse victims within field interviews (Price et al., 2013; Sternberg et al., 1997). However, there is limited theoretical and empirical understanding of the use of narrative practice with adult victims and witnesses. The current review aimed to not only synthesise the efficacy of interview principles used with adult victims of sexual assault, but to also review the theories and methods applied in this research. From this we can enhance our limited

knowledge of the mechanisms underpinning this guidance and understand how reliable these principles are or how effectively they may be applied in real-life interviews.

2.2.1.2 Ground Rules

A police interview is an unusual task for most individuals, as the experience of disclosing sensitive information may potentially feel embarrassing; therefore, it is crucial to establish expectations within an interview (Powell et al., 2005). Ground rules provide instructions on how interviewees should report their memory details to enhance accuracy (Fessinger et al., 2021; Scoboria & Fisico, 2013). Ground rules may be especially important in sexual assault cases (see Flowe et al., 2019; Read & Connolly, 2007). Victims often face intense scrutiny by the interviewer and others about the accuracy and veracity of their account (Antaki et al., 2015). They may also be traumatised and have been alcohol intoxicated during the assault (Flowe et al., 2019). Further, substantial numbers of victims delay reporting to the authorities (Read & Connolly, 2007). As a result, sexual assault victims compared to other victims may need greater memory retrieval support. To address these challenges in sexual assault cases, commonly used ground rules amongst guidance are particularly pertinent and include: 1) “I don’t know”/ “I don’t understand”, 2) “correct me”, and 3) “you can take a break or terminate the interview at any time”.

The “I don’t know”/ “I don’t understand” rule promotes accuracy in memory reporting, as it instructs the interviewee to report their memories in as much detail as possible (Fisher & Geiselman, 1992; Gabbert et al., 2009) but without guessing (Scoboria & Fisico, 2013). Therefore, the interviewee must monitor what they can remember to report details that are likely to be correct (Koriat & Goldsmith, 1996). The strategic memorial process theory (Koriat & Goldsmith, 1996) proposes that when asked to freely recall memories, individuals set a threshold for the level of detail and confidence required before reporting information, to

maintain accuracy and avoid guessing. This is particularly relevant in the context of sexual assault interviews, where victims may struggle with fragmented or unclear memories due to trauma, alcohol intoxication, or delayed reporting (Flowe et al., 2019; Read & Connolly, 2007). Victims may choose to withhold details they are unsure about to avoid providing inaccurate information, leading to omissions. Interview techniques that encourage victims to report information they clearly remember, while reassuring them that it is acceptable to respond "I don't know" when they are unable to answer a question, can help elicit more complete accounts while still maintaining accuracy.

It is important to keep in mind that using ground rules, such as the "I don't know" rule can lead to decreases in errors of commission (i.e., recalling incorrect information) in favour of increasing errors of omission (i.e., withholding information that might be correct) (Hutcheson et al., 1995). Errors of commission may waste police time and resources on incorrect lines of enquiry, while errors of omission may inhibit the progress of an investigation as vital details may be withheld. As such, ground rules consider the trade-off between completeness and accuracy, by asking witnesses to report everything but not to guess (Fisher & Geiselman, 1992).

The 'correct me' rule prompts the interviewee to correct any inaccuracies in the interviewer's understanding. This avoids inconsistencies that could later undermine the interviewee's credibility and case (Hohl & Conway, 2017). Further, the interviewee should be told that they can request or be offered breaks at any point to reduce their stress and promote productive interview disclosures (Ministry of Justice, 2022). However, whilst ground rules instructions and expectation management are recommended when interviewing vulnerable victims, it is infrequently achieved. In one of the only field studies to investigate police interviewers' behaviours, Schreiber Compo et al. (2012) found that only 4% of interviews

stated expectations (e.g., the interviewee is an active participant in the interview), and only 1% of interviews stated the “I don’t know” rule (Schreiber Compo et al., 2012). This leaves much to be desired for improving the use of ground rules administration within interviews to obtain detailed and accurate accounts.

The current research on the use of ground rules instructions during interviews emphasises their effectiveness in eliciting accurate reports from interviewees (Fessinger et al., 2021; Scoboria & Fisico, 2013). Nevertheless, it is not clear what impact ground rules instructions have during interviews with adult sexual assault victims. Therefore, the current review is imperative to explore whether such interview approaches obtain accurate accounts in this context.

2.2.1.3 Questioning Strategies

Following the non-substantive phase of an interview, interviewers should ask an open question (e.g., “Tell me what happened?” (Lamb et al., 2018)) to obtain a free recall account without interviewer influence (Powell, 2002). Using open-ended questions is especially important in sexual assault interviews, as they allow victims to provide their account in their own words, without the influence of interviewer bias or assumptions (Powell, 2002). This can be particularly valuable in cases where victims' experiences may not fit stereotypical narratives of sexual assault, or where they may have faced blame or disbelief from others (see Sleath & Woodhams, 2014).

Research consistently finds benefits of open-ended questions in eliciting complete and accurate accounts in comparison to closed-ended option-posing prompts (e.g., “A prompt that focuses the child's attention on aspects or details not previously mentioned, requiring confirmation, negation, or selection of an interviewer-given option” Lamb et al., 2007, p. 1206), or suggestive (e.g., “An utterance that assumes information not disclosed by the child

or implies that a particular response is expected” Lamb et al., 2007, p. 1206) questioning methods (Oxburgh et al., 2010; Westera et al., 2011). When the interviewee is providing their statement, interviewers are advised not to interrupt (Ministry of Justice, 2022). Interrupting the interviewee mid-recall diminishes their ability to recall in their own words. Additionally, interrupting reduces their active participation in the interview and may limit the amount of detail the victim would have otherwise provided (Fisher & Geiselman, 1992).

After the interviewee has provided an exhaustive free recall account, the interviewer may elicit further details pertinent to the investigation through specific follow-on questions (i.e., further open-ended invitations or who/what/when/where questions, Ministry of Justice, 2022). Interviewers are advised to avoid forced-choice closed questions (i.e., questions that limit the victim’s response to yes/no or one of a fixed number of options provided), as forced-choice questions limit the amount of detail a victim will provide (Lyon, 2014). Recall accuracy is increased in response to the free recall phase in comparison to the specific follow-up questioning phase (Dando et al., 2011; Ingham et al., under review; Roberts & Higham, 2002). Participants also reported higher confidence for details reported in the free recall phase than the specific questions phase (Roberts & Higham, 2002), in line with strategic memorial process theory (Koriat & Goldsmith, 1996). When prompted for additional information during the questioning phase, interviewees seem to lower their reporting criterion threshold to comply with the interviewer’s request for further information (Memon & Higham, 1999). As a result, more details are reported at the cost of accuracy during the specific question phase (Ingham et al., under review.). Therefore, caution should be taken when asking follow up questions after exhausting a free recall account.

Additionally, all interview guidance prohibits the use of suggestive questions that introduce new undisclosed information to an interviewee or imply the response the

interviewee should provide (Henderson et al., 2019a). Suggestive questions are detrimental as they can lead the interviewee to contradict themselves (Andrews et al., 2015) or adopt the interviewer's bias (Lyon, 2014), therefore reducing the accuracy of the interviewee's statements.

Whilst guidance recommends the use of open questions in interviews, followed by specific follow-on questions, in practice most questions asked are closed-ended (Snook & Keating, 2011) or yes/no prompts (Schreiber Compo et al., 2012). Additionally, whilst research suggests the use of open-ended questions and avoidance of suggestive prompts (Henderson et al., 2019a); it remains unclear how effective these strategies are when employed during interviews with adult sexual assault victims. A comprehensive literature review is needed to determine which questioning approaches yield the most complete and accurate accounts from this vulnerable population, and to identify areas where interviewer training and practice may need improvement.

2.2.1.4 Alternative Interview Methods

There are specialist interview methods, such as the Cognitive Interview (CI; Fisher & Geiselman, 1992) and the Structured Interview protocol (Lamb et al., 2018), that have been developed to help investigators obtain complete and accurate statements. The CI uses the techniques described above, with the addition of mnemonics (e.g., mental context reinstatement) that are based on cognitive theory (e.g., context-dependent recall theory, see Tulving & Thomson, 1973) to enhance recall completeness and accuracy (Fisher & Geiselman, 1992). The CI documents more detailed and accurate disclosures compared to standard police interview practices in a laboratory context (see Memon et al., 2010 for a review). Additionally, the CI documents more information than other interview methods in the field (Standard Police Interview & Structured Interview, Colomb et al., 2013).

The Structured Interview protocol is based on the NICHD procedure for interviewing children (Lamb et al., 2007; Orbach et al., 2000). It was developed based on research demonstrating that police interviewers around the world find it difficult to construct open-ended questions (Sternberg et al., 2001). As such, the protocol was designed to give example scripts to facilitate the use of open questions (Orbach et al., 2000). Researchers have found that when using the Structured Interview protocol, interviewers use more open questions and fewer option-posing and suggestive prompts (see Lamb et al., 2007 for a review).

Furthermore, whilst specialist interview methods have been constructed to facilitate recall from interviewees, limited research has evaluated their effectiveness in eliciting complete and accurate recall from adult victims of sexual assault. As such, the current review synthesises literature on the use of different interview methods (e.g., CI & Structured Interview) and techniques (e.g., rapport building, ground rules, open questions), as to whether they document complete and accurate recall from victims of sexual assault. Additionally, we critique the theoretical underpinnings and methodological designs that have been used to draw conclusions within this literature to consider future recommendations.

While the CI and Structured Interview protocols have shown promise in facilitating victim and witness recall, their effectiveness with adult sexual assault victims specifically needs evaluation. The unique challenges and dynamics of sexual assault cases, such as the impact of trauma on memory and the sensitive nature of the offense, may require refinements to ensure interview techniques are appropriate and effective. A synthesis of the research in this regard will shed light on which approaches are most successful in eliciting detailed and accurate disclosures while, at the very least, avoiding re-traumatising the victim in the process.

2.2.2 Limiting Re-Traumatisation within Interviews

Current guidance on interviewing victims of sexual assault seeks to obtain detailed and accurate accounts from victims whilst limiting re-traumatisation (Ministry of Justice, 2022). The ABE guidance outlines special measures, which are provisions that the UK Court can grant to vulnerable and intimidated interviewees to enable them to provide their most complete and accurate memory reports (Ministry of Justice, 2022). The utilisation of video-recorded police interviews as the primary evidence-in-chief is an example of a special measure. It is aimed at minimising the re-traumatisation of victims and witnesses by limiting the number of times they must be interviewed. Additionally, victims and witnesses may have their cross examinations recorded and played at trial. Pre-recordings may result in more reliable and accurate memory evidence since the interview takes place relatively soon after the crime, rather than months or years later when the case is brought to the courtroom (Henderson & Lamb, 2017). Furthermore, the use of pre-recorded cross examinations has been found to reduce the number of suggestive questions asked of child victims (Henderson et al., 2019a) and the linguistic complexity of the questions asked (Henderson et al., 2019b; Stevens et al., 2021). This will in turn increase the ability of vulnerable victims and witnesses to provide their strongest memory evidence.

2.2.3 Current Study

It is crucial to examine whether and how the minimum best practice interview techniques delineated above have been investigated in the context of sexual assault. The unique challenges faced by sexual assault victims, such as shame, stigma, and disbelief from others, as well as considering the factors that commonly co-occur with sexual offenses and can affect remembering (e.g., victim alcohol intoxication; trauma), necessitate directly testing these

techniques to ensure their effectiveness and appropriateness for interviewing sexual assault victims. Therefore, the present study aimed to synthesise the empirical research literature on police interviews with adult sexual assault victims. The results of the review can inform recommendations for adapting and enhancing current interviewing guidelines to better meet the needs of adult sexual assault victims. Further, the review aimed to identify gaps in the existing literature and promising theoretical frameworks that can be used to enhance interview procedure effectiveness. We hope the results of the review can guide future research efforts, and ultimately, improve the experiences of sexual assault victims in the criminal justice system.

2.3 Methods

2.3.1 Scoping Review

This review drew on the methods outlined by Arksey and O'Malley (2005) and Levac et al. (2010) to conduct the scoping review, using these five-steps: 1) identify the research question, 2) search for relevant literature, 3) select studies, 4) chart the data, and 5) summarise and report the results.

2.3.2 Research Questions and Current Study Purpose

Initially, the aim was to synthesise the current literature (experimental, qualitative, and grey literature) on memory for sexual assault. Subsequent literature searches using our search terms outlined below yielded a substantial number of results (over 18,000). We yielded such high search results as there are a high number of studies researching memory for sexual assault, particularly regarding child sexual abuse victims who were not the focus of the current review. Further, our search terms returned studies that were not deemed

relevant for the current scoping review aim. For example, the search term ‘rape’ yielded results for ‘rapeseed’ and ‘oilseed rape’. Therefore, when considering Levac et al.’s (2010) recommendation to review the feasibility of the scoping review, we narrowed down our review using inclusion and exclusion criteria (see study selection), to focus on the main research aim of:

- Synthesising the current literature on which interview methods are effective in gathering complete and accurate accounts from adult sexual assault victims while avoiding re-traumatisation

With the following sub-questions:

1. What research methods have been used to study which interview approaches are effective in gathering complete and accurate accounts from adult victims of sexual assault while avoiding re-traumatisation?
2. What theoretical frameworks have been applied to understand which interview approaches are effective in supporting memory retrieval from adult victims of sexual assault while avoiding re-traumatisation?

2.3.3 Search Strategy

The search strategy for the current review drew upon the databases SCOPUS, Web of Science, PUBMED and PsycINFO, as well as grey literature searches on the Internet to find any policies or reports on the documentation of sexual assault memory evidence from criminal justice agencies or non-governmental organisations. Our review used title, abstract, and keyword searches for the following search terms:

Rape OR sexual assault OR sexual violence OR sexual abuse AND Memory

We established parameters to filter our search results to only full texts written in English. We did not set any parameters for year published to access all search results irrespective of the era. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) diagram was used to document record totals within each step of the search and review process (Page et al., 2021).

2.3.4 Study Selection

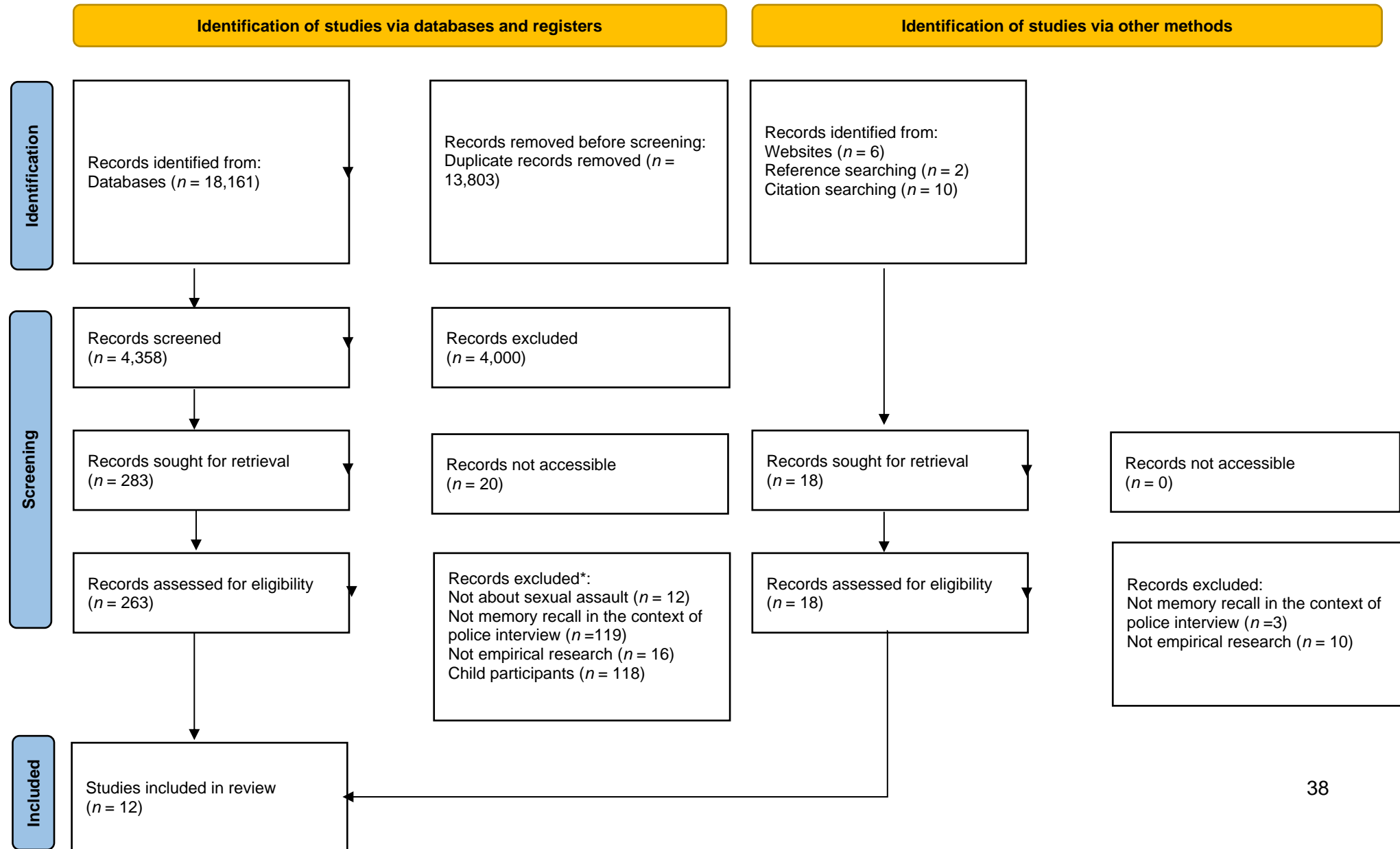
All 18,161 search results from our selected databases were uploaded into Rayyan QCRI (Ouzzani et al., 2016), via EndNote. Rayyan is a systematic review web application that allows collaborators to set inclusion and exclusion criteria to filter search results and reliability check one another. Following the removal of duplicates in Rayyan, we were left with 4,364 search results. As previously mentioned, this was a large number of search results that were not all relevant to the current scoping review. Therefore the authors used an iterative approach described by Arksey and O'Malley (2005), to develop the following inclusion criteria: a) focused on adult participants; b) investigated memory recall in the context of police interviews; c) involved participants either as sexual assault victims and/or present a depiction of sexual assault as the to-be-remembered event; and d) reported original empirical research or review such studies. Additionally, the following exclusion criteria were set to remove results outside the scope of the current review, wherein the study was removed if it: a) discussed non-human participants (e.g., plants, animals); b) discussed participants who were not classed as victims (e.g., perpetrator, expert witness, jury decision, or bystander); c) exclusively focused on the mental health of the victim; d) discussed a treatment or intervention for victim of sexual assault; and e) measured brain anatomy or function of victims.

Two of the authors (LMS and MI) screened the titles and abstracts of the search results according to the inclusion and exclusion criteria. The remaining references were then read in full to decide if they met the inclusion criteria. After the search results were screened in full, the reference and citation list of included studies were searched to locate any relevant studies our search may have omitted. Six studies were added to the final set of studies following these searches (see Figure 1 for the PRISMA diagram).

2.3.5 Data Charting

After the literature database was collated, all texts were read and synthesised to extract important information, which was input into Microsoft Excel 2021. For each source, the following information was charted: author, year of publication, type of publication, country, study design, study aim, key findings, and the conclusion of the study (Arksey & O'Malley, 2005).

Figure 1. Preferred Reporting and Identification for Systematic reviews and Meta-Analyses diagram.



** Some studies were excluded for multiple reasons.*

Adapted from: Page et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71> For more information, visit: <http://www.prisma-statement.org/>

2.4 Results

2.4.1 Study Characteristics

Our final set of studies consisted of 12 journal articles published between 2011 and 2021 (see Table 1 for study characteristics). No studies were identified from grey literature that met our criteria. Whilst no time limit was placed upon the search, over half of our included studies were conducted post-2017 ($n = 9$), following the #MeToo movement (Me Too Movement, 2023). Almost all the research included was from Western countries ($n = 11$). This may be a result of our selection criteria being limited to studies written in English. Of the 12 studies reviewed, most utilised qualitative or mixed methods approaches ($n = 9$; see Table 1 for research methods breakdown), with only one study (Flowe et al., 2019) using an experimental approach.

2.4.2 Key Findings

2.4.2.1 Minimum Best Practice Interview Standards

A total of 11 out of 12 studies examined principles aligned with minimum standards for conducting interviews in the context of sexual assault. These studies examined rapport-building techniques, the use of narrative practice, the administration of ground rules, and/or questioning strategies.

Police Interviewer's Rapport Building Behaviour including Narrative Practice. Six

studies examined how rapport-building behaviours during the interview affect disclosure (see Table 1 for study characteristics). Webster et al. (2021) analysed 25 police interview transcripts from adult rape victims from one undisclosed police force within the UK. All cases had been closed, with only six cases resulting in the offender being charged. Webster et al. (2021) investigated the relationships between interviewer attentiveness, the number of appropriate questions asked by the interviewer (i.e., information gathering open and wh-questions), and the amount of investigation-relevant information obtained from the victim (i.e., the type of offence, the perpetrator, the time and location of the offence, and the items used within the offence (Milne & Bull, 2006)). Interviewer attentiveness was defined as the use of rapport-building behaviours and empathy skills (e.g., verbally expressing understanding of the victim's difficult circumstance or non-verbal actions, such as providing a box of tissues). Interviewer attentiveness did not affect the number of appropriate questions asked, or the amount of investigation-relevant information obtained. However, they did not measure the victim's behaviour. This is problematic as the amount of information obtained from a victim will likely be qualified by their cooperation. Additionally, the authors acknowledge that the limited number of transcripts from one police force limits the generalisability of their findings, thus they should be interpreted with caution.

Kim et al. (2020) investigated the association between interviewer rapport building, victim cooperation, and the amount of relevant information obtained from the victim. They analysed 86 police interviews from alleged victims of sexual assault in South Korea, where all cases resulted in a conviction. All police interviewers had been trained in evidence-based interviewing and worked within sex crime investigation units across multiple police forces. There was a positive correlation between interviewer maladaptive behaviours (e.g., being

judgemental and unfriendly) and victim maladaptive behaviours (e.g., reluctance). In these cases, there was a reduction in information obtained from the victim compared to if both the victim and the interviewer displayed adaptive behaviours (e.g., respectful and trusting). However, there was not always a positive correlation between victim and interviewer adaptive behaviours, as some victims were reluctant to disclose even when the interviewer was respectful and supportive. This may be due to the sensitivity of the information being discussed. However, when the interviewer displayed adaptive behaviours of empathy and victims were co-operative, a greater number of details were obtained.

The differences in findings across these studies may be due to differences in how they operationalised rapport building, but also in the research strategies employed. For example, Kim et al. (2020) analysed a relatively larger sample of 86 cases in South Korea, in comparison to Webster et al. (2021) who analysed a smaller sample of 25 cases from England. Therefore, Kim et al. (2020) may have had more statistical power to observe the impact of rapport building on victim disclosure amount. Additionally, all the cases analysed by Kim et al. (2020) resulted in a conviction. Comparatively, only six cases analysed by Webster et al. (2021) resulted in the offender being charged, with the decision of the case being unknown. It is possible that using cases with more favourable outcomes may have influenced the differences in results between studies.

Table 1. *Study Characteristics*

Author's names and publication year	Country	Number and type of participants	Methodology	Outcome measured
Ali, et al. (2019)	Australia	Eight stakeholders with experience in adult sexual assault cases	Focus group discussion	Stakeholder perceptions of interview elements (e.g., rapport-building, ground rules)
Ali et al. (2020)	Australia & Canada	130 community volunteers	Lab experiment with follow up qualitative questions - Stimuli = video of an implied sexual assault	Memory accuracy, appropriate response to ground rules challenge questions (e.g., don't know) and participants' perceptions of ground rules
Brubacher et al. (2020)	Australia	62 community volunteers	Lab experiment with follow up qualitative questions	Number of correct and incorrect details recalled about the video stimulus, number of central details recalled, number of repeated

			<ul style="list-style-type: none"> - Stimuli = video of an implied sexual assault 	details recalled, and participants perspectives on narrative practice
Flowe et al. (2019)	England	80 undergraduate students	Lab experiment <ul style="list-style-type: none"> - Stimuli = hypothetical rape scenario 	Number of correct details recalled, number of incorrect details recalled, post-event information recalled, confabulations, accuracy rate and memory completeness (total number of details recalled/ total details within stimulus)
Kim et al. (2020)	South Korea	86 investigative interviews with alleged sexual assault victims	Archival data analysis	Global motivational interviewing strategy, interviewer's interpersonal behaviours, victim interpersonal behaviours and the amount of relevant information disclosed by the victim
Lorenz & Maskaly (2018)	United States	231 sexual assault investigators	Self-report survey	Adherence to procedural justice training techniques, receipt of training, perceived helpfulness of training, and investigators perceptions of victims

Patterson (2011)	United States	20 female rape victims	Individual interviews	Victim perceptions of interviewers questioning strategies and behaviours and their influence on disclosure rates
Webster & Oxburgh (2022)	England & Wales	Five female sexual assault victims	Individual interviews	Victim perceptions of police interviews and what parts of the interview process victims' thought were effective (or non-effective) in making the victims want to cooperate with the interviewer
Webster et al. (2021)	England	25 police interviews with alleged sexual assault victims	Archival data analysis	Number and type of questions used, interviewer empathy and rapport, and amount of investigation relevant information obtained
Westera et al. (2011)	New Zealand	136 police officers involved in sexual assault investigations	Lab experiment with follow up qualitative questions - Stimuli = written transcripts and case	Participant perceptions of complainant's accuracy, credibility, and likelihood of prosecution, and perceptions of using video recorded evidence at trial

			background of a mock rape case	
Westera et al. (2013)	New Zealand	30 prosecuting lawyers that work on adult sexual assault cases	Lab experiment with follow up qualitative questions - Stimuli = written transcripts and case background of a mock rape case	Prosecutor perceptions of complainant's accuracy, credibility, and likelihood of offender's guilt and perceptions of using video recorded evidence at trial
Westera et al. (2017)	New Zealand	Ten Crown prosecutors	Focus group discussion and individual interviews	Prosecutor perceptions of the use of police interviews as evidence at trial

Furthermore, the benefit of empathetic interviewer behaviours may be mediated by the value interviewers place in such principles and their attitudes towards victims. Lorenz and Maskaly (2018) surveyed 231 sexual assault investigators in the US. They found that investigators who valued the procedural justice training they had received (i.e., treating victims in a positive manner, such as with respect and empathy) reported they were more likely to employ these methods in interviews, in comparison to investigators who had either not received the procedural justice training or those who did receive it but did not find it helpful. This relationship was partially mediated by interviewers' perceptions of the victims. Investigators positive perceptions of victims (e.g., believing victims are truthful) mediated the relationship between investigators perceived value of procedural justice training and their reported use of empathy in practice. Investigators with more negative perceptions of victims (e.g., victims give inaccurate descriptions) reported they were less likely to employ procedural justice interviewing in their practice. Thus, the authors conclude that more training needs to promote positive perceptions of victims and to encourage interviewers to use procedural justice skills within their interviews. Additionally, they recommend addressing negative assumptions of victims to maximise training benefits. This increase in training and positive perceptions of victims may affect victim experiences and the likelihood that victims will disclose, increasing the completeness of the disclosure.

Overall, police interviewers' rapport building behaviours may influence victims' disclosure, but more research is required to replicate these initial preliminary findings. Additionally, as the current research reviewed includes surveys and archival data analysis, we are unable to evaluate the impact of rapport building on memory accuracy. One experiment investigated whether the use of a narrative practice session improved the number of correct details recalled about an implied sexual assault (Brubacher et al., 2020). Participants ($N = 62$)

from Australia watched a video depicting an implied sexual assault and were randomly assigned to be interviewed with a narrative practice session or without a narrative practice session. Those in the narrative practice session discussed a recent pleasant event that was unrelated to the experiment. Participants who received a narrative practice session did not recall more correct details than participants who did not receive a narrative practice session. Additionally, they surveyed participant's experiences of narrative practice, whereby half reported that it was unhelpful. They stated it was distracting and they wanted to begin their interview, or that they felt uncomfortable discussing a personal topic with an interviewer.

However, one-third of participants reported that the narrative practice session was helpful. They stated that it allowed them to build rapport with their interviewer and become accustomed to the environment before beginning their interview. Thus, it might be that interviewers need to consider the specific victim they are interviewing when deciding whether to conduct a narrative practice. For example, the authors conclude that narrative practice should be used when the victim "needs time to settle" but not if they are "prepared to talk" (Brubacher et al., 2020, p. 819). Nevertheless, this conclusion may be premature, as the researchers do not explore whether participants perception of narrative practice impacted the number of correct details they could recall. For example, we cannot ascertain that negative perceptions of narrative practice are related to poorer memory retrieval and vice versa.

Additionally, the authors note that participants likely did not experience emotional responses similar to that of real victims. Brubacher et al. (2020) suggest that a victim of sexual assault may benefit from narrative practice as it allows them time to become accustomed to the interviewer and interview environment before sharing personal information. Thus, the effect of narrative practice on both participants' experiences and memory retrieval may differ between their experiment and real-life interviews. When

interviewing rape victims regarding their experiences with the police, Patterson (2011) found that victims reported positive experiences when investigators began the interview using rapport-building strategies. The victims reported that this engagement in rapport building made them feel calm and safe during the interview, which helped them to disclose what they had endured. Therefore, we should exercise caution when applying conclusions from experimental work on the impact of narrative practice and rapport on memory retrieval to real life interviews.

Ground Rules. Four studies discussed the use of ground rules during interviews with sexual assault victims. Ali et al. (2019) conducted a focus group with eight Australian criminal justice stakeholders who had experience with adult sexual assault cases. Stakeholders included: three police officers, one prosecutor, two victim representatives, and two academics. Stakeholders had two main concerns regarding current interview guidelines. First, stakeholders thought that instructing the victim not to guess puts undue pressure on the victim to be absolutely accurate. The victim may withhold potentially crucial information in response to this instruction because they are concerned about information accuracy. Stakeholders recommended that interviewers instead ask the victim about their confidence level for each piece of information provided. Second, stakeholders felt that instructing the victim to ‘report everything’ may undermine the victim's credibility if the victim experiences hypermnesia, which refers to recalling information that was not remembered on an earlier occasion. Stakeholders felt that a jury member may not have adequate knowledge of memory retrieval principles or understand that hypermnesia is not an indicator that the victim’s memory is unreliable.

Ali et al. (2020) was the only study identified that investigated whether ground rules instructions and practising the use of a ground rule increases recall accuracy in comparison to

not receiving ground rules instructions. Community volunteers from Australia and Canada ($N = 130$) witnessed a video depicting an implied sexual assault. They were then randomly assigned to an interview condition where they either did not receive ground rules (control), received ground rules instructions or received ground rules instructions and practiced using them. They hypothesised that adults who received ground rules would have increased memory accuracy in comparison to the control group. Theoretically, this may be the case due to encouraging interviewees to strategically monitor the quality of their memories and not provide incorrect responses (i.e., provide an “I don’t know” response in place of guessing; Koriat & Goldsmith, 1996). Due to limited previous research regarding adults practicing ground rules during an interview, there was no theoretical or empirical grounding for a directional hypothesis. Thus, the impact of practice was exploratory. However, their findings do not align with their hypotheses, as the administration of ground rules did not improve recall accuracy. Further, allowing participants to practice the ground rules also did not lead to more accurate recall. Instead, all participants were highly accurate ($>89\%$). This finding may have been due to ceiling effects in memory recall accuracy; thus, it is difficult to draw conclusions about the impact of ground rules on memory performance.

Additionally, Ali et al. (2020) explored whether participants in the two ground rules conditions would be more likely to use these ground rules responses to answer questions designed to challenge them and encourage the application of a ground rule. For example, participants were asked “When did the client make the appointment?”, when they could not know the answer to this question and should respond “I don’t know”. Participants responses to challenge questions were analysed separately to general accuracy reported above.

Participants who practiced using ground rules were significantly more likely to use ground rule responses, such as “don’t know”, “don’t understand” or “correct me” in response to

recognition prompts (e.g., forced choice and yes/no option posing prompts). Ali et al. (2020) concluded that learning the ground rules enhanced people's ability to monitor their memory capabilities. Further, participants are less likely to need ground rules to maintain accuracy within recall, as they can monitor their memories and withhold information that they are uncertain of. In contrast, when answering recognition prompts participants may be more inclined to implement ground rules to maintain accuracy, as they cannot simply withhold details during a forced-choice question like they can with recall.

Perceptions of the usefulness of ground rules within an investigative interview were explored qualitatively with participants in the ground rules conditions. Almost all participants (94%) thought that ground rules would be useful with adult victims/witnesses. Four key themes reflecting what participants believed to be the advantages of ground rules emerged from the qualitative data: 1) reduce the need for impression management, 2) better manage witnesses' emotions, 3) familiarise witnesses with the interview process, and 4) discourage witnesses from filling in gaps in memory (Ali et al., 2020, p. 672-673). Overall, ground rules may be beneficial to manage expectations and provide a supportive environment that encourages interviewees to disclose accurate information about the assault. However, as these are preliminary findings further research is needed to replicate this evidence.

Questioning Strategies. Researchers have examined the impact of different questioning strategies on the amount and accuracy of information obtained during interviews. Patterson (2011) interviewed 20 rape victims who had been questioned by police detectives in the same county within the Midwest United States. While generalisability is limited to this one county, there were 19 police departments that handled the participants cases within this county. Further, no differences were found between departments in their handling of participants' cases. All participants were actively engaged in the investigation process and had received a

forensic medical exam. In the majority of cases, participants were questioned by detectives after their medical exam.

More positive experiences of interviewers' questioning strategies were reported by victims whose cases were prosecuted ($n = 9$) or non-prosecuted stranger rape cases where the perpetrator was never apprehended ($n = 2$). This is in comparison to victims who knew their offender, but their cases were not prosecuted for rape ($n = 9$). Victims with positive experiences remembered detectives questioning them at a gentle pace, believing them, allowing them to recall without interruption or urgency, and encouraging them to take breaks if they felt distressed. They also reported that detectives used open-ended questions such as "tell more" in comparison to forcing responses through closed questions. Victims with positive experiences felt they were more able to disclose information during their interviews than victims with negative experiences. In cases with known offenders that did not receive a prosecution, participants reported that detectives were forceful and relentless in their questioning, they began questioning immediately without building rapport, and they asked questions about the victim's credibility rather than the case. As victims were engaged with the process, it is unlikely that police behaviours were resulting from a lack of victim engagement. Additionally, victims reported that they likely would have disclosed more information had they felt more comfortable with the interview (e.g., through rapport building and gentle questioning).

Nevertheless, these results are based on self-report data, which are subjective and depend on the victim's ability to accurately remember their experiences. Webster et al. (2021) found similar results when analysing police interview transcripts ($N = 25$) from rape cases in the UK. The transcripts contained more investigation-relevant information when the victim was asked appropriate questions (e.g., open) than in response to inappropriate questions (e.g.,

closed, and leading). Overall, the research reviewed suggests that appropriate questioning strategies are beneficial for eliciting more information within real-life interviews and improving victims reported experiences of disclosing. However, future experimental research is needed to substantiate these preliminary findings. Experimental research can control for ground truth to evaluate the effect of open questions on the accuracy of participants' memory reports in the context of sexual assault.

2.4.2.2 Interview Methods

Three studies tested remembering in the context of sexual assault using specialised interview approaches, including the CI (Fisher & Geiselman, 1992), and the Self-Administered Interview (Gabbert et al., 2009).

Cognitive Interview. Three studies explored the use of the CI using sexual assault stimuli. Flowe et al. (2019) interviewed 80 female participants about a hypothetical rape scenario using either the CI or the Self-Administered Interview (a paper and pen adaptation of the CI; Gabbert et al., 2009). Flowe et al. (2019) manipulated alcohol intoxication (whether participants drank alcohol prior to the rape paradigm to BrAC = .06% or did not consume alcohol) and alcohol expectancy (whether participants expected to consume alcohol or not prior to the rape paradigm). Recall accuracy and completeness was not affected by alcohol intoxication, but completeness was lower for women who expected to consume alcohol as opposed to tonic. Overall, participants irrespective of alcohol intoxication, were able to provide detailed and accurate recall when interviewed using the CI or the Self-Administered Interview. When comparing participants' recall between interview methods, participants interviewed with the CI recalled a greater number of details (correct and incorrect) compared to those interviewed with the Self-Administered

Interview. Moreover, all participants were highly accurate (over 80%) in recalling the sexual assault using minimum standards of interview best practice.

Westera et al. (2011) compared police perceptions of different interview methods for interviewing victims of sexual assault. Overall, 136 police officers from New Zealand volunteered to participate in their study via an email link sent to specialist interviewers, police investigators, and supervisors with experience in adult sexual assault cases. They showed participants case details and mock interview transcripts regarding an acquaintance rape case, where the alleged victim states it was non-consensual with no corroborating evidence and the perpetrator states it was consensual. Participants were randomised to one of three different interview methods: 1) a standard interview using suggestive and inappropriate closed questions, 2) a structured interview using an open free recall prompt to initiate disclosure and appropriate follow-up prompts, and 3) a CI, which comprised of the structured interview plus CI mnemonics, including report everything, context reinstatement, and focused retrieval. The victim's account was the same across all three conditions, the only difference was the interview format. Police officers favoured the CI for interviewing victims of sexual assault, but they regarded the structured interview as 'acceptable'. Additionally, police officers reported they would be significantly less likely to recommend charging an offender based on the standard interview transcript that uses inappropriate questioning strategies (e.g., closed and leading questions). Westera et al. (2011) state that this is likely due to officers understanding the negative impact of suggestive questions on memory accuracy, therefore the memory evidence is less credible and less likely to receive a conviction. The link between interview quality and charging decisions highlights how interview methods can directly impact case progression and adjudication.

In subsequent research, the perspectives of ten Crown Prosecutors in New Zealand were examined, specifically with respect to video-recorded police interviews conducted using the CI (Westera et al., 2017). Prosecutors either attended a focus group or an individual interview depending on their preference. Overall, prosecutors did not consider the CI useful for juries at trial. The reporting instructions (e.g., asking victims to concentrate and report every detail) were seen as excessive, potentially trivialising the discussion of sensitive topics, and being cognitively taxing for victims. The prosecutors opined that the complexity could lead victims to disengage, which might affect jury perceptions of the victim's credibility.

Prosecutors also criticised the CI for encouraging victims to disclose information freely and without interruption, as it often leads to non-chronological accounts that are hard for a jury to follow. Additionally, prosecutors expressed concern about the gathering of excessive irrelevant detail. While the CI aims for exhaustive accounts, prosecutors suggested that focusing primarily on evidentiary details would better serve the needs of a jury, rather than an extended interview probing for peripheral information. The prosecutors argued that this hunt for additional information could lead to fatigue in both the victim and jurors, offering little benefit to investigations and prosecutions. In their view, a simpler structured interview could more efficiently obtain the necessary details for an investigation, avoiding the extensive instructions and mnemonics associated with the CI. However, these perceptions have not been investigated within an experiment. Therefore, we cannot substantiate that a simplified interview would obtain a complete and accurate account from a victim of sexual assault that would be credible in the eyes of a jury, in comparison to the structured interview or the CI.

2.4.2.3 Pre-Recorded Evidence

Three studies considered how pre-recording a victim's statement could improve the completeness and accuracy of the memory evidence provided (Westera et al., 2011; 2013; 2017). Pre-recording evidence is using the video recordings of a victim's police interview as their evidence-in-chief at trial (Criminal Justice System, 2007). Westera et al. (2011) gathered questionnaire data from 136 police officers from New Zealand. Overall, over 80% of participants had received interview training and officers had on average 17 years of experience with the service, ranging from 6-34 years in total. Westera et al. (2011) used open questions to explore the officers' perceptions regarding the advantages and disadvantages of using video recorded evidence during sexual assault investigations and trials, in comparison to submitting a written statement. Police officers perceived video-recorded evidence positively as it could capture the victim's account verbatim, as well as non-verbal behaviours that written accounts neglect. Additionally, it ensures that it is the victim's account being put forward at trial and not the officer's interpretation and summary of the victim's account. Police officers commented that using pre-recorded evidence at trial will benefit the victim, as it reduced repeated questioning. Thus, this limits a victim's potential re-traumatisation when repeatedly telling their account and reduces the length of time victims are involved in criminal justice proceedings. Theoretically, the admission of video-recorded evidence at trial is beneficial as the statement was documented closer to the crime, therefore, negating the impacts of forgetting over time. However, officers did note some shortcomings in the use of video recorded evidence. For example, it is resource intensive and potentially damaging to a victim's credibility or likeability depending upon how juries perceived their character presentation in the video.

Following the police perception study, Westera et al. (2013) repeated this procedure with 30 prosecutors to gain their opinions regarding video-recorded evidence. Prosecutors

believed that using video recordings as evidence-in-chief would increase the accuracy and completeness of a victim's recall. They largely attributed this to a victim feeling more comfortable disclosing to a trained officer than at trial. However, prosecutors also reported that police interviews are overly long and complex, eliciting unnecessary levels of details from victims that may mentally burden a jury (Westera et al., 2017). Prosecutors also noted that the use of video evidence is resource intensive and will not benefit a victim if interviews are conducted poorly (Westera et al., 2013). Nevertheless, overall, both police and prosecutors deemed video evidence to be useful for both investigation and prosecution purposes (Westera et al., 2011; 2013; 2017), as it documents a complete and accurate account close to the crime. Additionally, both police officers and prosecutors discussed that using video-recorded evidence at trial may be less traumatic for a victim than being cross-examined and having to relive the experiences at court.

2.4.2.4 Methodological Design

Of the 12 studies reviewed, most studies ($n = 9$) utilised qualitative or mixed methods approaches, (see Table 1 for research methods breakdown). The qualitative studies interviewed practitioners, victims, or participants about their perspectives on and experiences with various interview techniques. Only one study reviewed used a completely experimental approach to investigate participants memory reporting accuracy and completeness (Flowe et al., 2019), with the final two studies conducting archival data analyses on police interview transcripts. As for the studies that were able to measure victim memory recall accuracy, participants were correct over 80% of the time (Ali et al., 2020; Flowe et al., 2019). This suggests that participants who experience sexual assault can provide accurate accounts when interviewers employ minimum best practice techniques.

While the qualitative and mixed methods studies provide insights into stakeholder views and victim experiences, they do not directly assess a victims' ability to recall assault details accurately and completely within an interview context. Further, these studies drew on retrospective self-reports, which are potentially subjective and inaccurate. Additionally, though police and prosecutors infer certain approaches are less traumatising (Westera et al., 2011; 2013), research with victims themselves is essential to study re-traumatisation.

2.4.2.5 Theoretical Perspectives

Over half of the studies reviewed included no discussion of theoretical frameworks that underpin memory reporting for sexual assault. Only four studies directly incorporated theoretical explanations of memory (Ali et al., 2020; Flowe et al., 2019; Westera et al., 2011; 2013). Theories discussed included the strategic memorial process theory (Koriat & Goldsmith, 1996), memory contamination (Loftus & Palmer, 1974), source monitoring theory (Johnson et al., 1993), and theories of forgetting (Ebbinghaus, 1885). Both Ali et al. (2020) and Flowe et al. (2019) discuss how participants may set a criterion threshold to ensure details they report are likely to be accurate (i.e., strategic memorial process theory; Koriat & Goldsmith, 1996). Flowe et al. (2019) use strategic memorial process theory to explain why participants who expected to consume alcohol reported fewer details. Participants likely set a more conservative criterion threshold, whereby they reported fewer memory details overall (i.e., provide less complete accounts) to preserve accuracy. This may be because they are aware of the detrimental impact of alcohol upon their memory. Ali et al. (2020), hypothesised that participants who receive ground rules instructions set a more conservative recall threshold to preserve accuracy. However, they found that hearing the ground rules instruction alone was not sufficient without practice to influence participant's use of ground rules. Additionally, ground rules instructions and practice were only effective when answering

recognition prompts. Therefore, participants may have only adjusted their criterion threshold in response to recognition and not recall questions.

In surveys with police officers and prosecutors, Westera and colleagues found that pre-recordings were favourable for obtaining accurate memory recall in comparison to in person direct-examinations (Westera et al., 2011; 2013). This was because the memory evidence was obtained closer to the incident itself. Therefore, the memory evidence obtained from the sexual assault victim will be the most complete and accurate account, as less details will have been forgotten (Baddeley et al., 2009).

Furthermore, there is less opportunity for memory contamination if memories are recalled as close to the event as possible (Gabbert et al., 2003; 2012). Memory contamination can occur when individuals have multiple memories regarding the same event (e.g., their own memory and a news article). Therefore, they cannot differentiate the source of their memories from other memory sources to report their own experiences of the event (i.e., source monitoring theory of contamination; Johnson et al., 1993). Flowe et al. (2019) found that misinformation reporting was positively correlated with retention interval length, but only among participants who were sober during encoding. Participants who consumed alcohol may have set a stricter criterion threshold to offset the detrimental effect of alcohol. The weaker misinformed memories may not have surpassed the threshold to be reported. This poses interesting applications for real life where victims are frequently intoxicated (Government Equalities Office, 2010), as they may have accurate memory performance even following delays (Flowe et al., 2019). Therefore, they should not be discounted as unreliable eyewitnesses.

2.5 Discussion

This scoping review synthesised the available literature on what interview methods are effective for gathering complete and accurate accounts from adult victims of sexual assault, as well as what research methodologies and theoretical perspectives are used within this literature. While research is limited in this area, this review found that rapport building techniques, ground rules administration with practice, appropriate questioning strategies and specialised interview approaches appear to show promise for facilitating memory recall for sexual assault.

The studies reviewed utilised a range of methods to investigate memory performance, as well as police, prosecutors, and victims' perspectives of interview approaches. However, with only one purely experimental design and four mixed methods studies it is difficult to evaluate the impact of interview methods on memory performance. Theoretical frameworks including the strategic memorial process theory (Koriat & Goldsmith, 1996), memory contamination (Loftus & Palmer, 1974), source monitoring theory (Johnson et al., 1993), and theories of forgetting (Ebbinghaus, 1885) were drawn on to explain memory retrieval during police interviews, however thorough consideration of the implications of such theory was rare.

In the sections that follow, each key finding, and its implications will be discussed in greater depth, highlighting important areas for future research and considerations for practice when interviewing sexual assault victims.

2.5.1 Interview Principles

2.5.1.1 Rapport Building

Currently, there are conflicted findings within the literature reviewed about whether rapport building (e.g., empathy) results in more complete memory accounts from sexual

assault victims (Kim et al., 2020; Webster et al., 2021). This contrasts to literature on interviewees more generally which advocates for the use of rapport building techniques to obtain more complete disclosures from victims (Fisher & Geiselman, 1992; Risan et al., 2020) and more accurate accounts (Kieckhafer et al., 2014). This difference may be accounted for by victims' willingness to disclose. The sensitive nature of sexual assault may mean that even following the use of rapport building techniques, victims may not feel comfortable to disclose (Kim et al., 2020). However, when interviewing victims themselves about their experiences with police interviews, they report that displays of empathy encouraged them to disclose (Patterson, 2011). In comparison, feeling isolated and disbelieved when being questioned by unyielding police interviewers limited levels of disclosure (Patterson, 2011). It is also important to manage a victim's re-traumatisation within the process to encourage them to continue with criminal justice proceedings. Thus, even if interviewer rapport behaviours do not increase memory disclosure or recall accuracy, they may be pivotal in victim experience.

2.5.1.2 Narrative Practice

This review found that narrative practice did not improve adults' recall accuracy, and some participants reported it was distracting (Brubacher et al., 2020). This supports current ABE guidance to shorten the non-substantive phase should a victim wish to begin their disclosure (Ministry of Justice, 2022). However, this contrasts with research findings in children (Price et al., 2013; Sternberg et al., 1997) and as this is only one study, future research is needed to replicate these findings.

2.5.1.3 Ground Rules

The current review found no impact of ground rules or practicing a ground rule on participants recall accuracy in the context of sexual assault stimuli (Ali et al., 2020).

However, future research needs to replicate this. Furthermore, all participants were able to use

ground rules to preserve accuracy in response to recognition prompts (Ali et al., 2020). Therefore, ground rules may aid interviewees memory accuracy for specific follow-up questions, as they can answer “don’t know”. Ground rules instructions may inhibit participants from lowering their criterion threshold, which may prevent the reporting of weaker or inaccurate details (Ingham et al., under review.; Roberts & Higham, 2002).

Additionally, participants perceived the ground rules instructions to be beneficial at setting expectations for the interview (Ali et al., 2020), whereas stakeholders were apprehensive of how ground rules may affect victim credibility (Ali et al., 2019). Future research should consider victims perceptions of ground rules instructions within interviews and consider training stakeholders on a) the benefits of ground rules to documenting complete and accurate memory evidence, and b) that recalling incorrect details and hypermnesia are normal aspects of memory (Nahleen et al., 2021), and are not an indication that the witness is unreliable or inaccurate (Hohl & Conway, 2017).

Interviewers should encourage victims to respond with "I don't know" when they are unsure or unable to provide specific details in response to questions. This approach allows victims to provide an account based on their stronger, more reliable memories (Koriat & Goldsmith, 1996). By not pressuring victims to fill in gaps or report details about which they are uncertain are accurate, investigators can gather information that is more likely to be accurate while minimising the risk of re-traumatisation. It is crucial for interviewers to understand that memory gaps are common, especially when memory is weakened by the passage of time, trauma, or acute alcohol intoxication during the incident (Flowe et al., 2019; Read & Connolly, 2007). Pressuring victims to recall more than they are comfortable with can lead them to report weaker, potentially inaccurate memories (Ingham et al., under review). Moreover, this pressure can exacerbate the trauma experienced by victims, as some may find

their inability to remember certain aspects of the assault distressing (see Hett et al., 2022). By creating a supportive environment that allows victims to report strong memories, interviewers can prioritise the well-being of the victim while still gathering the most accurate information possible.

2.5.1.4 Appropriate Questions

The current review found that victims provided more complete (Webster et al., 2021) and accurate accounts (Flowe et al., 2019) when questioned appropriately (e.g., using open questions) in comparison to inappropriately (e.g., using closed and leading questions). This is in line with previous research demonstrating that participants responses are detailed and accurate in response to open questions (Dando et al., 2011; Roberts & Higham, 2002). Additionally, victims reported more positive experiences when questioned appropriately (Patterson, 2011). Therefore, the current evidence reviewed suggests that individuals can be detailed and accurate when questioned appropriately and this benefits both victims' experiences (Patterson, 2011) and police officers' likelihood of case progression (Westera et al., 2011).

However, all conclusions drawn regarding the effectiveness of specific interview principles within the current review should be interpreted with caution due to the preliminary nature of the research. Future research is needed to establish clearer patterns and replicate results.

2.5.2 Specialised Interview Techniques

Many studies have researched the use of the CI and have found it to be successful at documenting detailed and accurate disclosures (Colomb et al., 2013; Flowe et al., 2019; see Memon et al., 2010 for a review). Therefore, it is unsurprising that this was rated an effective method to obtain evidence from victims of sexual assault by police and prosecutors (Westera

et al., 2011, 2013). However, they did not experimentally investigate the impact of the CI (or the Self-Administered Interview) on memory performance for sexual assault. Therefore, whilst Flowe et al. (2019) found that the CI and Self-Administered Interview documented highly accurate accounts of sexual assault stimuli, future research is needed to replicate this. Additionally, whilst Westera et al. (2011; 2013) explored police' and prosecutors' perceptions of the CI, future research should gather victims' perceptions. For example, research should explore victims' experiences and perceptions of the CI mnemonic techniques to ensure they are not re-traumatising victims as they strive for complete memory retrieval.

Moreover, it is interesting to consider other trauma-informed interview methods, such as the visual communication desensitisation (VCD) method (Castelfranc-Allen & Hope, 2018). This procedure was developed using memory theory and therapeutic techniques that mitigate the psychological effects of trauma, such as PTSD symptoms (e.g., intrusive thoughts). The VCD consists of two stages, 1) a narrative graph and 2) a therapeutic component based on systematic desensitisation. The narrative graph instructs victims to recall a traumatic incident chronologically (along the x-axis) whilst providing a subjective self-report of their distress level (along the y-axis). Participants are instructed to begin and end their recall at a less stressful point, but otherwise, they are free to recall independently or pause or stop at any time. Following the narrative graph, traumatised individuals would then group the stressful event(s) into segments and use systematic desensitisation principles to reduce the stress using relaxation techniques.

Participants have comparable recall accuracy when reporting using the VCD method, in comparison to a free recall approach when recalling stimuli depicting verbal abuse by an ex-partner within an experiment (Castelfranc-Allen & Hope, 2018). The procedure balances the need for accurate evidence gathering with the start of a therapeutic journey for the individual.

The researchers noted that the VCD method requires empirical validation in a comprehensive field study involving service users. The narrative graph enables interviewers to be more sensitive in their questioning by using the graph as a visual guide to the interviewees stress level. For instance, the interviewer could avoid probing a stressful area unless it is crucial to do so. Overall, there are interesting future avenues of research for interview methods to obtain complete and accurate memory accounts from victims of sexual assault.

2.5.3 Research Methods

Only two studies used experimental approaches to establish ground truth and measure accuracy (Ali et al., 2020; Flowe et al., 2019). Therefore, we cannot review whether different interview principles and methods improve memory performance to offer recommendations. Additionally, the experimental or mixed methods studies do not generalise to real victims' experiences and trauma responses. It is important for future studies to use more immersive approaches to increase psychological realism (Abbey & Wegner, 2015; Flowe et al., 2007). Interactive stimuli may provoke visceral emotions and a sense of personal control or responsibility that could better elicit realistic trauma responses and strengthen study validity and practical applications. Further, apart from one study (Flowe et al., 2019), experiments did not directly compare accuracy across interview techniques. Ultimately, a mix of qualitative, experimental, and field research is needed to assess victims' experiences alongside their memory performance. This multi-method triangulation would strengthen conclusions and recommendations.

2.5.4 Theoretical Perspectives

The results of the review indicate there is substantial opportunity to advance research on sexual assault interviews through robust, victim-centred theoretical frameworks. Only four

studies directly drew on memory theory (Ali et al., 2020; Flowe et al., 2019; Westera et al., 2011; 2013), including the strategic memorial process theory (Koriat & Goldsmith, 1996), memory contamination (Loftus & Palmer, 1974), source monitoring theory (Johnson et al., 1993) and theories of forgetting (Ebbinghaus, 1885). Broadening the theoretical grounding to include more cognitive, social, and trauma-informed perspectives would provide a better foundation for understanding memory reporting processes during police interviews. Future work should consider how integrating theories of memory, interpersonal dynamics, and trauma responses could enrich interview protocols. Deeper theoretical foundations could strengthen the evidence-base for developing guidance on interview approaches that support accurate remembering that avoid re-traumatisation.

2.5.5 Strengths and Limitations

Sexual assault is a pervasive issue globally, with the victim's statement being the primary evidence in the case (Kebbell et al., 2007). Therefore, it is imperative to understand what interview methods are effective in obtaining complete and accurate accounts from victims that can benefit investigation. Yet, to date interviewing research focuses on interviewees in general or on child victims of sexual abuse. This is then applied to adult victims without thorough empirical evidence. The current review found limited empirical evidence or field research investigating the use of interview methods with adult victims of sexual assault. Therefore, much of the guidance on how to interview a victim of sexual assault is not grounded in evidence. Further research is needed to ensure these guidelines are appropriate and beneficial for victims.

Additionally, none of the studies reviewed compared memory recall ability of sexual assault victims during police interviews to that of other crimes. In actuality, there is limited empirical evidence to support the argument that sexual assault victims are less able to

accurately remember the offense than other types of crime victims (e.g., Archambault & Lonsway, 2008). This review found that the limited research that has been conducted to date has resulted in mixed findings. Some research suggests that victims of traumatic experiences, like sexual assault, are better able to accurately remember the offense compared to other crime victims (e.g., Peace et al., 2008), whereas other research suggests the opposite conclusion (e.g., Koss et al., 1996). These conflicting findings, and the potential for misconceptions about sexual assault victims' ability to remember, can undermine their credibility and hinder their access to justice (Hohl & Conway, 2017). Further research is clearly needed to directly compare memory performance across different crime types. Such research could help to clarify whether there are unique challenges in eliciting accurate memories from sexual assault victims during police interviews, and if so, how interview techniques could be adapted to better support this vulnerable population. A stronger evidence base in this area is essential for ensuring that sexual assault investigations and prosecutions are guided by robust psychological science rather than harmful misconceptions about victim memory.

With regards to this specific review, one limitation of the research was the non-specific nature of our search terms that yielded many search results. Our original aim was very broad to understand memory in adult cases of sexual assault. Therefore, we needed to reassess and adjust our aim to a more feasible research question. Moreover, it is possible that we could have re-evaluated the effectiveness of our search terms and reconstructed our search using better terms (e.g., police, interview, adult victims). This may have yielded a more concise pool of search results, as opposed to limiting our own search results down using inclusion and exclusion criteria. However, we are confident that through our inclusion and exclusion

criteria, as well as reference and citation searches, that we have obtained the relevant literature for this review.

2.5.6 Opportunities and Recommendations

This review has focused on police interviews when victims frequently do not report to the police (Office for National Statistics, 2021). First responders to incidences of sexual assault are often community actors or medical professionals who have not received training to appropriately document memory evidence. The first disclosure is crucial, both for the victim and for the use of this memory evidence in future criminal justice proceedings. For the victim, how they are treated by a first responder will impact how likely they are to discuss their case with criminal justice actors in the future (Campbell, Adams, et al., 2009; Elmir et al., 2011). Additionally, if the memory evidence is collected inappropriately this can limit a victim's access to justice (Fisher et al., 1987; Pipe et al., 2013), as police and prosecutors will draw into question the credibility of the evidence. Various protocols have been devised to provide first responders with skills to obtain memory documentation from survivors of sexual violence in humanitarian contexts (Foreign Commonwealth and Development Office, 2017; Murad Code, 2022). Whilst these initiatives are necessary to provide first responders with appropriate skills (e.g., rapport building, ground rules, appropriate questions), there is limited evaluation of their implementation and effectiveness in obtaining memory evidence from victims; and no research on the use of these interview principles with victims of sexual assault in humanitarian contexts. Therefore, future research exploring the use and adaptation of such principles to non-WEIRD (white, educated, industrialised, rich and democratic) populations is essential, as this research may not apply due to the different cultural contexts and legal jurisdictions.

In addition, memory documentation is a difficult skill that even experienced police officers find challenging (Powell et al., 2005). Therefore, written protocols (i.e., Foreign Commonwealth and Development Office, 2017) will not be sufficient without training, practice, and feedback (Benson & Powell, 2015). The current initiatives offer training, but they are either online or paid training courses that community actors in low-resource communities will not be able to access. Therefore, we need sustainable, trauma-informed training packages that are accessible to all if we wish to improve the documentation of sexual assault cases in all contexts. Considering this, we have co-developed an interview training package with a victim-led non-governmental organisation in Kenya, the Wangu Kanja Foundation. This training improves first responders' skills in documenting memory evidence using rapport building and ground rules (Stevens, Walsh et al., under review), that in accordance with this review do not detriment participants' memory performance.

Furthermore, due to low prosecution rates for sexual assault globally (Home Office, 2021; Rockowitz et al., 2024), we need to consider specialised interview techniques that can benefit investigations and prosecutions. For example, implementing a behaviourally informed interview. Behavioural crime linkage uses unique and consistent behaviours of perpetrators to establish a pattern of offending (*modus operandi*). Analysts can then use this *modus operandi* to identify serial offenders and connect their crimes (Davies & Woodhams, 2019; Woodhams & Bennell, 2014). This analysis is effective in both the Global North (Bennell et al., 2009) and the Global South (Woodhams & Labuschagne, 2012) and has been used to connect prolific serial rapists to their multitude of stranger sex offences (Slater et al., 2015). Such intelligence could be a low-cost, less resource-intensive method to gather evidence against a perpetrator. However, to date, behavioural crime linkage is used after offenders have been apprehended. One recent study included behaviourally informed interview questions and

found that asking crime linkage related questions does not decrease overall recall accuracy, and rather provides further details that can be used to bring offenders to apprehension (Stevens et al., 2022). Thus, the addition of crime linkage prompts within interviews for sexual assault may obtain complete and accurate accounts that benefit criminal justice. This has been replicated in field research (see Chapter 6; Stevens, Davies et al., under review). Future research should continue to develop behaviourally informed methods to improve investigations.

Whilst this review synthesises current research on face-to-face interviews with victims of sexual assault, over the past decade there has been an increase in online disclosures following the #MeToo movement (Me Too Movement, 2023). Very little is understood about how minimum standards of interviewing apply to an online attempt to document detailed and accurate memories (see Stevens et al., 2024 for a review). Therefore, as we understand more about obtaining memory evidence from sexual assault victims face-to-face, we should consider how to apply this in an online context.

2.5.7 Conclusion

Obtaining accurate statements from victims of sexual assault is essential in sexual assault investigations and prosecutions. The current research literature is sparse in how to obtain the most detailed and accurate statements. Nevertheless, the research is promising that when questioned using appropriate interview methods, victims can report accurate memories. Future research needs to consider theoretical frameworks and different research methodologies to develop a more complete understanding of memory recall in this context to develop better interview techniques to increase complete and accurate disclosures from victims.

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CHAPTER 3 A CRITICAL ANALYSIS OF GENDER-BASED VIOLENCE REPORTING AND EVIDENCE BUILDING APPLICATIONS (GBVXTECH) FOR CAPTURING MEMORY REPORTS

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Alongside the scoping review conducted in Chapter 2, we also considered alternative reporting methods outside of formal police reporting channels, as many victim-survivors will not report to the police (Office for National Statistics, 2021). Since the start of the #Me Too Movement (Me Too, 2023), there has been an upsurge in digital platforms that document a statement from victim-survivors of gender-based violence (GBV; hereafter referred to as GBVxTech, World Bank, 2019). Whilst the creators of these technologies are well-meaning in providing a space for victim-survivors to have their voices heard, there has been no systematic evaluation of how this memory evidence is documented. For instance, do the GBVxTech platforms adhere to minimum standards of best-practice advocated within face-to-face interviews? To answer this, we conducted a systematic review following the PRISMA framework, whereby we located 13 accessible GBVxTech platforms from around the world and evaluated these platforms against best-practice interview guidance. In the article that follows we provide our findings, as well as recommendations for future GBVxTech development to prioritise the documentation of complete and accurate memory statements, whilst keeping the victim-survivors safe.

Addendum

1. On page 7, Table 2, we outline the purpose of all 13 GBVxTech platforms. The lead researcher (LS) summarised the purpose of each platform based on 1) information provided on their website/ within the application or 2) from providing the mock-report. This was then reviewed by the research team prior to submission. However, it should be noted that this may not reflect the specific purpose that a victim-survivor is choosing to utilise the platform for, as this may differ from the intended purpose the platform was constructed for. For example, a platform may be designed to connect victim-survivors to legal professionals, but a victim-survivor may only wish to document their statement for their own therapeutic reasons.
2. On page 9, we note the inadvisability of sharing reports with other users due to the potential risks of memory contamination and to user safety. Whilst this is a pertinent issue, there are some platforms such as the National Ugly Mugs scheme whose purpose is to share information regarding unsafe clients amongst sex workers. Whilst this website did not meet the inclusion criteria for the current research, as it is not a documentation attempt, it is important to note that some platforms may have the sole purpose of sharing information. However, based on the current research users should be explicitly informed that reading others reports may jeopardise their credibility in legal proceedings if they ever wanted to seek criminal justice.

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A critical analysis of gender-based violence reporting and evidence building applications (GBVxTech) for capturing memory reports

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Introduction: Gender-based violence (GBV) is under-reported to the authorities owing to the stigma, shame, and fear of reprisal that surrounds these crimes. To address this, there has been an influx of technologies, including mobile phone and online applications that allow victim-survivors (hereafter, victims) to document and report GBV (hereafter referred to as GBVxTech). We critically analysed the extent to which GBVxTech applications align with the scientific knowledge base on gathering accounts of crimes from victims and witnesses.

Methods: We identified 41 reporting and evidence building applications from around the world but found many ($n = 19$) were no longer accessible. A total of 13 applications met the study criteria and were available for download. We evaluated each application on how well its design and features align with established minimum best practice standards for gathering complete and accurate accounts from witnesses and victims, such as the pre-interview instructions (e.g., setting ground rules), questioning approach (e.g., using open-ended questions), and the adequacy of security features (e.g., password protection).

Results and Discussion: We found most applications employ open questions, encourage victims to report information in an independent voice, and seek to elicit information pertinent to a criminal investigation. None of the applications use leading questions. However, most applications do not establish ground rules, and many use forced-choice questions, do not time stamp the information gathered, or document when users change their answers. Many applications have limited security features, potentially compromising users' safety. Further, some applications do not provide information about how to use the app, an informed consent procedure, or data usage information. We discuss the findings and offer recommendations for future GBVxTech development.

KEYWORDS

gender-based violence, #MeToo, mobile applications, police interviews, rape, sexual violence

Introduction

Gender-based violence (GBV) is any harmful act perpetrated against an individual or group due to their gender, and encompasses domestic, sexual, psychological, financial, and digital violations, as well as female genital mutilation, human trafficking, and child marriage

(United Nations, n.d.). GBV affects men, women, and children worldwide, with global estimates finding that one in three women over the age of 15 have experienced intimate partner violence or non-partner sexual violence at least once during their lifetime (World Health Organization, 2021), and one in three men in the United States having experienced some form of sexual violence, intimate partner violence, or stalking within their lifetime (Smith et al., 2018). Furthermore, the actual prevalence of GBV may be higher considering that many people do not disclose their victimisation (World Health Organization, 2003) due to stigma, shame, and fear (Shaibakova, 2020). Moreover, of all people who experience GBV, fewer than 40% seek any form of legal or medical assistance (United Nations, 2015), and even fewer will have their case prosecuted (Home Office, 2021).

Given global underreporting of GBV, the #MeToo movement was founded initially to support women and girls of colour who experienced sexual violence (Me Too Movement, 2023) and to highlight how gender, race, and other inequalities intersect “to produce unique experiences of violence” (Imkaan, 2019, pp. 3). The #MeToo movement later became a channel for victim-survivors (hereafter, victims) of sexual violence to disclose incidents on social media. These social media disclosures are revealing not only the widespread prevalence and nature of GBV but are also ushering in a burgeoning of mobile phone and online applications for gathering information about GBV incidents, hereafter referred to as *GBVxTech* (World Bank Group, 2019). Victims, irrespective of gender, can use these applications to get help with accessing vital support services (e.g., medical and legal facilities) and to document incidents anonymously or confidentially, either in real-time or retrospectively. These digital data could potentially be admitted as evidence at trial in the United States (Miller, 2022), the United Kingdom (Hollie Guard, 2021), and Australia (Paterson, 2018).

Benefits of GBVxTech

According to research, sexual assault victims and their support providers want an alternative reporting system, such as mobile phone applications and online reporting platforms, in addition to formal criminal justice reporting methods (Heydon et al., 2023). There are many reasons for this. First, many applications and websites allow victims to report incidents in real-time and store their report (e.g., iWitnessed), which is crucial in situations where victims cannot report to the authorities. There may be no police station nearby for the victim to access support, such as in rural areas and in low- and middle-income countries (see Smith et al., 2019), or victims may not be able to escape their attacker and make a report, such as in domestic violence cases. Compared to requiring formal police interviews, giving victims the flexibility to report sexual assault through informal or anonymous channels can reduce barriers and increase overall reporting rates (Heydon et al., 2023). GBVxTech also stores reports for potential future use in criminal proceedings if victims choose to formally report later (Paterson, 2018).

Second, GBV victims frequently delay reporting incidents to law enforcement (Read and Connolly, 2007; Loney-Howes et al., 2022), which results in missed opportunities to promptly gather forensic evidence and victim accounts (i.e., memory evidence). Memory strength for the crime decreases with time (Ebbesen and Rienick, 1998; Gabbert et al., 2009; Stevens et al., 2022). With GBVxTech,

victims can document a GBV incident soon after it occurs. Research has found that an early initial free recall attempt can maintain the accuracy and completeness of an individual's account over time if victims and witnesses are interviewed following recommended practise (e.g., Penrod et al., 1982; Wixted and Ebbesen, 1997; Ebbesen and Rienick, 1998; Gabbert et al., 2009), including in sexual offence cases (Stevens et al., in prep.). Further still, immediate self-documentation can preserve memory accuracy over time (Gabbert et al., 2022; Stevens et al., 2022), and reduce susceptibility to misleading post-event information (Gabbert et al., 2012). This is particularly important in GBV cases because the victim's account is often the primary, if not only, source of evidence (Kebbell et al., 2007). Actual or perceived gaps or inconsistencies in victim accounts can diminish prosecution odds, as officials may think gaps and inconsistencies signal that the victim lacks credibility (Freyd, 2004). Thus, timely documentation not only maintains accuracy (Ebbesen and Rienick, 1998; Gabbert et al., 2009) but also can serve to indirectly maintain the victim's credibility (see Westera et al., 2011, 2013).

Third, some victims may prefer to use GBVxTech over contacting the police because the technology allows them to anonymously report the incidents to help law enforcement prevent future crimes. One example of an anonymous reporting app is *SafeTTC* (n.d.), where individuals can report incidents occurring in public spaces (e.g., public transport) to provide key information about local hotspots. *JDoe* (n.d.) and *Callisto* (n.d.) are also apps that allow anonymous reporting, and both use algorithms to monitor when multiple reports refer to the same perpetrator for purposes of identifying serial perpetrators.

Finally, GBVxTech may be used by those who wish to seek support services (Heydon et al., 2023) or who intend to seek legal redress through civil action rather than criminal prosecution. For example, some apps (e.g., *JDoe* and *Callisto*) provide victims with the opportunity to be contacted by a lawyer or legal advisor to discuss their options.

Minimum best practice principles and GBVxTech

The completeness and accuracy of victim accounts are largely dependent on adherence to minimum best practice principles for face-to-face interviews (e.g., Read et al., 2009; Brubacher et al., 2014). These principles were recently extended to self-administered written interviews that use open questions and free recall formats (Gabbert et al., 2009, 2022). These principles set a minimum standard for interviews, and include establishing rapport and trust, providing narrative practise, setting ground rules, using open questions, and allowing for the victim's account to be appropriately documented (i.e., in the victim's own words, or via their ‘independent voice’; Powell et al., 2005). It is also crucial that interviews adhere to principles that protect the victim's human rights (Murad Code, 2022). Since the emergence of GBVxTech is recent, there has been little consideration of how these technologies might adopt these evidence-based principles. Below, we discuss the core principles of interviewing, and how they might be applied to GBVxTech.

Rapport building and trust

Rapport building is the process of establishing a relationship with another individual, and its use during an interview allows people to feel more at ease (Vallano and Schreiber Compo, 2015). Establishing

rapport can make victims feel more comfortable to disclose information (Fisher and Geiselman, 1992). When an interviewer establishes rapport with a victim, it promotes a feeling of comfort, whereby a victim feels safe and relaxed to discuss their experiences (Patterson, 2011). Interviewers can foster this environment by ensuring the victim feels believed (Patterson, 2011), displaying empathy (Greeson et al., 2014; Kim et al., 2020), and by being personable with the victim (e.g., sharing a personal detail/story separate to the event to be discussed within the interview; Greeson et al., 2014). Rapport building has been found to increase the accuracy of the victim's account (Kieckhafer et al., 2014; Vallano et al., 2015), and increase the probability that victims who wish to make a formal complaint will carry through and complete the reporting process (Brooks and Burman, 2017).

Rapport building is essential in dyadic person-to-person interviews for sexual assault (Westera et al., 2016). Rapport is established through dynamic individual exchanges (see Abbe and Brandon, 2013; Gabbert et al., 2021, for reviews), whereas apps feature structured questioning and inflexible interaction. Undeniably, it is harder to implement rapport building techniques using technology compared to face-to-face contexts (Meijer et al., 2021). Non-verbal communication (eye contact, open body language etc.) and verbal communication (affirmative responses, comforting the victim during disclosure) are methods used in rapport building (Abbe and Brandon, 2013), and these cannot be simulated in GBVxTech applications. Trust, however, is one component within the definition of rapport (Neequaye and Giolla, 2022) that could be achieved in a non-dyadic context (Meijer et al., 2021). Examples include ensuring the technology clearly conveys the purpose of data collection, reassuring users with respect to data security, and obtaining informed consent regarding data storage and usage (Liu, 2018; Obada-Obieh et al., 2020). By establishing trust, users may feel more comfortable sharing information (Abbe and Brandon, 2013; Gabbert et al., 2021), which is a fundamental reason for establishing rapport.

Another critical component of helping victims to feel more comfortable with the interview experience is narrative practice. This allows the interviewee to practise recalling a neutral or positive episodic event before they provide information about the crime (Roberts et al., 2004; Lyon et al., 2014; Yi and Lamb, 2018). This is beneficial because it gives victims the opportunity to familiarise themselves with the style of questioning that will be used during the interview (Roberts et al., 2011), which in turn increases the number and accuracy of details disclosed during subsequent recalls (Sternberg et al., 1997; Price et al., 2013). Beyond increasing memory recall accuracy and completeness, narrative practice has also been found to help victims feel more comfortable during the interview by improving their understanding of the interview process (Brubacher et al., 2020). Narrative practice could be implemented within GBVxTech by asking victims to freely recall a positive or neutral event before beginning their report.

Ground rules

Ground rules are clear, simple instructions given to the victim that establish what to expect during the interview (Powell et al., 2005). These instructions enhance memory reporting during the interview and help to manage interviewee expectations (Fessinger et al., 2021). Key ground rules include encouraging the interviewee to say 'I do not know' when they do not know an answer to a question, and correcting the interviewer if the interviewer does not accurately understand what the interviewee has said (Ridley et al., 2012). In addition to managing

expectations, encouraging 'do not know' responses increases the accuracy of memory reports (Scoboria and Fisco, 2013). Although most of the research about ground rules has focused on child interviewees, it is also useful with adults during investigative interviews (Ali et al., 2020) and in lineup tests (Weber and Perfect, 2012; Wells et al., 2020). These research studies illustrate the importance of ground rules; but it is unclear to what extent these rules have been applied in the context of GBVxTech.

We were particularly interested in whether the applications we found would allow users to indicate when they do not know an answer to a question, or instead either require users to provide information or allow them to leave questions blank. Requiring users to provide information that they do not explicitly remember is problematic should the case progress to investigation. Requiring responses can introduce inaccuracy, inconsistency, or uncertainty in accounts. Allowing 'do not know' or 'do not remember' options protects against false information whilst signalling when users truly lack memory for certain details.

Independent voice

During an interview, it is essential that the victim's voice is heard and not influenced by other information. This can occur if the victim overhears information provided by other witnesses (Gabbert et al., 2003) or via information shared by the interviewer (Lofus and Palmer, 1974). It is also particularly useful for interviewers to encourage a free recall account via open-ended prompts at the beginning of the interview before asking specific questions to ensure that the victim's initial account is given without any influence from the interviewer (Fisher and Geiselman, 1992; Powell, 2002; Ministry of Justice, 2022). Additionally, interviewers should not interrupt the victim whilst they provide their account, because this can discourage the victim from taking an active role in the interview or may break the rhythm of their recall, which could result in their not reporting details that they otherwise would have remembered and reported and/or damage their independent voice (Fisher and Geiselman, 1992). Further, accounts should be recorded verbatim, without bias or opinion from the interviewer (Powell, 2002), in the victim's native language to reduce cognitive load and maximise accuracy (Raver et al., 2023), and in a format that is simple and accessible for the victim (e.g., typed/voice recorded, Gabbert et al., 2009). Despite evidence that this principle is crucial for obtaining an accurate report from victims, the extent to which independent voice is maintained in the context of GBVxTech remains to be seen.

Open questions

Open questions are essential during a police interview. Open questions are used to elicit unrestricted answers and allow the interviewee to give a free narrative account of events (Ministry of Justice, 2022). Due to the nature of open questions, they have a broad focus and do not dictate what information the interviewee should be reporting (Powell and Snow, 2007), which enables interviewees to respond freely. Open questions are beneficial because they result in more detailed and accurate responses than yes/no and forced-choice questions (Oxburgh et al., 2010; Westera et al., 2011). Furthermore, open questions reduce the risk of the interviewer influencing the victim's response by imposing expectations or bias (i.e., avoiding leading questions, Milne and Bull, 2006). Recommended practice entails asking open questions that have the least possible influence on memory reporting, thereby enabling victims to provide an independent account (Milne and Bull, 1999; Heydon and Powell,

2018). Given the importance of open questions in obtaining detailed and accurate statements, we were interested in the extent to which GBVxTech utilises them. Whilst open questions are considered best practice, most interviewers use specific questions (Powell et al., 2005). Specific questions, including who/what/when/where questions, yes/no questions, and forced choice questions (Benson and Powell, 2015) encourage the interviewee to answer with a single word or detail, and this tends to limit the amount of information elicited from the interviewee (Lyon, 2014). Therefore, we also examined the use of specific questions in reviewing the applications.

Human rights principles

Our analysis was also inspired by fundamental human rights standards and principles regarding respect for the life, dignity, and privacy of interviewees, as outlined in the Murad Code (2022) and emphasised by Juan Mendez, the UN Special Rapporteur on Torture (Mendez and Areh, 2021). The Murad Code, named after Nobel Peace Prize winner Nadia Murad, outlines ethical standards for interviewing sexual violence victims, including obtaining informed consent, protecting their privacy and safety, and avoiding re-traumatisation. These human rights principles also extend to digital evidence gathering through GBVxTech, which is key in humanitarian crises where users face heightened vulnerability (Hankins, 2019). However, the principles also apply more broadly given the sensitive nature of sexual violence evidence, regardless of context.

Evaluation of GBVxTech

GBVxTech can be a vital tool for GBV protection, prevention, and response (Eisenhut et al., 2020). For example, a report from one mobile app, SafeTTC, aided in the arrest of an individual who was already wanted as a suspect for a separate assault (Spurr, 2017). Furthermore, globally, 83% of individuals own a smartphone (Statista, 2022), making smartphone-based technologies that record and report cases of GBV accessible and available to many members of the public, especially in the Global North. As such, GBVxTech is potentially a powerful tool to address the underreporting of GBV and strengthen the evidence base necessary for successful prosecutions. Whilst GBVxTech holds promise, its use requires diligence as improper use risks harm. Our study critically evaluates GBV reporting apps intended to aid victims in alerting authorities. Though well-intentioned, these tools require appraisal to realise potential benefits.

In the only research of its kind to date, Eisenhut et al. (2020) systematically reviewed mobile health intervention apps that address violence against women. The authors classified apps into five categories: emergency (e.g., send emergency alerts to selected contacts), avoidance (e.g., avoid potential incidents), education (e.g., increase knowledge), reporting and evidence building (e.g., report an incident during or after it occurs), and supporting (e.g., used to provide support for victims). The authors found that just under half of the apps (47%) had the primary function of offering immediate help in emergencies, such as alerting emergency contacts or the nearest police station before, during, or soon after an incident. Furthermore, only 14% of apps were categorised as reporting and evidence building apps, although the prevalence of these apps was found to be increasing over time. The review also revealed that there is a growing number of education and supporting apps, which suggests that there may be a shift towards building apps

that support individuals *after* the incident rather than during an emergency.

We extend the research conducted by Eisenhut et al. (2020) by analysing the extent to which applications in the 'reporting and evidence building' category both employ best practice principles for eliciting accurate and reliable information from victims and take steps to protect the victims who use them from further harm. We focus on this category because this type of GBVxTech was developed for the express purpose of recording information about the crime to share with law enforcement should the victim decide to report the crime(s) to the authorities. Altogether, given the ethical, legal, and social ramifications of GBVxTech, there is a need to better understand (1) how these applications elicit GBV accounts from users, and (2) the steps being taken by GBVxTech developers to protect users and their data.

The current study

The core best practice principles discussed above are vital in gathering accurate and detailed accounts in face-to-face and written interviews. However, GBVxTech only recently emerged and therefore little is known about whether best practice principles are being adapted and implemented in this technology. We address this gap by critically analysing GBVxTech reporting apps that are currently in use and offering recommendations for how face-to-face interview principles may be adapted within a virtual context.

Our research has two objectives. Firstly, to evaluate the extent to which the best practice principles have been implemented in GBVxTech, and secondly, to draw on our findings to stimulate research and policy development so that the potential benefits of GBVxTech can be better realised.

Methods

GBVxTech identification

Identification plan

This review followed the PRISMA framework (Page et al., 2021) when searching for GBVxTech and selecting our final sample. To identify all relevant GBVxTech platforms, keyword searches were conducted on Google Scholar, Google, Twitter, Play Store (Android), and App Store (iOS) for the following search strings: 'gender-based violence + reporting and evidence-based app*' (to capture all denominations of 'app', 'apps', 'application', and 'applications'); 'gender-based violence + reporting app*' and 'gender-based violence + reporting tech*' (to capture all denominations of 'technology'). Additionally, 'gender-based violence' was replaced with 'sexual violence', 'sexual assault', and 'domestic violence'. To ensure we located all possible GBVxTech platforms for inclusion within our review, we also completed a reference and citation search on the paper of Eisenhut et al. (2020) and held discussions with academic and practitioner colleagues (see Figure 1).

Selection criteria

The GBVxTech platforms included in this study were those that document reports of GBV specifically. The GBVxTech accessed were

filtered based on our exclusion criteria, with any GBVxTech that met one or more of our exclusion criteria being removed from the final review. Our exclusion criteria included: (i) if the GBVxTech only signposted victims to support services, crowdsourced crime information, or provided educational content but did not allow them to document a specific incident as this would not preserve their memory evidence for use in criminal justice proceedings; (ii) if researchers were unable to access the GBVxTech using a United Kingdom smartphone or laptop, a VPN, or via discussions with the creators, as we were unable to review the GBVxTech in its entirety; and (iii) if GBVxTech was not accessible to all service users (e.g., only accessible to young people aged 10–24).

Data extraction

The evaluation checklist for face-to-face interviews used by Benson and Powell (2015) was adapted to make it relevant to GBVxTech. Alongside the original criteria, another evaluation criterion exclusively related to technology ('GBVxTech characteristics') was added based on recommendations from Martínez-Pérez et al. (2015). The adaptations were discussed and finalised by the research team to produce the modified checklist that was used for data extraction (see Table 1 for the modified evaluation criteria checklist).

Data extraction was completed by conducting a mock report within each application.

Measures

The modified GBVxTech evaluation checklist adapted from Benson and Powell (2015) consisted of four themes: questioning strategies, adherence to the interview protocol, investigative questions, and GBVxTech characteristics (Martínez-Pérez et al., 2015). Each of the criteria on the evaluation checklist was either coded as 'present' (if there was at least one instance of the criterion) or 'absent' (if no element of the criterion was seen) within each evaluated GBVxTech platform.

Reliability

Two researchers independently assessed all potential GBVxTech search results against the inclusion and exclusion criteria for final selection within the review. Any discrepancies were discussed with the senior author for final selection.

The same two researchers extracted information from the GBVxTech using the above evaluation criteria. Additionally, two blind coders evaluated around 60% of the GBVxTech for purposes of

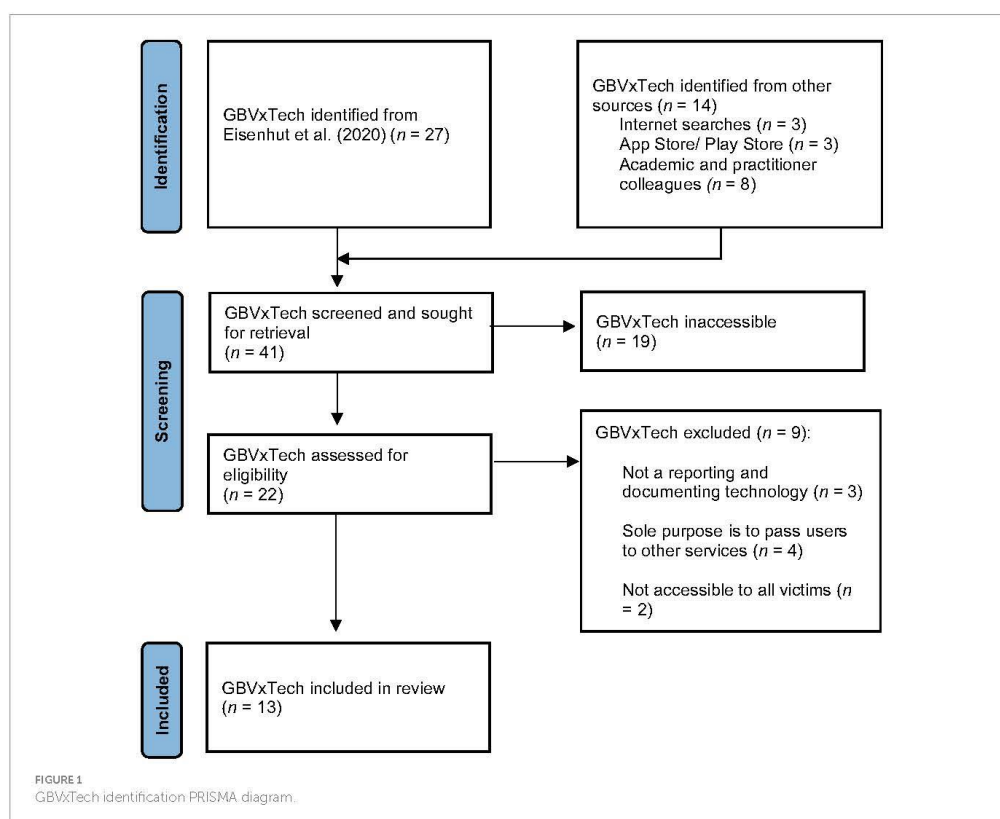


TABLE 1 Evaluation criteria checklist.

Best practise principles criteria		Definitions and examples
Questioning strategies	Open questions	Questions that allow a detailed response e.g., “Tell me what happened?”
	Specific questions	Questions that request a particular detail through forced-choice, yes/no prompts or who/what/where/when/why/how questions e.g., “what did the perpetrator look like?”
	Leading questions	Questions that suggest a particular answer and may introduce information that the victim never mentioned e.g., “what did the male look like?” (When the victim never mentioned the gender of the perpetrator).
	Responding methods	Different ways to answer a question e.g., free recall textbox, drop-down menu etc.
Adherence to the interview protocol	Trust	Building a relationship with the victim to make them feel more comfortable during the interview. Examples of trust building methods within GBVxTech include: <ul style="list-style-type: none"> Asking for consent (e.g., via a pop-up) Giving an introduction to the app/website Explaining the purpose of the GBVxTech
	Narrative practice	Allowing the victim the opportunity to practise recalling a neutral or positive episodic event before they provide information about the crime <ul style="list-style-type: none"> Narrative practice (e.g., practise questioning phase).
	Ground rules	Ground rules are instructions given to the victim about what to expect during the interview. Examples of ground rules within GBVxTech include: <ul style="list-style-type: none"> Reporting ground rules Ability to view completed report to clarify misunderstandings
	Independent voice	Allowing the victim to respond using their own words and experiences. Examples of this within GBVxTech include: <ul style="list-style-type: none"> Access to more than one language Can upload voice notes or videos No interruptions during report Use of open questions Free recall methods of responding (e.g., text boxes) Can victims view other victims reports?
	Debrief	Giving support to the victim after they have completed the interview e.g., helplines, website links etc.
Investigative questions		Investigation relevant details. <ul style="list-style-type: none"> The identity of the offender The approximate time of the offence The location The offence type Possible witnesses Possible physical evidence
GBVxTech characteristics	Data usage clarity	Did the GBVxTech explain what would happen with the victim's data after providing a report? e.g., data storage and usage statement.
	Security options	Did the GBVxTech have security provisions? e.g., password/pin protection.

inter-rater reliability ($n = 8$). Overall, there were moderate to perfect levels of agreement ($< 60\%$ Kappa) on all evaluation criteria and discrepancies were discussed to yield the results presented below.

results are discussed below, and implications for these results are explored in the discussion.

Results

Table 2 provides a descriptive overview of each of the 13 GBVxTech platforms reviewed.

Table 3 illustrates how the 13 GBVxTech platforms performed on each of the criteria within the modified evaluation checklist. The

Questioning strategies

Regarding question types, 92% of the GBVxTech platforms reviewed used open questions at least once, 69% used specific questions at least once, and 0% asked leading questions. Furthermore, specific questions were the most used question type, and only 23% of technologies opened with an open-ended invitation such as, ‘Tell

TABLE 2 GBVxTech description.

GBVxTech	Country	Affiliation	Purpose	Availability
SafeTTC	Canada	Elerts	To report harassment or safety concerns on transport	iOS & Play Store
iWitnessed	Australia	University of Sydney & UNSW	To collect memory evidence for violent incidents (e.g., domestic violence)	iOS & Play Store
Kharita: Harass Map	Egypt	Harass Map	To report sexual harassment and intervention, and to show the scope of the problem in Egypt on a map	Play Store and Online Website
Jdoe	United States	Ryan Socia	To provide an anonymous platform to report sexual misconduct and to connect victims with legal professionals	iOS & Play Store
SV_Case Study	Kenya	Wangu Kanja Foundation	To allow victims to document their experiences and to monitor case progression along the criminal justice pathway	iOS & Play Store
Stop Sexual Harassment Video Recorder	United States	Safe Workplace LLC	To discreetly collect audio and visual data on sexual harassment	iOS & Play Store
Bright Sky	United Kingdom	Hestia	To signpost support services and to document victim's experiences	iOS & Play Store
Spot	United States	All Turtles	To report misconduct at work	AI Chatbot through Workplace
eyeWitness to Atrocities	United Kingdom	International Bar Association	To discreetly capture photos and videos of atrocities.	Play Store
Hollie Guard	United Kingdom	Hollie Gazzard Trust	To gather real-time evidence of incidents, as well as provide alerts and journey tracking capabilities	iOS & Play Store
Callisto	United States	Callisto	To document assault and to match reports of individuals harmed by the same perpetrator	Website (need United States campus email)
DocuSAFE	United States	National Network to End Domestic Violence and Office on Victims of Crime	To document incidents of abuse and share with legal professionals	iOS & Play Store
Report & Support	UK	Culture Shift	To document bullying or harassment for students, staff, and visitors of UK Universities	Website

me] What happened?' instead of a specific question. We also found that whilst most of the GBVxTech used open questions at least once, only 38% of GBVxTech used solely free recall responding methods, e.g., using a textbox to enter the crime report. Additionally 62% of all GBVxTech incorporated closed responding methods, such as drop-down menus and multiple-choice questions.

Adherence to interview protocol

Regarding trust, only 23% of GBVxTech asked users for informed consent, 52% provided an introduction to the app/website, 85% discussed the purpose and aims of the technology, and 0% provided an option for narrative practice. Additionally, whilst only 15% of the GBVxTech reported specific ground rules instructions (e.g., to state 'I do not know'), 92% allowed victims to view the final report before submitting to clarify any misunderstandings within the report.

We also investigated whether the GBVxTech encouraged an independent voice and found that only 38% offered more than one language option, and that 62% allowed users to report using a voice note or video/photo feature. Furthermore, only one of the applications (Kharita: Harass Map) allowed victims to view other victims' reports. We also found that only 46% of GBVxTech

offered a debrief (e.g., signposting to psychological support or advice).

Investigative questions

Since GBVxTech data could be used in legal proceedings, we assessed which details were collected by the platforms. We found that 38% asked for the identity of the offender, 77% asked for the approximate time of the offence and the location of the incident (either pinpoint on a map or write the location), and 69% asked for the specific offence type such as sexual assault or rape. Additionally, 23% of GBVxTech platforms asked about the presence of possible witnesses, and 85% enquired about potential physical evidence (e.g., forensic evidence, weapons, photos/documents/videos of injuries) to provide corroborating evidence.

GBVxTech characteristics

All GBVxTech briefly discussed how the data will be used within their terms and conditions, but only 77% clearly explained where data will be stored and for what purposes it can be accessed (e.g., whether

TABLE 3 GBVxTech evaluation results.

Questioning strategies													
	Safe TTC	iWitnessed	Kharita: Harass Map	Jdoe	MobApp	Stop Sexual Harassment Video Recorder	Bright Sky	Spot	eyeWitness to Atrocities	Hollie Guard	Callisto	DocuSAFE	Report & Support
Open question usage	x	x	x	x		x	x	x	x	x	x	x	x
Specific question usage	x	x	x	x	x			x			x	x	x
Leading question usage													
Open responding methods	x	x	x	x		x	x	x	x	x	x	x	x
Closed responding methods	x		x	x	x			x			x	x	x
Adherence to interview protocol													
	Safe TTC	iWitnessed	Kharita: Harass Map	Jdoe	MobApp	Stop Sexual Harassment Video Recorder	Bright Sky	Spot	eyeWitness to Atrocities	Hollie Guard	Callisto	DocuSAFE	Report & Support
Trust	x	x	x	x			x	x	x	x	x	x	x
Narrative practice													
Ground rules	x	x	x	x		x	x	x	x	x	x	x	x
Independent voice	x	x	x	x	x	x	x	x	x	x	x	x	x
Debrief		x	x				x				x	x	x
Investigative questions													
	Safe TTC	iWitnessed	Kharita: Harass Map	Jdoe	MobApp	Stop Sexual Harassment Video Recorder	Bright Sky	Spot	eyeWitness to Atrocities	Hollie Guard	Callisto	DocuSAFE	Report & Support
Identity of offender		x		x	x			x			x		
Time		x	x	x	x	x		x	x		x	x	x
Location	x	x	x	x	x			x	x		x	x	x
Offence type	x	x	x	x	x			x		x		x	x
Possible witnesses		x						x			x		
Physical evidence	x	x	x		x	x	x	x	x	x	x	x	
GBVxTech characteristics													
	Safe TTC	iWitnessed	Kharita: Harass Map	Jdoe	MobApp	Stop Sexual Harassment Video Recorder	Bright Sky	Spot	eyeWitness to Atrocities	Hollie Guard	Callisto	DocuSAFE	Report & Support
Data usage clarity	x	x	x	x	x	x	x		x		x	x	
Security options		x				x	x		x	x	x	x	

An x indicates that the specified GBVxTech platform included at least one feature of the relevant criterion.

the data can be forwarded to police, whether data are solely saved on the GBVxTech app or institutional server, etc.).

We also wanted to investigate the security options available within the apps and websites and found that 54% of our reviewed GBVxTech utilised a security feature, such as a password, a quick escape button from the application if someone approaches, or a disguise function that makes the app appear to be another type of app (e.g., a weather app).

Discussion

In this paper, we investigated the extent to which GBVxTech apps and websites adhere to best practice interviewing principles. Applying these principles can improve the accuracy of victim reports and ensure the methods and evidence are legally reliable should the victim decide to involve authorities. Further, we wanted to better

understand how GBVxTech ensures the protection of users and their data.

Our review found that GBV apps *partially* follow best practices; some features align with key principles, but there is room for improvement. We will highlight well-implemented features, identify lacking areas, and recommend enhancements.

Adherence to best practice

The GBVxTech included in our review adhered to several minimum standards of best practice for interviewing victims about GBV incidents. For example, most of the applications used open questions, which helps to ensure that the victim's account is captured in their own words and not influenced by suggestive interview questions (Elmir et al., 2011). Furthermore, none of the applications included in our review used leading questions. Leading questions can decrease a victim's credibility as they can elicit self-contradictions within the victim's testimony (Andrews and Lamb, 2016). By avoiding leading questions, GBVxTech can gather accounts that make for stronger legal evidence.

We also found that 12 out of 13 of the applications allowed victims to view their final report before submitting. On one hand, this could be viewed as a positive aspect of GBVxTech, since it allows victims to amend any mistakes or misinterpretations before submitting. On the other hand, by editing the final report before submitting, it may be argued that the evidence has been contaminated since the report is technically no longer a first account, and this could have repercussions in later legal proceedings. Only one application (Kharita: Harass Map), allowed victims to view other victims' reports. Whilst no GBVxTech should have this feature, it is reassuring that so few applications enable reading others' reports. Allowing victims access to others' accounts is unethical, poses psychological and safety risks, and can potentially compromise the quality and utility of the victim's own report. Seeing other accounts could invalidate the victim's own experiences and dissuade them from reporting if they believe other incidents seem 'worse' than theirs. Victims' memories also risk contamination if they incorporate details from others' reports into their own (see Gabbert et al., 2003). Moreover, making reports public, even anonymised, endangers victims by enabling identification through case details. The lack of this feature across the applications we reviewed is positive, but technology creators must remain vigilant against its inclusion given the potential harms.

To address language and writing proficiency differences across users, we hoped that GBVxTech would incorporate a voice note or video feature to allow victims to report in their own words. We found that around 60% included this feature. This is crucial as it allows victims to disclose using their preferred method (text, voice note, video). In addition to addressing language barriers, voice note and recording facilities may increase user satisfaction and thereby people's willingness to engage with the application and disclose information. User feedback on the Self-Administered Interview indicated many people prefer typing or recording answers over using paper and pen, because it is easier, more practical, and offers users greater flexibility (Gabbert et al., 2009).

The GBVxTech platforms we reviewed also effectively applied the principle of investigative questioning. Most of the applications asked investigative questions such as the identity of the offender, the time/location of the offence, offence type, potential physical evidence, etc. Since reports collected via GBVxTech may be used in later legal

proceedings, it is crucial that these applications do not miss opportunities to collect investigation-relevant information. Whilst the inclusion of investigative questions in GBVxTech is positive, it is important to note that most applications used forced-choice closed response formats for these questions. Closed-ended questions can limit the level of detail obtained (Oxburgh et al., 2010) and constrain the user's independent voice. Employing more open-ended response formats could elicit richer details from users in their own words.

All the GBVxTech platforms we reviewed explain in their terms how user data will be used. Furthermore, 77% clearly explain where user data are stored, such as whether the data are stored locally on the application. Ideally, all GBVxTech should explicitly detail data storage and access. This enables informed consent, as victims are able to actively understand how their data are being used (Heydon et al., 2023) regardless of the data protection rules in a given jurisdiction.

Limitations of current GBVxTech

Whilst not all minimum standards of best practice in face-to-face interviewing are feasible within a digital format (e.g., verbal communication tactics to build rapport), some principles that would be simple to adapt are often missing (e.g., open questions, narrative practice, and ground rules).

Firstly, we found that only 23% of GBVxTech prompted the user for information starting with an open-ended invitation such as, '[Tell me] What happened?' This low figure is concerning because according to face-to-face interview guidelines, a free recall account should always be obtained before asking specific questions (e.g., Achieving Best Evidence guidelines in the United Kingdom, Ministry of Justice, 2022). This is encouraged because it allows victims to give a complete, uninterrupted account in their own words (Powell, 2002; Brewer and Williams, 2017). Furthermore, more than half of all GBVxTech used closed responding methods, such as drop-down menus and multiple-choice questions. This response style raises numerous issues; firstly, these forced-choice methods limit the response options available, and therefore may not list the victim's desired response option. As a result, victims may be forced to select an option that does not accurately capture their independent voice and experiences, or they may choose not to continue reporting if they feel their experience 'does not count' within the options provided. Secondly, since the victim's account is limited to preselected response options, they cannot describe their experience in their own words. Forced-choice formats decrease the level of detail in reports, potentially reducing evidence quality for investigators. An open response format would also let victims rehearse details about the incident in their own words, strengthening their memory and any subsequent accounts they provide to legal officials.

We found that none of the GBVxTech employed narrative practice. Sternberg et al. (1997) found that children who practised providing a detailed account of a positive or neutral non-abusive episodic memory in the introductory phase of the interview gave more detailed narratives in the later recall phase, demonstrating the importance of practising a separate episodic recall prior to being interviewed about the event. Thus, GBVxTech can increase victim comfort and the level of detail provided by employing narrative practice. Our results also showed that most of the GBVxTech did not include ground rules instructions. This is problematic because, as mentioned previously, ground rules are useful for both adults and children during investigative interviewing to

obtain both detailed and accurate accounts (Lyon, 2014; Ali et al., 2020). Future GBVxTech should consider prioritising the introductory phase of the application before a victim begins their report. During the pre-interview phase, trust in the application could be built and expectations set through ground rules and narrative practice, which will promote more detailed and accurate responses.

Another issue we found is that most applications allow users to report in only one language. The limited language options could be damaging to the victim's independent voice. They should be able to report in their first language to capture the most accurate account (Raver et al., 2023). Moreover, if a victim is forced to report using a language in which they are not proficient, it could impact the accuracy of the report via errors in translation (Evans et al., 2019) or it could deter a victim from using the application.

Our analysis found gaps in adherence to human rights principles amongst the reviewed GBV technologies. Less than 25% requested informed consent from users, contrary to ethical investigative standards (Murad Code, 2022). Additionally, only 46% offered post-reporting support, advice, or referral to services. This lack of victim debriefing conflicts with knowledge that GBV elevates risks for mental health consequences like PTSD, depression (Tjaden and Thoennes, 2006; Campbell et al., 2009) and substance abuse (Kilpatrick et al., 1997). Best practices dictate that GBV reporting platforms should connect users with information and access to support given the empirical links between victimisation and psychological distress.

Finally, only around half of the GBVxTech we reviewed incorporated at least one security feature. This raises major ethical and safety concerns, particularly in cases where victims are reporting intimate partner violence when a partner could easily access their mobile phone or computer and retaliate (Freed et al., 2018). Therefore, security options (e.g., passwords or 'quick escapes') should be implemented in every app or website created for the purpose of documenting GBV incidents.

Recommendations

Whilst the GBVxTech we reviewed utilise *some* of the best practice interview principles which have been scientifically developed and tested for interviews in criminal justice contexts, we found that many of the technologies diverge from recommended minimum best practise standards for obtaining accurate and complete accounts. Digital evidence, like text messages and video recordings, have been permitted in GBV prosecutions, establishing precedent for admitting documentation from technology platforms (Hlavka and Mulla, 2018; Glasbeek, 2021). However, our findings reveal gaps in incorporating research-based memory retrieval strategies and ethical issues. Given the investigative and legal potential of these tools, further research should examine how to optimise memory recollection, ensure data protection, prioritise user wellbeing, and better align the applications to human rights-based principles. With careful design, GBVxTech could play a significant role in empowering victims whilst advancing just legal outcomes. However, additional interdisciplinary work is needed to actualise that potential responsibly and ethically.

GBVxTech should obtain informed consent, notifying users how data will be utilised, whether and how data can be withdrawn, and outlining plans if the application is discontinued (Martínez-Pérez et al., 2015; Heydon et al., 2023). Our analysis found that around half of the applications we identified were no longer accessible, raising questions

about what happened to users' data following discontinuation. Data loss risks accountability and can compromise the investigation of incidents and prevention of future crimes. As application technology evolves rapidly, many apps become defunct due to lack of funding for updates. Developers should carefully consider long-term sustainability and have transparent data protocols in case of discontinuation. Releasing applications without data retention plans risks doing more harm than good if evidence is lost when platforms cease operation.

The potential discoverability of victim disclosures on GBVxTech raises important considerations for users and designers. First, users should be advised that the information they report could be utilised as evidence in legal proceedings. Providing users with this knowledge is an essential part of the informed consent process. Second, developers must recognise that design features, like forced-choice questions, can potentially introduce memory errors and inconsistencies, which may damage victim credibility. It is critical that applications gather accounts in victims' own words through open questions and response formats. Forced-choice options risk introducing inconsistencies that could undermine victim credibility later if the victim has to clarify answers they gave to forced choice questions. Since GBV victim testimony already faces heavy scrutiny and credibility challenges (Kelly et al., 2005), preserving free narrative is imperative.

If accounts gathered via GBVxTech are entered into legal proceedings, data authenticity and chain of custody (i.e., documentation of the sequence of handling, transfer, and storage digital evidence) will become important issues. Criminal proceedings may involve examining application metadata or obtaining sworn statements on application use. If applications allow revising responses, originals should not be overwritten, but rather preserved alongside the revised information with timestamps. Digital evidence risks manipulation, and therefore steps must be taken to better ensure data authenticity. Asking the victim the reason why they made revisions may be beneficial, as changes may otherwise imply memory unreliability at trial (Liu, 2018).

Finally, GBVxTech has immense potential to serve victims globally, but only if it is purposefully designed for accessibility across needs, resources, and contexts. The applications we reviewed would benefit from incorporating accessibility features for users with visual or cognitive impairments, such as text-to-speech and interface customisation options. Apps should partner with disabled persons organisations to incorporate accessibility best practises both in design and safeguarding features. GBVxTech should also function online, across different data bandwidths (WiFi/5G/4G/3G), across operating systems (Android, iOS, etc.), as well as offline to allow for timely documentation. Enabling offline access allows all victims to record accounts as soon as possible, benefiting evidentiary quality. Further, accessible design and clear language are crucial for GBVxTech, which likely attracts diverse users. GBVxTech should avoid legal jargon and use plain language to ensure accessibility for users with varying knowledge of GBV, the law, and reporting procedures, all of which can vary depending on jurisdiction. Our suggestion to use plain language aligns with recommended best practices for face-to-face investigative interviews (Dando and Milne, 2009; Farrugia et al., 2019). Onboard dictionaries or definitions can further aid understanding, particularly for crime classification questions, as many individuals lack awareness of distinctions between crimes like sexual assault versus sexual harassment. However, only five of the applications we reviewed offered built-in definitions. Developing a more inclusive GBVxTech platform has immense potential to

broaden access to justice globally, especially if designed intentionally for clarity and transparency through built-in support features and avoidance of context-specific terminology.

Conclusion

The #MeToo movement that ushered in an era of online disclosure revealed the widespread prevalence of sexual violence as well as the many barriers to formal reporting. As we move forward, ethically designed GBVxTech platforms can provide a safe digital space for victims to document experiences if formal channels remain inaccessible or undesirable. However, to serve both victims and justice, evidence-based practices must be implemented to maintain the accuracy of the victim's account for purposes of crime prevention and, should the victim elect to make a formal complaint, legal proceedings. By working across sectors with victims, law enforcement, service providers, and researchers, GBVxTech developers can fulfil the diverse needs illuminated by #MeToo, creating empowering technologies that ethically gather victimisation experiences whilst advancing systemic reforms.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

LS: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft,

Writing – review & editing. TB: Data curation, Formal analysis, Methodology, Project administration, Visualization, Writing – review & editing. JC: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. SR: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. HF: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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CHAPTER 4 THE KENYAN SURVIVORS OF SEXUAL VIOLENCE NETWORK: PRESERVING MEMORY EVIDENCE WITH A BESPOKE MOBILE APPLICATION TO INCREASE ACCESS TO VITAL SERVICES AND JUSTICE

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Alongside our review of GBVxTech, we explored whether online self-reporting tools could be used to document complete and accurate memory evidence; and whether this memory evidence would be preserved across time for use in future criminal justice proceedings.

Previous research has found that early initial recall attempts, even using alternative reporting methods (e.g., Self-Administered Interview), can preserve the number of correct details an interviewee recalls over time (Ebbesen & Reinick, 1998; Gabbert et al., 2009). Therefore, we investigated whether the digital reporting tool used by the Wangu Kanja Foundation (WKF) would also preserve complete and accurate memory evidence. In addition to the digital tool (MobApp) used by the WKF, we co-created an amended version of MobApp that also included behaviourally informed questions (MobApp+). MobApp+ was designed to obtain pertinent information regarding the perpetrators unique and consistent behaviours. This information would assist in behavioural crime linkage and the apprehension of prolific offenders. The authors coded and analysed whether an immediate initial disclosure using MobApp or MobApp+ preserved the amount and accuracy of memory documentation over a one-week period, in comparison to a control group with no initial recall. Recommendations are discussed in the context of the work of the WKF and other humanitarian organisations.

Addendum

1. On page 10, we mention that there is no theoretical reason why an early recall attempt would not benefit an individual who has experienced a traumatic crime (e.g., sexual violence). This is based on memory theory stating that early rehearsal and consolidation helps to preserve memory in its strongest state prior to forgetting (Atkinson & Shiffrin, 1968). Recent research regarding Australian police officers' perceptions of interviewing adult rape complainants have found the initial interview to be difficult as victims may omit or modify information that may make them lose credibility (Westera et al., 2023). For example, if the victim was under the influence of drugs at the time of the offence. Therefore, whilst an early interview may be beneficial from a memory standpoint, it may not be efficient to facilitate all disclosures. However, it should be noted that these data are from police perceptions and that empirical data investigating the completeness and accuracy of victim's disclosures is necessary to evaluate the benefit of early interviews. Additionally, we acknowledge that some individuals who have experienced a traumatic event may not consent to be interviewed immediately or be able to articulate themselves. Therefore, each individual should be able to advocate for when they would like to complete their statement. Nevertheless, alternative reporting methods may be able to facilitate more complete and accurate disclosures as they remove the social dynamics of reporting to a police officer. Therefore, self-reports or reports to a trusted non-police first responder may minimise experiences of self-blame or allow victims to complete the statement in their own time and at their own pace. Future research should explore victims' perceptions of using alternative reporting pathways and their ability to facilitate disclosure.

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Article

The Kenyan Survivors of Sexual Violence Network: Preserving Memory Evidence with a Bespoke Mobile Application to Increase Access to Vital Services and Justice

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Abstract: Police interviews gather detailed information from witnesses about the perpetrator that is crucial for solving crimes. Research has established that interviewing witnesses immediately after the crime maintains memory accuracy over time. However, in some contexts, such as in conflict settings and low-income countries, witness interviews occur after long delays, which decreases survivors' access to vital services and justice. We investigated whether an immediate interview via a mobile phone application (SV CaseStudy Mobile Application, hereafter MobApp) developed by the Kenyan Survivors of Sexual Violence Network preserves people's memory accuracy over time. Participants ($N = 90$) viewed a mock burglary and were then interviewed either immediately using MobApp or MobApp+ (which included additional questions about the offender's behaviour) and again one week later ($n = 60$), or solely after a one-week delay ($n = 30$). We found that memory accuracy one week later was higher for participants immediately interviewed with MobApp or MobApp+ compared to those interviewed solely after a one-week delay. Additionally, memory accuracy was maintained for those interviewed with the mobile application across the one-week period. These findings indicate that the mobile phone application is promising for preserving memory accuracy in contexts where crimes are reported to the police after a delay.

Keywords: gender-based violence; sexual violence; Kenya; memory; behavioural crime linkage; access to justice

1. Introduction

Statements and testimony given by witnesses, which include that of victim survivors and bystanders (e.g., the victim's family, community members), are vitally important in criminal investigations [1]. The information they provide often includes a description of the perpetrator's physical appearance and behaviours, which can aid in perpetrator identification and provide leads in securing and interpreting forensic evidence [2]. However, due to demands on police time and other resource constraints, there are often lengthy delays between the crime and when the police can gather statements from witnesses [3,4]. The length of the delay can affect a witness' ability to recollect, or recall, information about the crime. Research has found that recall is optimal immediately after a witnessed event; but, as the delay between the event and the first recall attempt increases, the number of correct details recalled decreases [5,6]. However, research has found that the sooner a witness is interviewed, the fewer details that they will forget about the crime over time [3]. This matters because a witness will provide statements several times over the course of justice

proceedings, such as recalling the crime to first responders (e.g., human rights defenders, community health volunteers, police, medical personnel), criminal investigators, and jurors in court. Thus, a relatively early interview can preserve the witness' memory for longer, leading to more accurate memory evidence over time.

Interviewing witnesses soon after a crime, however, is challenging even in the best of circumstances (e.g., when a police station, well-trained interviewers, and a secure environment are available) [7]. Interviewing in sexual violence cases is especially difficult in conflict settings and contexts where insufficient resources are available for investigations and survivors are stigmatised, such as Kenya [8]. To overcome these obstacles, communities in Kenya are documenting sexual and gender-based violence (SGBV) incidents using a mobile application. This work is being organised by the Wangu Kanja Foundation (WKF), a Kenyan non-profit organisation that focuses on promoting prevention, protection, and response in ending sexual violence in the country. The vision of the foundation is towards a society that is safe and free from all forms of violence. The WKF convenes the Survivors of Sexual Violence in Kenya Network (hereafter the Network) that brings together survivors of sexual violence, which includes women, men, and children, to amplify their voices towards restoring their dignity and assisting survivors in accessing vital services and justice in a timely manner (e.g., police, medical, safe shelters, and other agencies that promote the safety of the victim).

The WKF has pioneered a mobile phone application (SV_CaseStudy Mobile Application, herein MobApp) to interview survivors, that allows survivors the opportunity to report and document anonymously should they wish to. Moreover, whilst anyone can utilise MobApp on their own or someone else's mobile device, currently MobApp is primarily being used by the Network, which spans across all 47 counties of Kenya. Members of the Network are sexual violence survivors who are also human rights defenders and community health volunteers, trained in a trauma sensitive manner to respond to incidents of SGBV within their community. The Network is using MobApp to interview survivors, following provision of informed consent, to obtain an early account of violations and track cases across the referral pathway (e.g., health, security, and justice mechanisms). MobApp records are currently held by the WKF; however, a survivor can access them at any point and share them with any involved parties. The WKF are hoping MobApp will be adopted in the future in Kenya by other agencies along the case referral pathway.

This study tested the efficacy of MobApp in preserving memory over time, and explored whether adapting the app to include questions that enable serial crimes to be linked lead to more comprehensive accounts from witnesses. Behavioural crime linkage (BCL) uses the principles of behavioural consistency and distinctiveness to identify patterns of behaviour across a series of crimes, which can then be attributed to a serial offender. Research has shown that this type of behavioural analysis can be used to successfully link multiple crimes committed by the same offender [9]. Therefore, we studied whether incorporating questions about the offender's behaviour increases the amount of information gathered from witnesses about offences, and the offender's behaviour in particular, which in turn can be used to facilitate the application of BCL. This is particularly important in low-resource environments like Kenya, because BCL enables investigators to solve crimes more efficiently, and thus, could prevent future crimes from occurring. In what follows, we provide an overview of (1) the Kenyan context and work being done by communities with respect to documenting sexual offences; (2) research on techniques that help prevent memory loss over time; and (3) research on the use of BCL to link serial crimes. Thereafter, the aims and an overview of the current study are presented.

1.1. Kenyan Context

Nearly 41% of women in Kenya have experienced physical or sexual intimate partner violence in their lifetime and nearly 26% have experienced it in the last 12 months [10]. Gender inequality is rampant in Kenya, which ranks 135th out of 159 countries on the Gender Inequality Index, a measure that indexes inequality between women and men in

reproductive health, empowerment, and labour market participation [11]. Further, sexual violence, which can be perpetrated against anyone, but most often is against women and girls, increases in Kenya in times of conflict, such as during postelection periods [12].

Poor data quality in Kenya makes sexual violence difficult to study. Researchers measure crime patterns using self-report surveys to gather information about incidents that, in many cases, happened long ago. Such data may not be accurate for a host of possible reasons, including forgetting, or respondents' fear of being judged, endangered, or penalised, which in turn leads to data incompleteness or inaccuracy [13]. As MobApp data is collected by human rights defenders, who are also trusted members of their communities, this potentially ameliorates some data validity concerns. For example, MobApp is widely distributed, and allows data to be gathered by survivors anonymously and relatively soon after the offence. Further, the data collected can be analysed in real time to identify emerging crime hotspots, which may prevent crime, as well as identify where vital services are needed.

1.2. Preventing Memory Failure

Best-practice interview techniques employ open-ended free recall prompts for eliciting statements from witnesses [14–16]. These prompts improve recall accuracy by allowing witnesses the opportunity to actively retrieve information from memory about the crime and freely report it using their own words. The WKF documents cases by prompting survivors to freely recall the crime. MobApp also includes specific questions about the perpetrator and the offence. Memory research suggests this may have a beneficial effect on survivors' ability to remember the crime over time during criminal investigations and judicial proceedings. This is vitally important in contexts where reporting to the authorities is often delayed (e.g., rural areas, times of conflict) and where the adjudication process is lengthy. In Kenya, crimes are seldom reported, and adjudications are rare, and as such, MobApp could turn the tide. Drawing on research about the vital role of an early interview in preserving memory [3], researchers recently found that allowing witnesses to write down their memories of a crime relatively soon afterwards preserves memory accuracy over time [3,17,18]. To our knowledge, there has been only one study investigating whether recalling a crime by recording it with a mobile application preserves memory. This app was developed by academic researchers in Australia, and they conducted an experimental investigation that found that research participants who used it to provide an initial account remembered more accurate information over time [19]. The present study sought to replicate and extend this previous research, working closely with the community Network.

1.3. MobApp and Behavioural Analysis

Kenya has a relatively low prosecution rate, particularly in cases of sexual violence, partly owing to resource constraints [20]. The use of a mobile application to gather information about an offender's behaviour could be a relatively low-cost, yet effective, method to gather intelligence about criminal perpetrators. This information could then be used to identify a behavioural pattern of offending across a series of offences based on an offender's *modus operandi* (MO), which allows for linking crimes committed by the same offender and more effectively identifying serial perpetrators. In the Global North, research has found that information about consistent and distinctive perpetrator behaviours established through the victim's description of the offence to the police can be used to link crimes committed by the same perpetrator [21,22]. More recent work indicates that these techniques are promising in the Global South in helping the police to solve serial offences [23,24]. While the use of BCL is the focus of this paper in terms of understanding how the information collected by witnesses could be used for the purposes of behavioural analysis, it is also worth noting that information about offending behaviour can also be used in other ways, such as implementing situational crime prevention strategies to protect communities [25], which uses offence data to identify high-risk circumstances and determine preventative

measures that may limit crime opportunities [26]. Mobile applications have previously been piloted in Kenya to gather data for situational crime prevention purposes with some success [8]; for instance, Oduor et al. (2014) found good will among the population to using apps to report crimes anonymously. For the interested reader, Aransiola and Ceccato (2020) provide further information about the use of modern technology for situational crime prevention, the exploration of which is beyond the scope of this paper [27].

In the present study, we investigated whether asking witnesses questions about the perpetrator's behaviour increases the total amount and accuracy of information reported about the crime. Specifically, drawing on *spreading of activation* theory, we hypothesised that when witnesses are asked to recall behaviourally relevant details about the perpetrator, it will strengthen their memory not only for behaviourally relevant details, but also for other aspects of the crime. Spreading of activation theory states that memories exist in networks [28]. When one node of the network is activated, it triggers the activation of other related information in memory. This leads to a strengthening of related memories. Therefore, we predicted that witnesses who are asked for behaviourally relevant information would recall more information about the perpetrator's behaviour and the crime overall than their counterparts.

1.4. Overview of Present Study

The present study investigated whether an immediate recall attempt made via MobApp or MobApp+ preserves memory accuracy over a one-week period in comparison to a control group. We used a mock-crime experiment paradigm wherein participant witnesses watched a mock-crime video and then had their memory of the crime tested one week later. This approach is appropriate for our purposes because it allows for measuring memory accuracy. A field test using real crime reports would not allow us to test our predictions because the accuracy of the witnesses' accounts could not be established as ground truth would be unknown. Our design included two intervention conditions and a control condition to which our participants were randomly assigned. Participants in our intervention conditions provided an initial account of the crime using either MobApp alone, or MobApp+, which is an enhanced version of MobApp that has the same questions as MobApp plus ones about the offender's behaviour before, during, and after the offence. Participants in the intervention conditions returned one week later to give another recall account of the crime. Participants in the control condition did not provide an initial account using an app, but rather recalled the crime for the first time one week later. The control group parallels usual practice in Kenya and other countries around the world with regard to sexual offences, whereby survivors frequently provide a delayed account to the police [3,4]. Our participants were recruited from the University of Birmingham in the United Kingdom (UK), owing to the pandemic and the urgent need to collect data quickly to inform practice in the field. Elections are occurring next year in Kenya, and MobApp, if it is effective, will be an especially important tool, considering that sexual violence increases during these periods [12]. Further tests in the field with the Network are planned using the outcome of this trial.

2. Methods

2.1. Design

We employed a 3-interview condition (MobApp, MobApp+, no initial recall) \times 2 time point (immediate, one week) mixed design, with interview condition as the between groups factor, and time point as a within-subjects factor for those in the MobApp and MobApp+ conditions. Participants were randomly assigned to one of three initial interview conditions (MobApp, MobApp+, no initial recall). Participants in the MobApp condition answered questions immediately after the crime that would normally be asked of users of MobApp in Kenya. Those in the MobApp+ condition answered the same questions, but they were also asked questions about the offender's behaviour before, during and after the crime. Those

in the no initial recall condition did not have an interview immediately after the crime. All participants returned after a one-week delay and were asked to recall the mock crime.

The dependent variables included the total number of details recalled, recall accuracy rate, number of correct details recalled, number of incorrect details recalled, number of behaviourally relevant details (both correct and incorrect) recalled, recall accuracy rate of behaviourally relevant details, and confabulations (e.g., details not present or relevant to the mock-crime video), with the data conditioned on time point (immediate versus one-week later).

2.2. Participants

Participants ($N = 90$; M age = 21.84; $SD = 5.46$; age range 18–49 years; $n = 64$ female) were voluntarily recruited using University of Birmingham Sona Systems Research Participation Scheme (RPS, $n = 66$) and the online recruitment platform Prolific ($n = 24$). Participants were blind to their condition allocation ($n = 30$ participants per condition) and participants were either remunerated 2.5 course credits or £7.60 p/hr for their time. To be eligible to participate in the current study, participants had to be over the age of 17 and fluent in English. Ethics was obtained from the University of Birmingham's STEM Research Ethics Committee. All participants provided informed consent prior to study participation.

2.3. Procedure and Materials

Each participant completed the task independently, using the online survey platform Qualtrics. Participants were initially asked to provide demographic information regarding their age, gender, and ethnicity, before receiving written instructions that they were about to watch CCTV footage of a non-violent crime (the video was of a mock burglary). Participants were explicitly informed to pay careful attention to the video as they would be asked questions about it later. The video depicted a non-violent mock crime lasting 3 min and 43 s, where one man burglarised a house, taking household items (e.g., laptop and headphones) when no one was home. Burglary was considered an appropriate crime type to test our hypothesis, as it is less traumatic than sexual violence and many sexual violence crimes have been orchestrated in combination with burglaries [29]. The video was constructed to provide details relevant to BCL [30,31], as informed by Meenaghan et al. (2018) and Tonkin and Weeks (2021). To link crimes, analysts look for consistent and distinctive behaviours exhibited by the perpetrators when they select, enter, search, and exit a property. Thus, the video was constructed in a manner to provide details to recall in these areas (e.g., depicting the perpetrator carefully searching the property without destruction).

Following the video presentation, participants were provided instructions corresponding to their condition allocation. All participants initially completed a distractor task that asked them to count back in threes from 332 for 60 s.

2.3.1. Control Group

Following the distractor task, the control group were thanked for their participation and were reminded that there would be a follow-up session one week later.

2.3.2. MobApp

Within each recall survey, participants were instructed that they should provide an accurate account where possible, and to put "I don't know" if they were unsure to avoid guessing. Participants first completed a free recall text box, instructing them to recall what they saw in the video. No time or character limits were placed onto responses. They were then presented with questions from the WKF MobApp that has been adapted to be applicable for a burglary. Questions prompted the participant about any details they may not have remembered in the free recall. The seven questions asked participants what type of crime was portrayed in the video, what date and time of day they witnessed the event, where the event took place, if they knew the perpetrator, and how many perpetrators were involved.

2.3.3. MobApp+

The MobApp+ survey was the same as the MobApp survey but was extended to include behavioural items [30,31]. Like the MobApp condition, MobApp+ initially asked participants to freely recall what they could remember in a text box. Following the free recall responses, participants received 11 questions, asking them to describe the crime scene location, an estimate of the time of day of the incident, and whether any other witnesses were at the scene of the incident. The questions informed by BCL were split into three distinctive stages. The first stage included how the perpetrator selected and entered the target or property. These questions asked participants to describe the events in the order that they occurred, whether there was any evidence that the perpetrator was selecting a target or property, and how the perpetrator entered the property. The second stage referred to what occurred whilst the perpetrator was inside the property, committing the offence. Questions asked how the perpetrator located items they stole from the property, and how the perpetrator searched the property. The final stage of questions focused on how the crime scene was exited, whether there were any distinctive or memorable behaviours of the perpetrator, and if and how the perpetrator showed forensic awareness.

2.3.4. One-Week Recall

One week after their initial recall, participants were sent a follow-up survey link on Qualtrics. This survey asked them to freely recall what they could remember about the video they had previously witnessed into the text box provided. Participants completed their second recall task within 26 h of their original time slot. All participants were then thanked for their participation and debriefed, told the purpose of this study, and reminded they were able to withdraw their data within 72 h of participation.

2.4. Coding and Measures

Both time points (immediate, one week) were coded for the total number of correct and incorrect details as well as the total number of details recalled, recall accuracy rate (proportion of correct details recalled), number of confabulations, number of behaviourally relevant details recalled (correct and incorrect), and recall accuracy rate of behaviourally relevant details (proportion correct of the total number of behaviourally relevant details recalled).

Participants' recall was coded into details using a standardised template informed by prior research [32]. Recall was categorised into details pertaining to Action (A), Person (P), Object (O), or Setting (S). For example, in the mock-crime video, 'a white male leaving a property' was coded as: 'white (1-P) male (1-P) leaving (1-A) property (1-S)'. This would equate to four total details recalled. A sum of all details mentioned correct and incorrect formed a participant's total recall. Each detail was further coded for whether it was present within the mock-crime video (correct), was present within the mock-crime video and was not recalled correctly (incorrect), or was not present/relevant to the mock-crime video (confabulation).

What was considered a behaviourally relevant detail was informed by Meenaghan et al. (2018) and Tonkin and Weeks (2021), including behavioural details about how the perpetrator selected, entered, searched, and exited the property. A behaviourally relevant detail was defined as any information pertaining to an action the perpetrator committed or context to said action. For example, 'the man (1-P) rode off (1-A) on a bike (1-O)' was coded as three behaviourally relevant details. Subjective responses, such as 'house itself was worth a bit of money', were not coded.

2.5. Inter-Rater Reliability

To assess inter-rater reliability, 18 participant responses were randomly selected in each condition and coded independently by two researchers. Cohen's Kappa was computed for the measures displayed in Table 1. This analysis indicated acceptable levels of (moderate

to high) inter-rater reliability for each variable. Discrepancies were resolved through discussion prior to analysis.

Table 1. Cohen's Kappa Assessing Inter-Rater Reliability.

	Total Details			Behaviourally Relevant	
	Correct	Incorrect	Confabulation	Correct	Incorrect
Cohen's kappa (κ)	0.90	0.91	1.00	0.90	0.86
<i>p</i> -value	<0.001	<0.001	<0.001	<0.001	<0.001

Table note: A *p*-value < 0.001 indicates that the level of inter-rater agreement observed is different from what would be achieved by chance alone.

3. Results

3.1. Recall at One Week

Table 2 displays results of one-way ANCOVAs that were conducted to compare each dependent variable across conditions at one-week recall, using word count at one-week recall as a covariate to control for output. An ANCOVA compares the means across the conditions to assess whether they are statistically different, whilst controlling for a variable that may confound results (e.g., total amount of output in words). A significant main effect of recall accuracy rate by condition was found, $F(2, 43) = 3.79$, $p = 0.040$, $\eta^2 p = 0.07$. Participants in the MobApp+ condition demonstrated the highest recall accuracy rate, followed by the MobApp condition and the control condition with a medium effect size (see Table 2 for descriptive statistics).

Table 2. Descriptive and Inferential Statistics for One-Way ANCOVAs.

		Condition			<i>F</i>	<i>p</i>
		MobApp+	MobApp	Control		
One-Week Recall	Total Recall	35.17 (3.70)	37.53 (4.35)	33.20 (4.35)	1.18	0.312
	Correct Recall	33.83 (3.49)	35.80 (4.16)	30.53 (3.92)	2.28	0.109
	Incorrect Recall	1.33 (0.46)	1.73 (0.46)	2.67 (0.61)	3.30	0.042 *
	Accuracy Rate	0.97 (0.01)	0.92 (0.03)	0.85 (0.05)	3.79	0.040 *
	Behaviourally Relevant Accuracy Rate	0.96 (0.01)	0.93 (0.03)	0.84 (0.05)	2.59	0.068

* $p < 0.05$.

Orthogonal comparisons were conducted to compare the two MobApp conditions (MobApp and MobApp+) against the control condition, and to compare the two MobApp conditions against one another. These planned comparisons revealed a significant difference in recall accuracy rate between both MobApp and MobApp+ combined in comparison to the control group, $F(1, 87) = 5.32$, $p = 0.023$, $\eta^2 p = 0.06$. There was no significant difference in recall accuracy rate between MobApp and MobApp+ ($p = 0.170$). Therefore, participants given an initial interview had an increased recall accuracy rate in comparison to no initial recall at one-week final test (see Table 2).

A significant main effect of total number of incorrect details recalled by condition was obtained, $F(2, 86) = 3.30$, $p = 0.042$, $\eta^2 p = 0.07$, a medium effect size for condition (see Table 2 for descriptive statistics). Planned comparisons indicated a significant difference in the number of incorrect details recalled in the MobApp conditions combined in comparison to the control condition, $F(1, 87) = 6.65$, $p = 0.012$, $\eta^2 p = 0.07$. There was no significant difference in the number of incorrect details recalled between MobApp+ and MobApp ($p = 0.784$). Therefore, an initial recall attempt reduced the number of incorrect details recalled at one-week final test. For all other inferential statistics and descriptive statistics refer to Table 2.

3.2. MobApp Conditions Compared: Recall over Time

Additional analyses examined whether being questioned about the behaviour of the offender within the phone application increased the recall accuracy rate of reporting or the number of correct details recalled one week later. We conducted mixed ANCOVAs (2 time point \times 2 MobApp interview conditions) for all dependent variables, with word count for each time point entered as covariates; results are displayed in Table 3. A mixed ANCOVA compares whether the means differ between conditions and/or across the two time points, as well as whether the use of MobApp differentially affects recall performance depending on delay.

Table 3. Descriptive and Inferential Statistics for Repeated-Measures ANCOVAs on each of the Dependent Variables.

	MobApp	MobApp+	Condition	Time	Condition \times Time
Total Recall					
Immediate Recall	47.93 (4.51)	78.10 (6.46)	$F(1,56) = 0.68$ ns	$F(1,56) = 9.76$ **	$F(1,56) = 0.00$ ns
One-Week Recall	37.53 (4.35)	35.17 (3.70)			
Correct					
Immediate Recall	45.90 (4.35)	75.73 (6.27)	$F(1,56) = 0.13$ ns	$F(1,56) = 8.32$ **	$F(1,56) = 1.41$ ns
One-Week Recall	35.80 (4.16)	33.83 (3.49)			
Incorrect					
Immediate Recall	2.03 (0.49)	2.37 (0.45)	$F(1,56) = 1.19$ ns	$F(1,56) = 4.26$ *	$F(1,56) = 2.58$ ns
One-Week Recall	1.73 (0.46)	1.33 (0.46)			
Accuracy Rate					
Immediate Recall	0.96 (0.01)	0.97 (0.01)	$F(1,56) = 2.45$ ns	$F(1,56) = 1.13$ ns	$F(1,56) = 0.36$ ns
One-Week Recall	0.92 (0.03)	0.97 (0.01)			
Behaviourally Relevant Accuracy Rate					
Immediate Recall	0.96 (0.01)	0.97 (0.01)	$F(1,56) = 1.78$ ns	$F(1,56) = 2.04$ ns	$F(1,56) = 0.13$ ns
One-Week Recall	0.93 (0.03)	0.96 (0.01)			

* $p < 0.05$. ** $p < 0.01$.

Significant main effects of time were found for total details recalled ($F(1, 56) = 9.76$, $p = 0.003$, $\eta^2 p = 0.15$), total correct details recalled ($F(1, 56) = 8.32$, $p = 0.006$, $\eta^2 p = 0.13$), and total incorrect details recalled ($F(1, 56) = 4.26$, $p = 0.044$, $\eta^2 p = 0.07$), with mean recall decreasing over time. Thus, both the number of correct and incorrect details recalled decreased as a function of time. No significant main effects of time were found for the recall accuracy rate, or for the recall accuracy rate of behaviourally relevant details. No significant main effects of condition or interaction effects were found for any of the dependent variables. Therefore, the two versions of MobApp were comparable regarding recall across time points.

4. Discussion

We tested whether MobApp, a mobile application pioneered by a community Network in Kenya to document crimes, slows the rate of forgetting. We found that a recall attempt given immediately after witnessing a mock crime using MobApp or MobApp+ preserved the memory recall accuracy rate over a one-week period and led to increased recall accuracy in comparison to a control group. These findings are vitally important, as they indicate that MobApp can preserve memory recall over time. Memory preservation can improve the ability of survivors in communities with low resources to access justice. This is the first study to evaluate the efficacy of MobApp as a tool that preserves memory over time and that elicits information about the suspect's behaviour for BCL purposes. Next, we will discuss these findings in turn.

4.1. Memory Preservation over Time

Regardless of whether MobApp included prompts for the survivor to report information about the perpetrator's behaviour, the recall accuracy rate did not decrease over time. Recall accuracy was high immediately after the crime and one week later for those who used MobApp to give an immediate initial account. This finding is in line with previous research findings that an early initial recall attempt preserves memory accuracy across time [3,19]. Ours was the first study to extend these findings to the Kenyan community initiative MobApp. Previous research has found that participants are frequently accurate when they can freely recall details [33]. We found that an initial recall attempt using the community driven MobApp or the modified MobApp+ preserved recall accuracy rates across time, which means in practice that the community can use MobApp to gather accurate and essential details that can further investigations and prosecutions.

While the rate at which participants were accurate did not decrease over time for those who used the mobile application, the total number of details recalled did decrease over time. Specifically, participants in the MobApp condition and the behaviourally enhanced MobApp+ condition recalled more details in total (both correct and incorrect) in their initial recall attempt compared to one week later. These results do not replicate what is typically found in research on the benefit of an early initial recall attempt [3,34]. Previous research has found that participants who gave an early initial recall account maintain a similar number of total details recalled at initial test and final test [3,34]. The current research may not have replicated these findings for several reasons. First, over the one-week delay period, participants may have become increasingly stringent about the memories they reported, which in turn served to decrease the amount of information they reported, and this helped them maintain accuracy over time [33]. Put differently, witnesses may apply a strict reporting criterion, which preserves accuracy, but this comes at the expense of the completeness of the account [35]. Alternatively, the initial recall test prompted participants to freely recall the crime, and then prompted participants to recall information about the perpetrator's behaviour. In contrast, the final recall test included only a free recall prompt. This may have suggested to participants to report the same information as they had reported on the initial free recall account, leading them to leave out behavioural details on the final test that they would have reported had they been prompted for it.

Finally, this research had to be conducted using online survey platforms owing to the pandemic-related UK stay at home orders. This limited our ability to establish rapport with our participants, which is important in making people feel comfortable and motivated to disclose information [36]. On the ground in Kenya, a member of the Network collects the survivor's testimony in person using MobApp. As a result of this they can establish rapport with the survivor, which may lead to a greater number of details being disclosed than if the data were collected online.

We found that MobApp and MobApp+ led to a higher rate of recall accuracy one week later in comparison to the control group, which did not have an initial recall attempt. The control group represents the situation in most countries, wherein survivors of violence often delay their reporting to the police. Our work shows an initial recall attempt using a mobile application immediately after the crime can preserve accuracy, which is vital if survivors elect to report to the police after a delay. Participants in the MobApp+ condition did have the highest accuracy rates on average, albeit this difference was not statistically significant. Thus, we tentatively conclude that MobApp+ may potentially lead to the highest rate of accuracy over other known approaches when used by community actors documenting incidents of violence.

4.2. Behaviorally Relevant Details

The use of the mobile applications also led to increased recall accuracy for behaviourally relevant details compared to the control condition, although the difference was not statistically significant. Given these results, we would encourage community organisations to prompt survivors for behaviourally relevant details. First, doing so does not decrease accu-

racy. Second, behaviourally relevant details can be used to link crimes together, helping to provide evidence and aid investigations to bring serial offenders to apprehension, thus preventing further offences [21–24]. Additionally, and as noted above, behaviourally relevant details can also be important for other types of analyses, such as indicating geographical and temporal crime patterns to inform situational crime prevention strategies. In contexts such as Kenya, where there are limited resources, this information may be strategically important for developing preventative measures, such as increased police or community surveillance at certain times or in certain locations [37].

4.3. Limitations and Future Directions

We need to learn more about the experiences of communities who are using mobile applications to document crimes and in wide ranging contexts. The present study was necessarily limited to an experimental paradigm that tested people's ability to remember a mock crime over a one-week period. In real world cases there are often delays of months or years in between reporting [3,4]. Further, the witnesses' duration of exposure to the culprit in real world crimes, including rape, is relatively long compared to the exposure time used in the present study [38]. Delay and duration of exposure can affect how strong the witness' memory is of the crime. However, there is no theoretical reason to expect that remembering would be better in the control compared to the MobApp conditions depending on memory strength. Further, under conditions where memory is initially exceptionally weak, or exceptionally strong, using an app would have less of an effect on preserving memory over time.

MobApp is used predominantly in Kenya to document cases of SGBV. However, for ethical reasons, the mock crime we used was not an incident of SGBV. There has been debate about the impact of traumatic events (e.g., SGBV) on memory, with some researchers concluding that incidents of trauma are remembered less vividly than other types of events [39], while others maintain that traumatic events are remembered in greater detail than other events [40]. Nevertheless, all other things being equal, we know of no theoretical reason why trauma would diminish the benefits of an early interview in preserving memory.

Additionally, whilst the current study did not investigate memory for SGBV within a Kenyan sample, the results likely generalise to Kenyans. The effect of an initial recall attempt has been found in several countries (e.g., Spain, Mexico, the Netherlands, Australia) [41]. Therefore, there is good reason to expect that the findings generalise to people in Kenya. Finally, in Kenya, MobApp provides an opportunity to amplify survivors' voices. Survivors are often silenced by the culture of stigma and shame surrounding SGBV in Kenya [42], and this frequently leads to survivors not reporting these crimes to the police. For survivors who do decide to report, the quality of their statements given to the police may be compromised because the police have insufficient resources to support the training of officers to conduct interviews using evidence-based practice [8]. In Kenya, the forms used to record the crime include little space to record the survivor's account. Further, a culture of impunity that silences many victims currently reigns in Kenya [43]. Thus, an ongoing issue is the need to enable survivors to report in an effective manner the crimes that occur against them. The Network members are trusted within their communities, and this leads to increased disclosure [44,45]. Therefore, providing Network members with a tool that documents cases and preserves recall accuracy over time is a positive development.

The use of human rights defenders to document incidents of SGBV in Kenya helps to overcome some of the obstacles that preclude survivors from accessing a mobile application. In Kenya, currently 18% of the population are illiterate [46]; thus, it is crucial in many cases that a Network member is available to aid in the documentation the case. MobApp currently does not handle voice recordings, and even if it did, this would require additional data usage, which would be expensive and cost prohibitive for many people in Kenya. Whilst almost everyone in Kenya owns a mobile device, only an estimated 40% have access to the Internet [47]. Therefore, arming human rights defenders with mobile devices to docu-

ment the survivor's account is essential. Our current research is evaluating methods to train communities using MobApp to document cases using best-practice interview techniques. This is critical because community organisations are often the first responders and the ones to obtain the survivor's account. The quality of an initial account plays a crucial role in case progression and criminal justice proceedings [48,49]. If the account is taken using best practice, this can increase the likelihood of a successful prosecution. This research is vital because research has found that it is difficult to conduct an interview, even when interviewers have specialist training [50]. In view of this, our current co-developed research agenda seeks to build the capacity of the WKF to document cases through sustainable training packages that are freely available and instil best-practice interview techniques using a survivor-centred approach that seeks to minimise re-traumatisation during the process.

Finally, the use of mobile applications by communities to document crimes is likely to rise, particularly in the times of COVID-19, wherein police stations can be even harder to reach owing to lockdowns and curfews [44]. Thus, research on the impact of such apps on memory accuracy is critical. There is evidence to suggest that communities are receptive to using apps like MobApp. In Kenya, Oduor et al. (2014) examined the use of mobile applications as a tool for situational crime prevention. The mobile application they investigated allows users to receive crime updates, report crimes, search for lost friends, contact the police, and locate crime hotspots. Mobile applications of this kind may be particularly important in contexts like Kenya, wherein survivors may be reluctant to report sexual offences to the police owing to fear and stigma, or because they cannot travel to a police station. In Oduor et al. (2014), participants reported that they would likely use an app to report crime, as it enables reporting of the incident anonymously without the need to go to the police station. Given this context, MobApp may prove to be especially valuable.

5. Conclusions

We found that MobApp can preserve recall accuracy over a one-week period. This community-developed tool is also effective in the documentation of information about the perpetrator's behaviour, which can be vital in linking serial crimes. Our results are promising for low-resource contexts like Kenya, where communities are seeking to document crimes to illustrate and understand the nature of the violations that are occurring. Our research indicates that MobApp preserves memory accuracy over time, which is vital considering that crimes are infrequently reported, and that among those that are reported, there is often a long delay between the crime and adjudication.

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CHAPTER 5 TRAINING NON-POLICE FIRST RESPONDERS TO USE BEST-PRACTICE INTERVIEWING SKILLS WHEN DOCUMENTING CASES OF SEXUAL AND GENDER-BASED VIOLENCE IN KENYA

Chapter 5 is under review for publication at the peer-reviewed journal *Applied Cognitive Psychology* with the following author list: Stevens, L. M., Walsh, R., Kohl, A. T., Kuhn, E., Kanja, W., Rockowitz, S., Cosnett, W., Kim, E., & Flowe, H. D.

Alongside digital reporting methods, victim-survivors of gender-based violence (GBV) are also reporting to non-police first responders (e.g., community actors, non-governmental organisations); such as the Wangu Kanja Foundation (WKF) to document their cases (Rockowitz et al., 2021; 2024). However, these first responders are not trained to document statements from victim-survivors in a manner that would stand up in criminal justice proceedings. Therefore, we co-designed an innovative interview training programme with the WKF to teach them minimum standards of best-practice interviewing (Benson & Powell, 2015; Foreign Commonwealth and Development Office, 2017; Ministry of Justice, 2022; Murad Code, 2022). We evaluated whether the interview training package improved participants' knowledge of best-practice interviewing principles and their interview skill using mock interviews. We discuss the promising findings of the training programme, alongside recommendations for future research and policy implications globally, to improve memory documentation from victim-survivors of GBV by first responders.

As this manuscript is under review it is masked for blind review purposes. Additionally, we provide all ethics information and assumptions statistics within an appendix, as this was not required by the journal (see Appendix 5.1-5.5).

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5.1 Abstract

Survivors of sexual and gender-based violence (SGBV) face many challenges, especially in humanitarian emergencies and in contexts where policing resources are highly limited. Rigorous initial documentation of SGBV incidents following best-practice interview principles can facilitate later recall. This can assist with criminal justice proceedings, whilst also centring survivor needs. Researchers have found that training is required to conduct SGBV interviews using best practice. However, these studies investigating interview training programmes have largely focused on police professionals. Instead, there is an urgent and growing need to evaluate training programmes with non-police professionals, such as human rights defenders and community actors, who are often first responders to survivors of SGBV. This research investigated the effectiveness of an innovative interview training programme in improving non-police professionals' use of best-practice interviewing skills. Participants took part in the interview training package in Kenya and were evaluated using a pre-and post-training design, including a written test (Study 1, $N=47$) and a mock interview (Study 2, $N=37$). Study 1 found improvements in participants' understanding of best-practice interviewing. Study 2 found that participants displayed more rapport-building behaviours and provided more ground rules instructions post-training, suggesting the training package improves participants' interview skills. However, we did not find a greater use of open questioning strategies post-training. Taken together, these results provide promising leads for future research as well as evidence on strategies that can be used to train non-police professionals in humanitarian and other low-resource settings.

Keywords: *Sexual and Gender-Based Violence, Interview Best-Practice, Interview Training, Kenya*

5.2 Training Non-Police First Responders to use Best-Practice Interviewing Skills when Documenting Cases of Sexual and Gender-Based Violence in Kenya

Sexual and gender-based violence (SGBV) affects 1 in 3 women globally within their adult lifespan (World Health Organization, 2021). In cases of SGBV, statements given by the victim-survivor (hereafter survivor) during interviews with the police are frequently the primary, and often only, source of evidence in the case (Kebbell et al., 2007; Lees, 2002; Tetreault, 1989). Higher-quality memory documentation via interviews is related to better case outcomes (Fisher et al., 1987), including increased rates of successful prosecutions (Pipe et al., 2013). Thus, it is critical to document this memory evidence using evidence-based interview techniques, so that it can be used throughout future criminal justice proceedings. Researchers have found that a strong initial interview using best-practice interviewing principles (e.g., ground rules administration and use of open questions) can protect memory evidence from being forgotten (Gabbert et al., 2009; Stevens et al., 2022) and from post-event contamination (Gabbert et al., 2012).

However, best-practice interviews are difficult to conduct and require specialist training to be executed effectively (Wright & Powell, 2006). To date, interview training research has largely focused on training members of police forces to conduct investigative interviews (Benson & Powell, 2015; Powell et al., 2010; 2016). There are contexts, however, where survivors disclose incidents to non-police professionals (e.g., community actors and/or human rights defenders), instead of making a formal police complaint. This is due to many factors, including community stigma, family shame, or because the survivor fears the perpetrator will retaliate (Shaibakova, 2020). This is the case in Kenya, where victimisation surveys found that 34% of women have experienced physical violence and 13% have experienced sexual violence in their adult lifetime, predominantly perpetrated by their current or former partners

(Demographic and Health Surveys, 2023). Yet few if any cases ever make it through criminal justice proceedings to reach a conviction (Rockowitz et al., 2024). This is due to an insufficient criminal justice infrastructure to support investigations and prosecutions (e.g., limited training and other professional development resources for police officers, Oduor et al., 2014). Additionally, there are also many instances where the offender is a member of the police or security forces, making it impossible for the survivor to report the crime to the police (Odhiambo, 2017). Therefore, survivors may present to non-governmental organisations (NGOs), such as the Wangu Kanja Foundation (WKF) and the Survivors of Sexual Violence in Kenya Network (hereafter referred to as the Network), to document their cases and seek psychological support and safe shelter (Rockowitz et al., 2024). In the current study, we implemented an innovative interviewing training programme with the WKF and the Network; and evaluated the effectiveness of this training in improving participants' knowledge and skills in documenting a case of SGBV.

To this end, we will synthesise interview training protocols for humanitarian contexts and how these may be applied in Kenya, before summarising recent literature on best-practice interviewing principles for survivors of SGBV, and previous research on interview training packages that informed the current training.

5.2.1 International Protocol on the Documentation and Investigation of Sexual Violence in Conflict

Current research has prioritised training police interviewers in the Global North (Benson & Powell 2015; Lawrie et al., 2021). Whilst this research is important, there is an imminent need to train first responders to SGBV in low- and middle-income countries (LMICs) where SGBV is rife, such as in Kenya (Demographic and Health Surveys, 2023). To our knowledge, ours is the first study to investigate training non-police community actors in humanitarian

contexts. Researchers have found that conducting interviews and interview training is challenging in the most ideal of circumstances, as it requires extensive practice and follow-up sessions (Lamb et al., 2002). This is exceedingly difficult in contexts where police are under-resourced, understaffed, and under-trained (Odour et al., 2014) – such as in LMICs, conflict/post-conflict zones, and displaced communities. These areas commonly lack criminal justice resources, which leads to a culture of impunity surrounding SGBV (Smith et al., 2019). To overcome this issue, the U.K. Foreign, Commonwealth & Development Office (FCDO) developed an International Protocol on the Documentation and Investigation of Sexual Violence in Conflict (hereinafter referred to as the Protocol; FCDO, 2017). The Protocol provides instructions on how to document and investigate cases of SGBV using best practice interviewing techniques that can support prosecutions of SGBV cases in conflict settings. One strength of the Protocol is its intended flexibility in terms of the users for which it has been designed. It can be used by police and non-police first responders and is designed to be adapted to any cultural context. However, whilst the Protocol provides much-needed resources for training first responders to SGBV, there is currently limited systematic evaluation of its effectiveness (Smith et al., 2019). Therefore, the current research adapted the Protocol alongside best-practice interview principles (Ministry of Justice, 2022) to deliver a training package to non-police professionals in Kenya.

The training package we developed was to aid first responders in documenting a survivor's statement of the offence (i.e., their memory of the offence, which in turn becomes evidence). It did not train community actors to obtain investigative details as they are not criminal justice agents. In any case, there are many instances where documentation is paramount in contexts where survivors cannot and/or will not formally report the crime. Therefore, NGOs and community actors may be the only individuals systematically

documenting information from survivors. This data is useful to demonstrate the prevalence of offences and their characteristics, as well as to identify crime hotspots to inform prevention strategies (Chiu et al., 2021).

5.2.2 Non-Police First Responders in Kenya

This training package was initially delivered in Kenya due to the high prevalence of SGBV, particularly during election seasons (see FIDH, 2021; Odhiambo, 2016). Additionally, our research group has a long-standing relationship with the WKF and the Network (see Flowe et al., 2020 for background), which allows us to collaborate as trusted partners in co-designing this project. Furthermore, in many countries, such as Kenya, SGBV survivors lack access to medical, legal, and psychological support, and feel discouraged from reporting the offences perpetrated against them (Owiti et al., 2018). In Kenya for example only 2% of cases reported to the WKF over a four year period concluded in a conviction (Rockowitz et al., 2024). Moreover, survivors frequently suffer from physical injuries, trauma and stigmatisation, which can have severe consequences for their physical and mental health (Owiti et al., 2018). These challenges persist in contexts where there is insufficient infrastructure to support crime prevention and the proper documentation of evidence to facilitate investigations and prosecutions (Odour et al., 2014). In response, many community organisations, such as the WKF, a 19-year-old registered NGO, and the Network, which is composed of survivors and was convened by the WKF, work to document survivors' experiences and assist them in navigating the criminal justice system (Rockowitz et al., 2024).

The WKF and the Network, in partnership with academics at the University of Birmingham, have developed a mobile phone application (SV_Case Study Mobile Application, hereinafter referred to as MobApp) to document instances of SGBV (see Stevens et al., 2022). MobApp allows survivors to document their memory evidence imminently post-

incident in a manner that preserves this memory evidence over time for use in future criminal justice proceedings (Stevens et al., 2022). However, the quality of the information obtained within MobApp is still reliant upon the interviewer who conducts the documentation. Therefore, members of the Network need to be trained to interview survivors of SGBV using best practice that would prevent the documentation from being disputed in future criminal justice proceedings.

5.2.3 Evidence-Based Interviewing Techniques

Research into investigative interviewing techniques has led to the development of best-practice guidelines for interviewing survivors of SGBV, including the Achieving Best Evidence guidelines in the United Kingdom (Ministry of Justice, 2022). These guidelines are supported by both research evidence and cognitive theory (Fisher & Geiselman, 1992, 2018; Lamb et al., 1998; 2008; Milne & Bull, 1999). However, current guidelines for interviewing survivors of SGBV are lengthy and intensive (Ministry of Justice, 2022; Murad Code, 2022). Therefore, for this training programme, we selected recommended strategies for improving communication that were successfully trained in previous research and promote detailed and accurate disclosures, including building and maintaining rapport, establishing ground rules, the use of open questions, and the importance of interviewees actively participating within the interview (Fisher & Geiselman, 1992, Ministry of Justice, 2022, Orbach et al., 2000).

5.2.3.1 Rapport Building & Narrative Practice

Rapport building is a dynamic interaction between the interviewer and interviewee (Abbe & Brandon, 2013), that establishes a relationship between the dyad (Gabbert et al., 2021) and aims to make the interviewee feel less stressed within the interview (Vallano & Schreiber Compo, 2015). An interviewer needs to establish rapport because it encourages survivors to

disclose (Patterson, 2011; Vallano & Schreiber Compo, 2015) and promotes complete (Fisher & Geiselman, 1992; Risan et al., 2020) and accurate recall (Kieckhaefer et al., 2014; Vallano et al., 2015). This is particularly the case for survivors of SGBV, whereby rapport is needed to make them feel safe and comfortable to disclose their experiences (Elmir et al., 2011; Flowe & Carline, 2021). Best-practice guidance recommends that rapport should be built before asking the survivor questions that gather substantive information about the offence (Ministry of Justice, 2022). Additionally, rapport is a continuous process that needs to be maintained during all encounters with the survivor to benefit reporting (Ministry of Justice, 2022) and to maintain the survivor's trust in the process (Murad Code, 2022).

Interviewers may ask survivors to provide a detailed episodic account of a neutral or positive event before disclosing the crime (Ministry of Justice, 2022). This is referred to as narrative practice (Lyon et al., 2014; Roberts et al., 2004; Yi & Lamb, 2018). The Achieving Best Evidence guidance (Ministry of Justice, 2022) recommends that interviewers use open questions to elicit a detailed statement about a neutral or positive episodic event. This helps survivors to experience the questioning strategies that will be used during the interview and to practise providing an elaborated recall. This is beneficial as providing an elongated response is not commonplace in everyday communication, therefore it is often advantageous to practise this. Researchers have found that children provide more details, with increased accuracy, if a narrative practice is conducted before they are asked to disclose their experiences of alleged sexual abuse (Price et al., 2013; Sternberg et al., 1997). In the one study conducted to date with adults using sexual assault stimuli, whilst the implementation of a narrative practice did not increase the number of correct details recalled in comparison to not conducting a narrative practice, it did not introduce errors (Brubacher et al., 2020). When participants were asked about their perceptions of narrative practice, one-third of respondents found it helpful to build

rapport and establish the interview environment, but one-half of respondents wanted to begin the interview. Therefore, the guidance recommends working flexibly with the needs of the survivor and beginning the information-gathering phase should survivors wish to disclose quickly (Ministry of Justice, 2022).

5.2.3.2 Ground Rules

Ground rules are instructions for survivors on how to provide their disclosures in a manner that enhances recall accuracy (Fessinger et al., 2021; Scoboria & Fisico, 2013) and they set expectations of what a survivor will experience within an interview (Powell et al., 2005). Commonly implemented ground rules are instructing a survivor to say ‘I don’t know’ rather than guess the answer to a question; to correct an interviewer if they have misunderstood something or they are misrepresenting your report (Ridley et al., 2012); and to offer a survivor breaks or the right to terminate the interview at any time to reduce their stress (Ministry of Justice, 2022). Ground rules and practising the use of ground rules have been found to increase the accuracy of a participant’s report in the context of sexual assault (Ali et al., 2020).

5.2.3.3 Independent Voice

It is imperative that a survivor has agency within an interview (Fisher & Geiselman, 1992) and that their independent voice is heard without contamination (Gabbert et al., 2003; Loftus & Palmer, 1974). There are many ways that an interviewer can promote a survivor's independent voice, including not interrupting a survivor during their disclosure, as this may distract them and lead them to forget details, or it may break rapport with the interviewer which may lead the survivor to be reluctant to disclose more details (Fisher & Geiselman, 1992). Survivors themselves state that they want interviewers to hear them and listen to their accounts (Campbell et al., 2009). As participants in the current training are survivors

themselves, or individuals who are sympathetic to survivors, it is likely that they already promote survivors' voices within their practice. Therefore, we do not expect to see a difference in participants' ability to capture the survivor's independent voice because of our training programme.

5.2.3.4 Question Strategies

Additionally, the use of open-ended prompts is useful for obtaining a survivor's independent voice, as they can provide their initial narrative account without interviewer influence (Fisher & Geiselman, 1992; Ministry of Justice, 2022; Powell, 2002). The use of open-ended prompts has been found to elicit more detailed and accurate information in comparison to closed questions (Evans & Fisher, 2011; Hershkowitz, 2001; Lamb et al., 2007a, 2007b; Orbach & Lamb, 2000; Sternberg et al., 2001). Closed questions are yes/no questions, forced-choice option posing prompts or questions that elicit a limited response (see Powell et al., 2005). A reliance on closed questions limits the amount of information provided by a survivor (Fisher & Geiselman, 1992). Nevertheless, the riskiest form of questioning strategy are leading questions (e.g., "An utterance that assumes information not disclosed by the child or implies that a particular response is expected" Lamb et al., 2007a, p. 1206) which can contaminate the documented memory evidence (Cederborg et al., 2012; Geiselman & Fisher, 1988; Lamb et al., 2007a, 2007b).

5.2.4 Previous Research on Training Investigative Interviewing Skills

Police officers who interview victims and witnesses do not always use best-practice techniques (e.g., they use intimidation tactics on the interviewee; Schreiber Compo et al., 2012). However, researchers have found that police interviewers use more best-practice techniques (e.g., open questions) after receiving training (Benson & Powell, 2015; Lamb et

al., 2002, 2007a, Lawrie et al., 2021), with some maintenance of skill within one-year follow-up (Benson & Powell, 2015; Zekiroski et al., 2024). These training programmes are designed to improve police officers' competencies in interviewing survivors of SGBV (Hershkowitz et al., 2014; Lamb et al., 1998, 2008; Orbach et al., 2000; Sternberg et al., 1999, 2001). Previous research has found that training improves interview skills, including the use of open questions, for both police professionals and non-police professionals (e.g., child protection officials, clinical psychologists, and hospital workers; Haginoya et al., 2023; Yan et al., 2023). Therefore, there is a basis to suggest that non-police professionals can learn interview best-practice. However, the current research was the first to extend this to non-police first responders in a humanitarian context or an LMIC.

Training is found to be more effective when they utilise practice and feedback (Powell, 2008). One method of practising interviewing skills within a training package is to conduct mock interviews (Benson & Powell, 2015; Lawrie et al., 2021). These can be conducted pre-and post-training as an educational tool and as a form of evaluation (Benson & Powell, 2015; Lawrie et al., 2021). Additionally, some training packages engage in mock interviews following the teaching of each skill to facilitate learning (Zekiroski et al., 2024). Mock interviews are informative as they facilitate learning through participation (Kolb, 2015; see Powell et al., 2022 for a review). Learning is most effective in improving skills within interview training when paired with external feedback in comparison to self-reflection and internal feedback (Yan et al., 2023), as these are vulnerable to bias (Joughin et al., 2019). The training programme used within this research implemented a pre-and-post-training mock interview for evaluation purposes. In addition, separate mock interviews were conducted with feedback and group reflections following the training of elements in 1) the pre-information

gathering phase (i.e., rapport-building and ground rules) and 2) the information gathering phase (i.e., funnel approach to questioning strategies) to maximise the learning experience.

5.2.4.1 Train-the-Trainer Approaches

Despite research finding a benefit of training on interview performance, few police investigators report receiving training in interview best-practice (Hirn Mueller et al., 2015). This likely explains why police investigators do not always adhere to best practice (Schreiber Compo et al., 2012). Investigators may not have received specialist interview training as there are frequently not enough trainers to facilitate the training of all police investigators (Molinaro et al., 2019). Instead, to overcome this, training is being conducted using a train-the-trainer approach, where the convener of the training programme teaches additional providers how to facilitate the training (Becan et al., 2019). This has been an effective tool in training skills in the medical field (Wittenberg et al., 2018; Zisblatt et al., 2017) and childcare and welfare (Brown et al., 2012; Muldoon & Cosbey, 2018). Additionally, the train-the-trainer approach is effective in training students how to conduct an interview (Molinaro et al., 2019) using the Cognitive Interview procedure (Fisher & Geiselman, 1992). In one study, academic experts taught trainers from the Federal Bureau of Investigation and local police officers to train students how to conduct the Cognitive Interview in comparison to a standard interview (Molinaro et al., 2019). Students who were trained in the Cognitive Interview gathered more information from their student mock witnesses at an increased accuracy rate and used fewer leading questions (Molinaro et al., 2019). Therefore, this suggests that interview training can be facilitated using the train-the-trainer approach. Due to the current training programme taking place during COVID-19 with lockdown and travel restrictions, we implemented a train-the-trainer approach, whereby we trained leading members of the WKF to facilitate our co-designed training. This is a sustainable approach for future training but

may also be more effective than academic-led training. Researchers have found that police officers prefer to be trained by those with operational experience in their work in comparison to academics (Telep & Lum, 2014). Therefore, our non-police first responders may also relate more to individuals within their organisations and networks conducting the training programme.

5.2.5 Cultural Sensitivity in Interview Training

Non-police first responders may also relate more with the train-the-trainer approach, as the facilitator is part of their community and culture. It is important to be considerate of culture when conducting interviews and when training individuals to conduct interviews (Hope et al., 2022). Culture can impact memory reporting, the social dynamics of an interview, and an interviewee's willingness to disclose sensitive information (see Hope et al., 2022; and Vredeveltdt et al., 2023 for further information). For example, when interviewing Australians and East Asians regarding negative life events, Australian individuals provided more specific reports, however, the two contexts were comparable when reporting everyday activities (Jobson & O'Kearney, 2006). Moreover, it is important to understand the influence of culture when designing appropriate survivor-centred training and resources that facilitate detailed and accurate disclosures (Hope et al., 2022; Smith et al., 2019). Therefore, the inclusion of the WKF and the Network members both in co-designing the training programme and facilitating the training course can help to ensure that the training resources are relevant to the specific country and the needs of the community that the interviews will be conducted in.

5.2.6 The Current Study

The present study developed an innovative training package using best-practice principles from the Achieving Best Evidence guidance (Ministry of Justice, 2022), NICHD (Orbach et

al., 2000), Protocol (FCDO, 2017), Murad Code (2022), and other established training packages (Benson & Powell, 2015). This training aimed to provide non-police professionals with the recommended evidence-based skills and understanding needed to document memory. We used a pre-and post-training design to investigate the ability of our innovative training programme to improve participants' knowledge of interview best-practice, assessed via a written test (Study 1); and interview skills assessed via a recorded mock interview (Study 2).

We hypothesised that, post-training, 1) participants would have increased knowledge of interview best-practice, as evidenced by increased correct responses to the written test post-training in comparison to pre-training, 2) participants would perform more rapport-building techniques and ground rules administration post-training in comparison to pre-training, and 3) participants would ask more open questions and less closed and leading questions post-training in comparison to pre-training. We did not expect to see a change in the documentation of a survivor's independent voice, as participants would likely have the interpersonal skills to achieve this without training, thus it acted as a baseline measure.

5.3 Study 1

5.4 Method

5.4.1 Design

The study conducted a two time point (pre-training, post-training) x two participant type (Network member, duty bearer) mixed-design, with participant type as a between-subjects' variable. A written test was completed pre-and post-training to assess knowledge of best-practice interviewing, with accuracy on the test as the dependent variable.

5.4.2 Participants

Initially, 76 individuals took part in the training, however 29 participants completed an alternative written evaluation that was not analysed within the current study. Overall, 47 individuals participated using this written evaluation, including 30 duty bearers (i.e., individuals who administer medical and legal care to survivors from Nairobi) and 17 members of the Network from Bungoma and Mount Elgon. All participants were human rights defenders and had a thorough comprehension of SGBV, due to their personal experiences and training provided by the WKF. All human rights defenders had been trained by the WKF in the SGBV referral pathway, however, none of the participants should have received any systematic training in documenting cases of SGBV from the WKF or their occupation before this study. Human rights defenders voluntarily participated in this study and were reimbursed for their travel expenses and provided refreshments. To be included in the current study, participants needed to be over the age of 18, fluent in English, and complete both the pre-and post-training evaluation measure. Ethical approval was granted for this study by X. Informed consent was obtained from participants to take part in both the training and evaluation exercises.

5.4.3 Materials

5.4.3.1 Training Package

The training package used within this research was co-developed with the WKF and the Network and was informed by best-practice interview guidance as set out in the Achieving Best Evidence (Ministry of Justice, 2022), NICHD (Orbach et al., 2000), Protocol (FCDO, 2017), Murad Code (2022), and research by Benson and Powell (2015). The training package included an introduction regarding why memory documentation was important before

focusing on the three components of best-practice interviewing outlined above, a) rapport building and narrative practice, b) administering ground rules instructions, and c) documenting the survivor's independent voice (including asking open questions). To teach these interview principles the training package incorporated lecture-style teaching, group discussions, self-directed reading, key definitions and examples of interview principles (e.g., examples of open and closed questions) and role-play activities (e.g., to demonstrate rapport building) with feedback and reflective practice. Participants were asked to reflect on past interview experiences and the knowledge and skills acquired throughout each stage of training. In addition to interviewing best-practice, the training package also covered trauma-informed practice (e.g., showing empathy and respect for the survivor) and support strategies to mitigate vicarious trauma in the interviewers themselves. The training concluded with each participant conducting a practice interview with a peer within the group.

Due to travel restrictions within COVID-19 lockdown periods, we used a train-the-trainer model, whereby members of the WKF were trained to deliver the training sessions on the ground in Kenya. We trained members of the WKF to facilitate the training using online small group teachings; whereby facilitators would receive a detailed breakdown of the training course, how to deliver each module, and the research evidence behind the material and the activities. Facilitators were provided opportunities to ask questions, obtain feedback and practice the delivery of the training. Additionally, we provided each facilitator with a detailed train-the-trainer resource pack that contained lesson plans, scripts for the training PowerPoint, and answers to frequently asked questions. One academic from the research team also monitored the training via Zoom to ensure the training was delivered as expected.

The training package and its evaluation were delivered in English. Kenya's national languages are Swahili and English. However, Swahili has many regional dialects. Therefore,

providing training in Swahili alone would be impractical. Separately, human rights defenders, police, and medical professionals receive their training typically in English because that is the official language used by the government (e.g., police interviews). Given that statement documentation would need to be completed in English for future use in the criminal justice system, the research team decided to present all written materials in English and deliver the spoken lectures, mock interviews, and discussions in English. The WKF and the Network reviewed all training and evaluation materials to make sure they were at an appropriate English proficiency level for participants and all the workshop participants self-reported that they were proficient in English.

5.4.3.2 Written Evaluation

A written evaluation was constructed as a script, depicting an initial documentation attempt between an interviewer and a survivor of sexual violence. The script included both verbal communication (e.g., questions posed to the survivor) and non-verbal communication (e.g., the interviewer's body language). The script had examples of recommended evidenced-based interview techniques ($n=7$, e.g., introductions, open body language, discussion of a neutral/positive event, open question in narrative practice, ground rules, starting an interview with an open question, creating a safe environment) and problematic interview techniques ($n=7$, e.g., interrupting the survivor, confirming language, use of closed option-posing questions, discussing assumptions/stereotypes, introducing own knowledge/ experiences, no interview purpose established, no consent obtained). Participants were asked to label where they read examples of recommended and problematic interview techniques and explain whether they thought the action was a positive or negative interviewer behaviour.

5.4.4 Measures

Participants' knowledge was measured by coding the number of correctly labelled recommended and problematic interview behaviours depicted in the written evaluation. Correct responses were coded as '1', whereby participants correctly located and labelled one of the 14 recommended and problematic interviewer behaviours within the written evaluation. Incorrect responses were coded as '0', whereby participants either did not identify one of the 14 recommended and problematic interviewer behaviours within the written evaluation or provided an incorrect label (e.g., labelling a closed option-posing question as an open question or a recommended interview behaviour).

5.4.5 Procedure

Participants initially completed the pre-training written evaluation. No time limits were placed upon participants to complete the written evaluation and participants were instructed and monitored to ensure they completed the written evaluation independently. Participants then completed the training described above in a one-day face-to-face training session. After completing the full training package, participants completed the same written evaluation post-training.

5.4.6 Data Analysis

We conducted a multilevel logistic regression to predict knowledge accuracy on the written evaluation as a function of time point (pre- vs post-training), interview behaviour type (recommended vs problematic) and participant type (duty bearer vs Network member). A multilevel logistic regression was selected in comparison to a mixed ANOVA to account for our nested data structure at both the participant and the item level. Typical analysis of variance statistics collapses across such nested information and thus discards those findings

that are of interest here. Analyses were conducted using the lme4 package (Bates et al., 2015) in R (R Core Team, 2018). As the outcome variable of this study (accuracy) is binary (0= incorrect, 1 = correct), a multilevel logistic regression with a binomial (logit link) function was used, with time point (pre-training = 0, post-training = 1), interview behaviour type (problematic = 0, recommended = 1) and participant type (duty bearer = 0, Network member = 1) entered as predictor variables. We entered participants and items as random effects to account for individual differences in knowledge performance, as well as item difficulty within the written evaluation. The intraclass correlation for our random intercept model ($\text{Accuracy} \sim 1 + (1|\text{participant}) + (1|\text{item})$) was 0.615, which indicates that the random effects account for 62% of the variation within this model. Thus, participants and items were included as random effects in the analyses that follow (Raykov, 2011).

All significant tests were two-tailed (see Table 1 for odds ratios and confidence intervals). Alpha was set to .05. Assumptions tests were conducted on our model using the Car package (Fox & Weisberg, 2019) to test for multicollinearity and the DHARMA package (Hartig, 2022) to assess for normal distribution, heteroscedasticity, and outliers within residuals. All assumptions were met for analyses.

5.5 Results

Time point significantly predicted knowledge accuracy on the written evaluation ($B = 0.66$, $SE = 0.16$, Wald $Z = 4.17$, $p < .001$), indicating participants were more accurate after receiving the training (see Table 2 for descriptives). Participants were better able to detect recommended compared to problematic interviewer behaviour, a significant effect for interviewer behaviour ($B = 3.08$, $SE = 0.85$, Wald $Z = 3.61$, $p < .001$). Additionally, duty bearers were more accurate than the Network members, a significant effect for participant type ($B = -0.90$, $SE = 0.23$, Wald $Z = -5.70$, $p < .001$).

To ensure we had sufficient power to detect effects, we conducted a simulation-based post-hoc power analysis using the R software (Bates et al., 2015) simR (Green & MacLeod, 2016) to evaluate the power of our model. We found that we have 100% power (95% CI [99.63,100.00]) to determine a significant difference, relative to our random intercept model, based on 1000 simulations of our dataset.

Table 1. *Multilevel logistic regression analyses of performance on the written evaluation.*

<i>Predictor</i>	<i>B(SE)</i>	<i>Z</i>	<i>OR</i>	<i>95% CI for OR</i>	
				<i>LL</i>	<i>UL</i>
<i>Intercept</i>	-3.76(0.66)	-5.70***	0.02	0.01	1.08
<i>Time point</i>	0.66(0.16)	4.17***	1.94	1.42	2.65
<i>Interview Behaviour Type</i>	3.08(0.85)	3.61***	21.85	4.09	116.68
<i>Participant Type</i>	-0.90(0.23)	-3.83***	0.41	0.26	0.65
<i>Variance of Random Effects</i>					
<i>Participant</i>	0.27				
<i>Item</i>	2.15				
<i>Marginal R²/ Conditional R²: 0.319/0.608¹</i>					

Note: $p < .001$ *** B: standardised beta value; SE: standard error; Z: Wald Z statistic; OR: odds ratio; LL: lower limit; UL: upper limit. ¹ This was calculated using the method by Nakagawa & Schielzeth (2013).

Table 2. Means (SD) for multilevel logistic regression analyses of accuracy on the written evaluation

Variable		Time	
		Pre-Training	Post-Training
Interview Behaviour Type	Recommended	.32 (.47)	.44 (.50)
	Problematic	.06 (.24)	.11 (.31)
Participant Type	Duty Bearer	.23 (.42)	.31 (.46)
	Network Member	.13 (.33)	.20 (.40)

5.6 Discussion

Study 1 investigated whether participants' knowledge of recommended interview techniques improved following training using a written evaluation. We found that participants' knowledge increased post-training, which suggests that our innovative training programme improves non-police professionals' understanding of recommended interviewing practice. However, there is need for further improvement, as participants only correctly labelled on average between three to four out of 14 interview features correctly within the written evaluation post-training, in comparison to two to three features pre-training. As such, whilst the training package does increase knowledge of interview best-practice, more work is required to extend these preliminary findings to maximise community actors' interview knowledge.

Additionally, duty bearers had increased knowledge accuracy in comparison to Network members. This may be due to two reasons. Firstly, knowledge may have differed between duty bearers and Network members based on the level of education and English proficiency within that group, as the training was conducted in English. Duty bearers were individuals who work in the medical and legal field. Therefore, they may have a higher level of education than the Network members and an increased understanding of what might affect interviews (Hassan et al., 2023) and case progression (Ali et al., 2019). This could have aided the duty bearer's ability to complete the written evaluation, particularly in English. Future training should translate the training package to the first language of the participants and the survivors they will be documenting responses from. However, this will likely be English in Kenya, due to it being a shared spoken language and the language used in the criminal justice system.

Secondly, the skills of the trainers may have improved with practice over the course of the sessions. The duty bearers were enrolled in later sessions and may have benefited from improved presentations, increasing their comprehension and retention compared to Network members. To date, limited research has assessed trainers' abilities to deliver training within a train-the-trainer approach (Poitras et al., 2021). Instead, previous research focuses on participants' behavioural outcomes to evaluate the success of train-the-trainer approaches (Molinaro et al., 2019), finding train-the-trainer approaches to be effective modes of teaching. However, future research should assess whether the training facilitators' skills improve over time. In this research, the more senior academic researchers attended each training remotely to monitor the consistency of training delivery. Whilst they did not notice any changes in the training delivery, future studies should measure this systematically.

We also found that all participants were better at identifying recommended interviewer behaviours in comparison to problematic interviewer behaviours. It is possible that the

recommended behaviours were easier to identify or more salient than problematic behaviours within the written evaluation test. Future research should investigate the salience of both the recommended and problematic behaviours within the written evaluation test by asking experts in investigative interviewing to complete it. The results of this research would enable us to explore whether recommended behaviours are easier to identify within the written evaluation test, or whether our participants are weaker in being able to identify problematic behaviours. If this is the case, it is imperative that future training studies focus on training common mistakes/ problematic behaviours made within interviews and how to overcome them to avoid such behaviours within interviews with survivors of SGBV.

Moreover, previous interview training research has shown that knowledge of best-practice interviewing does not necessarily translate into interview practice (Lamb et al., 2007a) and interviewing as a skill is very difficult to learn (Powell, 2008). Given this, we conducted a further evaluation to measure participants' interview skills using recorded mock interviews that allowed participants to practise what they had been taught. This has greater face validity and better matches the structure and content of the interview training that included role-play practice and feedback to improve interview skills.

5.7 Study 2

5.8 Method

5.8.1 Design

This study used a within-subjects pre- and post-training design to evaluate whether participants' interview skills improved post-training. Dependent variables that measured interview performance included: the use of rapport-building techniques, providing ground

rules instructions, documenting a survivor's independent voice, interviewer questioning strategies (open, closed, leading), investigative questions asked, interview duration in seconds, and control items (i.e., interview principles that were not included in the training).

5.8.2 Participants

Participants from Study 1 were asked to conduct a mock interview pre-and-post training. In total 37 participants completed both the pre-and-post training mock interviews to be included in the analysis. Ten participants were excluded due to incomplete mock interviews (they only completed one mock interview). Of our 37 participants, 14 were duty bearers and 23 were members of the Network.

5.8.3 Procedure

After completing their written evaluation, participants completed a pre-training mock interview, which was filmed by a staff member at the WKF. Participants were told that the mock interview was to document a first disclosure from a survivor of sexual violence. After the pre-training mock interview, participants received the training programme as described in Study 1. Post-training, participants completed a second recorded mock interview where they could apply what they had learned from the training programme. Both mock interviews were video recorded for comparison. There were no time limits placed upon the mock interviews and each mock interview pair was filmed privately such that no other participant could witness the interview.

5.8.4 Codebook

Our codebook (see Table 3) used to assess best-practice interviewer performance (e.g., rapport building, ground rules, documenting survivor's independent voice), interviewer

questions, and investigative questions was adapted from the codebook used by Benson and Powell (2015). There were multiple items present in Benson and Powell's (2015) training with police interviewers that were not trained in the current programme (e.g., initiating a break before asking for specific details). This was due to restricted time with participants. These behaviours were coded as control items (see Table 3). Pre-and-post-training comparison of these items allowed us to investigate if participants' interview skill performance was impacted by fatigue effects (i.e., performance on control items decreased between pre-and-post training mock interviews, as the post-training mock interview was conducted following a full day of training activities). Despite our training package focusing on documenting a survivor's account rather than investigating, we still coded for the number of investigative details obtained. This was both as a further control measure but also to explore if training to document also potentially increases investigative potential.

Table 3. Evaluation Criteria

Interviewer Performance		Definitions and Examples
Interviewee Preparation	Rapport Building	<p>Building a relationship with the survivor to make them feel more comfortable during the interview.</p> <ul style="list-style-type: none"> ● <i>Interviewer introduced themselves to the survivor,</i> ● <i>Establish the purpose of the interview,</i> ● <i>Obtain consent for the interview,</i> ● <i>Ensure confidentiality of any data collected,</i> ● <i>Ensure the interview takes place in a safe, private environment,</i> ● <i>Respect the diversity of survivors,</i> ● <i>Display empathy,</i> ● <i>Show interest,</i> ● <i>Use open body language,</i>

		<ul style="list-style-type: none"> • <i>Maintain rapport,</i> • <i>Identify a neutral or positive practice event,</i> • <i>Elicit practice narrative,</i> • <i>Use open questions in practice narrative,</i> • <i>Signpost support services</i>
	Ground Rules	<p>Ground rules are instructions given to the survivor about what to expect during the interview.</p> <p>Ground rules that should be administered within an interview:</p> <ul style="list-style-type: none"> • <i>Allowing a survivor to state when they do not know the answer to a question,</i> • <i>Instructing a survivor to ask if they do not understand a question,</i> • <i>Instructing a survivor to clarify if the interviewer misunderstands what they have said</i> • <i>Informing a survivor that they can take a break or stop the interview at any time.</i> <p>For each ground rule, participants received a point for mentioning the ground rule, but additional points if the ground rule instruction is 1) clear and simple and 2) given in a complete sentence.</p>

Independent Voice		<p>Allowing the survivor to document their experience in their own words and actively participate in the interview.</p> <ul style="list-style-type: none"> • <i>Begin the interview with an open question to elicit free recall,</i> • <i>Use survivors' language in the wording of the questions,</i> • <i>Identify the topic of concern,</i> • <i>Allow the survivor to talk without interruption,</i> • <i>Use simple language.</i>
Interviewer Questioning Strategies	Open Questions	<p>Questions that encourage an elaborate response.</p> <p><i>E.g., 'Tell me what happened?'</i></p>
	Closed Questions	<p>Yes/no questions, forced-choice option posing prompts or questions that elicit a limited response (see Powell et al., 2005).</p> <p><i>E.g., 'Was the perpetrator tall?'</i></p>

	Leading Questions <p>Questions that suggest a particular answer and introduce information that was not previously disclosed by the survivor.</p> <p><i>E.g., ‘What did the male look like?’ (When the survivor never mentioned the gender of the perpetrator).</i></p>
Investigative Details Obtained	<p>Investigation relevant details obtained within an interview (either through specific questions asked or within free recall response)</p> <ul style="list-style-type: none"> ● <i>The identity of the offender,</i> ● <i>The approximate time of the offence,</i> ● <i>The location,</i> ● <i>The offence type,</i> ● <i>Possible witnesses,</i> ● <i>Possible physical evidence.</i>

Control Items	<ul style="list-style-type: none"> ● <i>Initiate a break before asking for specific details,</i> ● <i>Establish if the abuse was repeated,</i> ● <i>Identify the number of abuse occurrences,</i> ● <i>Stick to questioning one occurrence at a time,</i> ● <i>Exhaust each occurrence before questioning the next,</i> ● <i>Use a range of open questions,</i> ● <i>Avoid using pronouns,</i> ● <i>Use the past tense,</i> ● <i>Avoid 'can you' questions,</i> ● <i>Confirm prior information (e.g., who the survivor has already spoken to).</i>
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5.8.5 Coding and Measures

Four researchers who were blinded to the research conditions coded 74 mock interviews. Interview duration was measured in seconds from the initial interviewer prompt to interview completion. For each mock interview, questions were coded as either open, closed or leading during the information gathering phase of the interview (see Table 3 for definitions); these were binary coded for questioning strategy as a '1' for every open question participants asked and a '0' for every closed or leading question they asked. This was in correspondence with our training material that advised the use of open questions and prohibited the use of closed and leading questions. For the interview performance skill set categories, rapport building, ground rules, and independent voice participants received a score of '1' for each item in Table 3 they displayed and a '0' if this behaviour was not seen. For every participant and across the investigative details obtained and control items, performance was measured by tallying the number of evaluative behaviours the participant displayed (e.g., for each evaluative behaviour in Table 3 participants received a '1' if they displayed the behaviour and a '0' if they did not) divided by total behaviours within that category (see Table 3).

5.8.6 Inter-Rater Reliability

Research assistants who were blind to the purposes and conditions of the research were trained to code mock interview videos and allocated an equal number of participants to code. Additionally, two blinded research assistants double-coded over 20% of the mock interviews ($n = 19$) for reliability analysis. Inter-rater reliability was investigated using Cohen's Kappa Statistic with agreement thresholds taken from previous research, i.e., moderate reliability encompasses Kappa values between .60-.79 and strong reliability encompasses Kappa values between .80-.90 (McHugh, 2012). Inter-rater agreement was moderate for documenting a

survivor's independent voice ($\kappa = 0.78$). Kappa was substantial for the use of rapport-building techniques ($\kappa = 0.88$), providing ground rules instructions ($\kappa = 0.90$), asking open questions ($\kappa = 0.88$), asking closed questions ($\kappa = 0.83$), and asking leading questions ($\kappa = 0.83$), the proportion of investigative details obtained ($\kappa = 0.80$) and control items ($\kappa = 0.80$).

5.8.7 Data Analysis

Preliminary analyses were conducted using separate paired sample t-tests to investigate differences between pre-and-post training for skills that we did not train, including the proportion of investigative details obtained, interview duration, and control items. Following preliminary analyses, we conducted a multilevel logistic regression using the lme4 package (Bates et al., 2015) in R (R Core Team, 2018). Alpha was set to .05. All significance tests were two-tailed. Assumption tests were conducted using the Car package (Fox & Weisberg, 2019) to test for multicollinearity and the DHARMa package (Hartig, 2022) to assess for normal distribution, heteroscedasticity, and outliers within residuals. All assumptions were met for analyses.

A multilevel logistic regression was selected in comparison to a mixed ANOVA to account for the nested structure of our data at the participant and the item level. Typical analysis of variance statistics collapses across such nested information and thus discards those findings that are of interest here. Since the outcome variable (interviewer performance) is binary (0= skill was not displayed, 1 = skill was displayed), a multilevel logistic regression with a binomial (logit link) function was used, with time point (pre-training = 0, post-training = 1), participant type (Network Member = 0, duty bearer = 1), and interview skill set (rapport building, ground rules, independent voice, and questioning strategy dummy coded, with

independent voice as the reference category⁴) entered as predictor variables (Model 1). We entered participants and the sub-items within each interview skill set (see Table 3 for behaviours within each skill set) as random effects to account for individual differences in performance as well as item difficulty within each interview skill set. The intraclass correlation for our random intercept model (interviewer performance $\sim 1 + (1|\text{participant}) + (1|\text{item})$) was 0.600, which indicates that the random effects account for 60% of the variation within this model, thus they need to be controlled for within the model (Raykov, 2011).

Following Model 1, we conducted a second model with the addition of an interaction term between time point and interviewer skill set (Model 2). This addition of the interaction term was to investigate if there are any changes in interviewer performance to each interview skill set, as a function of time point (pre-and-post training). Model 2 contained the same fixed and random effects as Model 1, with the addition of the interaction term (time point x interviewer skill set).

5.8.8 Data Availability

This study was not pre-registered. Data, corresponding code, and materials were not made publicly available due to ethical reasons, as our participants were survivors and duty bearers who work with survivors. Therefore, personal experiences may have been shared within the evaluations.

⁴ Independent voice was selected as the reference category as we did not hypothesise a change in this interview skill between pre-and-post-training.

5.9 Results

5.9.1 Preliminary Results

Paired sample *t*-tests found no differences in control items, $t(36) = .42$, $p = .337$, nor interview duration between pre-and post-training $t(36) = -.09$, $p = .465$ (see Table 4 for descriptives). However, the number of investigative details obtained increased following training, $t(36) = -2.46$, $p = .009$.

Table 4. Means and standard deviations for preliminary analyses

Variable	Time	Mean	SD
Control Items	Pre-training	.27	.07
	Post-training	.26	.07
Interview Time (s)	Pre-training	469.43	337.71
	Post-training	473.81	168.56
Investigative Details	Pre-training	.57	.17
	Post-training	.66	.19

5.9.2 Performance Results

Within Model 1, we found that participants were more likely to display behaviours in accordance with best-practice minimum standards of interviewing after receiving the training in comparison to pre-training (OR = 2.14, 95% CI: [1.71, 2.68], see Table 5 for descriptives), a significant effect for time point ($B = 0.76$, $SE = 0.11$, Wald $Z = 6.64$, $p < .001$, see Table 6 for inferential statistics). There was no effect of participant type on interviewer performance ($p = .121$). Participants were less likely to provide ground rules instructions (OR = 0.01, 95% CI:

[0.00, 0.07]) and to display rapport-building behaviours (OR = 0.13, 95% CI: [0.02, 0.68]) in comparison to obtaining a survivor's independent voice irrespective of training. A significant effect of interview skill set relative to obtaining a survivor's independent voice (providing ground rules ($B = -4.42$, $SE = 0.88$, Wald $Z = -5.05$, $p < .001$) and rapport building ($B = -2.05$, $SE = 0.85$, Wald $Z = -2.41$, $p < .05$)). There was no effect of interviewer questioning strategy relative to documenting a survivor's independent voice ($p = .059$).

Within Model 2, we found that participants provided ground rules more frequently post-training in comparison to pre-training (OR = 65.53, 95% CI: [15.02, 285.86]) (see Figure 1), a significant interaction between time point and ground rules administration ($B = 4.18$, $SE = 0.75$, Wald $Z = 5.57$, $p < .001$). This is relative to the no change found in obtaining a survivor's independent voice between mock interviews. Additionally, participants displayed more rapport-building behaviours post-training in comparison to pre-training (OR = 4.12, 95% CI: [2.13, 8.00]) (see Figure 1). A significant interaction between time point and rapport building relative to the no change found in obtaining a survivor's independent voice between trainings ($B = 1.42$, $SE = 0.34$, Wald $Z = 4.20$, $p < .001$). There was no interaction between time point and the questioning strategies used by interviewers ($p = .915$). When comparing whether the introduction of the interaction term in Model 2 improved our model fit relative to Model 1, we found that our interaction model (Model 2) had improved fit, $\chi^2(5) = 99.23$, $p < .001$. This indicates that a model with the inclusion of an interaction between time point and interviewer skill set better-predicted interviewer performance than participant type, time point, and interviewer skill set without any interactions.

To ensure sufficient power to detect effects, we conducted a simulation-based post-hoc power analysis using the R software (Bates et al., 2015) simR (Green & MacLeod, 2016) to evaluate the power of our models. For Model 1, we found that we have 100% power (95% CI

[99.63,100.00]) to determine a significant difference, relative to our random intercept model, based on 1000 simulations of our dataset. For Model 2, we found that we have 100% power (95% CI [99.63,100.00]) to determine an interaction, based on 1000 simulations of our data.

Table 5. *Means (SD) for multilevel logistic regression analyses of interview performance during the mock interviews*

Variable		Time	
		Pre-Training	Post-Training
Participant Type	Duty Bearer	.29 (.45)	.41 (.49)
	Network Member	.29 (.45)	.36 (.48)
Interview Skill Set	Rapport Building	.40 (.49)	.53 (.50)
	Ground Rules	.00 (.07)	.16 (.37)
	Independent Voice	.79 (.41)	.75 (.44)
	Questioning Strategies	.21 (.41)	.17 (.37)

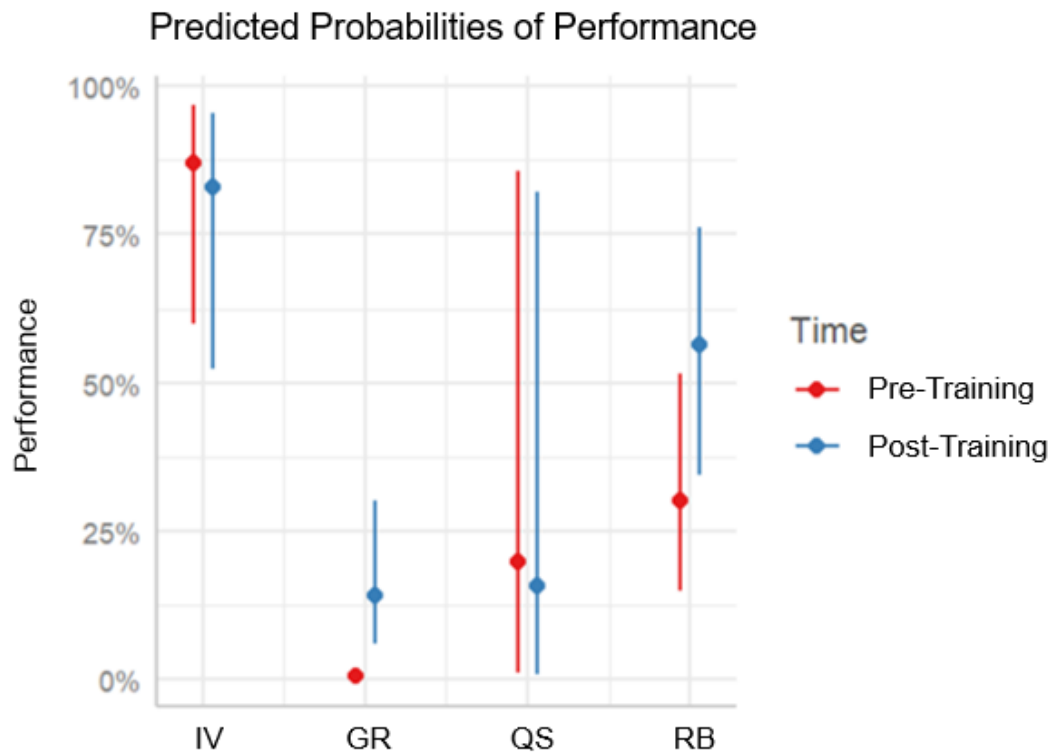
Table 6. *Multilevel logistic regression analyses of interview performance during the mock interviews*

Predictor	Model 1 (fixed effects model)	Model 2 (fixed effect + interaction)
Fixed effects		
Intercept	1.27 (0.74)	1.91 (0.77)*
Time point	.76 (0.11)***	-0.32 (0.28)
Participant Type	0.29 (0.19)	0.25 (0.19)
Interview Skill Set – Ground Rules	-4.42 (0.88)***	-7.58 (1.13)***
Interview Skill Set – Rapport Building	-2.05 (0.85)*	-2.75 (.89)**
Interview Skill Set – Question Strategy	-3.30 (1.75)	-3.31 (1.80)
Time Point*Interview Skill Set – Ground Rules		4.18 (0.75)***
Time Point*Interview Skill Set – Rapport Building		1.42 (0.34)***
Time Point*Interview Skill Set – Question Strategy		0.04 (0.36)
Random parameters		
Level 2 intercept variance (participant)	0.19 (0.44)	0.20 (0.45)
Level 2 intercept variance (item)	2.52 (1.59)	2.64 (1.62)
Marginal R ² / Conditional R ² :	0.275/0.602	0.439/0.699
Model fit		
Model df	7	16
Test change in df	5	9
AIC	2195.6	2113.3
BIC	2243.1	2178.7
-2 log likelihood	-1089.8	-1045.6

Note: Significant predictors are noted in bold. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. B, logistic coefficients; Standard errors for fixed effects and standard deviations for random

effects are given in parentheses. df, degrees of freedom; AIC Akaike Information Criterion; BIC Bayesian Information Criterion.

Figure 1. Mean performance probability (± 1 SEM) as a function of time point and interview skill set



Note: IV - Independent Voice, GR - Ground Rules, QS - Question Strategy, RB - Rapport Building

5.10 Discussion

Study 2 examined the effect of interview best-practice training on participants' interview performance exhibited during mock interviews. Overall, we found that participants' interview performance increased between pre- and post-training mock interviews. This improvement in interview performance was found for both duty bearers and Network members. Therefore, the

impact of English proficiency or trainer improvement did not extend beyond the written evaluation test to participants' practical skills evaluated within the mock interview.

When considering the interaction between the interview skill set and time point that best accounted for our data, participants displayed an increased number of rapport-building behaviours and provided more ground rules instructions after receiving the training package, in comparison to pre-training. Participants did not increase their usage of open questions post-training in comparison to pre-training. Moreover, the training package shows initial success in improving non-police professionals' skills in documenting cases of SGBV using rapport building, ground rules, and documenting the survivor's independent voice. Additionally, participants in the current study showed great aptitude at documenting a survivor's independent voice pre-training as well as post-training, in comparison to building rapport and providing ground rules instructions. This was to be expected given their awareness of SGBV and prioritising the voices of survivors. Therefore, further recommendations are posited to amend the current training package to continue to improve non-police first responders' interview skills, focusing on their questioning strategies.

5.10.1 Key Findings

The current training significantly improved the interviewers' use of rapport-building behaviours. This is encouraging, as rapport-building is associated with increased detail (Fisher & Geiselman, 1992; Risan et al., 2020) and accuracy of information provided by interviewees (Kieckhaefer et al., 2014; Vallano et al., 2015). To date, rapport building has not been a primary focus of all training evaluations (Benson & Powell, 2015), possibly because these training packages focused on police interviewers who should be familiar with rapport. Therefore, the current study was the first to evaluate a co-developed interview training

programme that was beneficial in increasing community actors' use of rapport-building behaviours when documenting cases of SGBV in an LMIC.

Furthermore, we found that interviewers improved in the number of ground rules instructions that they provided after receiving the interview training. Ground rules instructions are recommended as they increase the documentation of accurate accounts from survivors (Fessinger et al., 2021; Scoboria & Fisico, 2013). Additionally, interviewees may benefit from ground rules instructions as ground rules help to manage their expectations for the interview process and aid them with how to report their memory evidence as accurately as possible without guessing (Ali et al., 2020). However, Ali et al. (2020) found the benefit of ground rules instructions on adult participants' reporting accuracy was only significant when participants practised the use of ground rules in reporting. Therefore, future training packages should encourage interviewers to practise with survivors how to implement ground rules to maximise accuracy within their documentation.

In accordance with the improvement in both rapport-building behaviours and the provision of ground rules instructions, we did not find a significant difference in interview duration between pre-training and post-training. Previous researchers have found that interviewers should be able to obtain key information in a shorter time frame post-training (Benson & Powell, 2015). In comparison, our training package focussed on improving the pre-information-gathering phase of the interview (e.g., rapport building and ground rules instructions) which increased following the receipt of training. As such, the information-gathering period of the interview may have been shorter post-training, but the overall length of the interview remained stable due to the increased time spent in the pre-information-gathering phase of the interview. Moreover, our non-police first responders were reacting positively to the training provided and devoting further time to providing a comfortable

environment and setting expectations for the interview that would facilitate the most complete and accurate documentation from the survivor.

Whilst the current training programme improved the pre-information gathering phase of the interview post-training, it did not improve the questioning strategies used within the information gathering phase of the interview. Contrary to our hypotheses, following training we did not find an increase in open questions asked or a decrease in closed and leading questions asked. Previous research training police investigators showed contrasting results that investigators asked more open questions and fewer closed questions following training (Benson & Powell, 2015; Lawrie et al., 2021). We may have found more closed questions than in previous research post-training due to the amount of information freely recalled by the mock survivor. We found that participants acting in the role of the mock survivor freely volunteered elongated recall including investigation-relevant material; even when this was not the focus of the current training. This was likely due to prior knowledge of information required in SGBV cases. Due to these detailed disclosures, interviewers in the current study may have instead focused on closed questions to obtain specific details not previously disclosed within the free recall. However, trained actors used in other training studies (Benson & Powell, 2015; Lawrie et al., 2021) would have provided a more standardised method of responding, thus investigators would have needed to use open questioning strategies to receive detailed responses (Powell et al., 2022). Future training might consider using trained actors or avatars to standardise the mock interview (Pompedda et al., 2015); however, this was not used within the current training due to the resource constraints in the setting where the training was provided in Kenya.

With regards to open questions, this research may not have found an increase post-training as they are the most difficult to train and implement (Benson & Powell, 2015; Lamb et al.,

2008). The current study may have found different results from previous research due to the differences in training package delivery. Benson and Powell (2015) delivered their training to police investigators over the course of several months, which allowed them to provide more intensive training with opportunities for practice and feedback that we know are integral to interview skills (Powell, 2008). In comparison, the current training package was delivered in a much shorter time frame (one day). This was to train as many non-police first responders as possible to document SGBV disclosures accurately considering the impending election period, which we knew historically came with an influx of SGBV cases (Odhiambo, 2017). Therefore, the results may differ from previous research due to the duration and intensity of other training packages. Moreover, whilst the findings of this interview training package are promising, more work is needed to devote extended time and resources to training open-questioning strategies. We recommend the use of previously validated training techniques such as prolonged practice and feedback (Lamb et al., 2002; Powell, 2008) and interview protocol scripts for interviewers to use that ensure they implement open-ended prompts (Sternberg et al., 1999; Stevens et al., under review (Chapter 6)).

5.11 General Discussion

Ours was the first study to investigate the effectiveness of an innovative interviewing training package with non-police first responders' in a humanitarian context. Study 1 found that participants' knowledge of best-practice interviewing increased following training, especially in duty bearers with higher levels of English proficiency. Additionally, all participants were more accurately able to identify recommended interview behaviours in comparison to problematic interviewer behaviours. Recommended behaviours were either more salient within our written evaluation or were easier to locate as they were the focus of the training programme.

Study 2 found that overall interview performance increased over time when accounting for the nested effects of participants and item difficulty on our evaluation checklist. Interview performance did not differ between duty bearers and Network members, which suggests that our training was effective in improving interview behaviours across all non-police first responders trained. Furthermore, we found improved model fit when including an interaction term between the interview skill set (rapport-building, ground rules, independent voice, questioning strategies) and time point. We found that participants used more rapport-building behaviours and provided more ground rules instructions post-training but did not improve the questioning strategies used. However, as the use of open questions is a difficult skill to train even in experienced police officers (Lamb et al., 2002); the findings of this research still offer clear support for the use of this training package in improving non-police first responders' ability to document SGBV cases. Most importantly, this training improved participants' ability to apply rapport-building behaviours and provide ground rules instructions, which will improve both the quantity (Fisher & Geiselman, 1992; Risan et al., 2020) and quality (Kieckhaefer et al., 2014; Vallano et al., 2015) of information obtained from survivors. Non-police community actors are frequently first responders to cases of SGBV globally. Therefore, the results of the current study offer pivotal insights into the capacity to train these individuals to use interview best-practice; such that the memory evidence they document can be preserved accurately and without contamination. These detailed and accurate accounts may be used in future criminal justice proceedings or to document SGBV prevalence to inform social change.

5.11.1 Limitations and Future Directions

Whilst the current training package was novel in its delivery to community actors in humanitarian contexts and effective in improving interview best-practice, it is not without

limitations. English was the selected language for service delivery due to its consistency across regions and its use within governmental proceedings in Kenya. Members of the Network may have found the training more accessible if it was conducted in their first language. However, potential differences in English proficiency between duty bearers and Network members only impacted performance on the written evaluation test (Study 1) and not performance on the mock interview (Study 2). Therefore, this suggests that there may not have been substantial language disparities between the duty bearers and the Network members, or that these differences were exacerbated within a written test and not when measuring practical skills. Nevertheless, this difference in written and spoken language is important for future consideration, as Network members will use spoken language to conduct the interview but must then transcribe the statement into a written documentation form (Stevens et al., under review (Chapter 6)). Moreover, future research should consider the potential differences in English abilities between spoken and written language to investigate the accuracy of this transcription.

Additionally, whilst interviews should be conducted in English for use in future criminal justice proceedings, there are instances where they may be conducted in Swahili (i.e., when the survivor does not speak English). Therefore, to promote sustainability and accessibility of the current training programme to all non-police first responders, we are working with our NGO partners who co-designed the training to translate all resources into Swahili. This will enable us to generalise our training package and train first responders who otherwise would not have been able to access the training delivered in English.

Furthermore, future research should consider the specific occupation of each participant, as well as what prior training they have received regarding SGBV either within their occupation or from the WKF, and their prior exposure to survivors of SGBV within their

occupation. When comparing individuals working in child protective services to individuals studying child welfare, researchers found that participants who had completed their education and were working within protection services used more open questions during an interview (Hassan et al., 2023). Therefore, prior education and exposure to cases may impact interview performance (e.g., use of open questions) that was not accounted for within the current research. Nevertheless, the current findings still provide novel insights exploring how community actors can be trained to take memory documentation from survivors of SGBV.

The current training package utilised many different methods of learning, including mock interviews (role-play), group discussions, feedback, and written reflections. However, as the training package was delivered in a short time frame due to time constraints with the upcoming election period, we may not have found maximum improvements in interview skills. Previous interview training studies have found that best-practice interview skills are difficult to train and need practice and follow-up training for the skills to be sustained (Lamb et al., 2002; Powell, 2008). Therefore, future training packages should build in follow-up sessions with practice and feedback to ensure interview skills are sustained over time (Benson & Powell, 2015; Brubacher et al., 2022).

Current research is exploring the use of AI chatbot avatars (Haginoya et al., 2023; Røed et al., 2023) to provide practical experience and direct feedback to participants. Røed et al. (2023) found that participants increased their use of open questions after receiving feedback from an AI avatar about their question strategy usage (i.e., the proportion of open questions they used). However, this system was a text-only chatbot. Haginoya et al. (2023) extended this to use verbal responses for both the interviewer and the AI avatar. They found that participants used more open questions after receiving feedback from the AI avatar, and if the AI avatar modelled appropriate questioning strategies for them, in comparison to no feedback

or modelling. Therefore, within the Global North, methods are being constructed to create sustainable practice and feedback opportunities without trainers having to follow-up with participants. Future research is needed to explore if this increases skill maintenance over time.

However, whilst this is substantial progress to facilitating continuous practice and follow-up with trainees, this is not feasible in a low-resource environment such as an LMIC, where individuals may not have access to data (Connecting Africa, 2021), let alone this advanced technology. The current training did not include a follow-up evaluation due to resource constraints. For example, in this LMIC context, there were no resources to use avatars to provide feedback and no travel funding for trainers or trainees to attend a follow-up evaluation. Instead, to promote the use of interview best-practice over time, we provided trainees with an aide memoire card (Clarke & Milne, 2001; 2017). An aide memoire card provides trainees with instructions for how to conduct an interview that serves as a reminder of how to follow best practice. Our aide memoire card contained example conversation starters to conduct narrative practice and build rapport, a script to provide ground rules instructions, and guidance to begin the interview with an open question. Within future iterations of the training, we have extended this to include detailed guidance on how to safely arrange and prepare for an interview, a script of example open questions, and how to close an interview. We are investigating whether this increases the use of recommended interview behaviours in comparison to the current training.

In addition to follow-up sessions with practice and feedback, training programmes may benefit from observations of role models displaying recommended evidence-based interview behaviours. Researchers have found that when participants engage in vicarious observation as well as direct experiences (e.g., role-play learning activities) they have enhanced task performance in comparison to those who only have direct experiences (Hoover et al., 2012).

Social learning theory posits that we learn behaviour by imitating role models that we observe (Bandura, 1962). Therefore, future iterations of this training programme will incorporate a video-recorded mock interview that displays recommended interview behaviours for participants to imitate. This will be paired with reflective discussions of why these behaviours are successful in eliciting accurate and detailed responses and how to emulate these behaviours. Trainees will then practise implementing these skills within mock interviews and receive feedback on their performance. Researchers have found that when trainees seek feedback on their interviewing skills their performance increases post-training (Yan et al., 2023). Therefore, we will encourage trainees to engage in feedback following both role modelling and role-play through mock interviews. The combination of vicarious learning, reflection, practice, and feedback should further enhance behavioural improvements.

Furthermore, whilst the current training improved interviewers' skills within mock interviews, this is an artificial environment and does not show whether these skills translated to the interviewer's documentation attempts in the field (Benson & Powell, 2015). During follow-up research, we investigated the impact of our training programme on the number of memory details recorded from survivors of sexual violence in Kenya. We found that following training, interviewers recorded more memory details in total and more details about the perpetrator's behaviour in comparison to pre-training (Stevens et al., under review). Whilst, from this field research we cannot ascertain the accuracy of the information recorded, training has a benefit on the quantity of details documented. Future research should combine field and lab-based interviews to ensure that training improves both the quality and the quantity of information recorded. Moreover, the addition of lab research would allow us to investigate the benefit of our training programme using more standardised procedures, as within field interviews there is no way to standardise the responses provided by interviewees.

For example, survivors may have provided limited or elaborated disclosures irrespective of interviewers' use of interview best-practice. Therefore, future research should evaluate the interviewers' performance using both lab-based mock interviews to reliably measure accuracy and field-based interviews to investigate how interviewers use these skills on the ground.

Finally, future research should qualitatively explore the experiences of the interviewee providing the disclosure and whether these experiences differ between trained interviewers and untrained interviewers. This in-depth understanding from the survivor's perspective can ensure that the training programmes are benefiting not only the memory evidence being recorded but also the experiences of the survivors.

5.11.2 Policy Implications

The current research offers policy implications for both governmental and non-governmental organisations globally. Given the recent upsurge in interest regarding cross-cultural interviewing (Hope et al., 2022; Smith et al., 2019; Vredeveltdt et al., 2023) and protocols to document cases of SGBV internationally (FCDO, 2017; Murad Code, 2022), this is a pertinent and timely issue. Moreover, by improving the way that interviews are conducted by first responders, we can improve investigation capacity and prosecution rates, as better-quality interviews are associated with increased prosecutions (Pipe et al., 2013). This may benefit survivors but also communities as a whole, as prolific sexual offenders have been found to perpetrate crimes against approximately 300 individuals before they are arrested (Ahlmeier et al., 2000; Lussier et al., 2011). Therefore, by training non-police first responders to use evidence-based interview skills we can document detailed and accurate statements that will preserve memory over time for use in future criminal justice proceedings (Ebbesen & Rienick, 1998; Gabbert et al., 2009; Stevens et al., 2022). This will assist in both providing

justice for survivors and creating safer communities by providing evidence to convict offenders.

Furthermore, the success of this innovative training programme with first responders to cases of SGBV highlights the importance of deploying such training to all first responders (e.g., medical professionals, police, education providers, NGOs). SGBV is a highly prevalent issue worldwide (World Health Organization, 2021). Therefore, it is pivotal that governments and NGOs prioritise mandatory and systematic training of staff and volunteers to facilitate documentation according to best practice. Additionally, the innovative training programme constructed for the current study is a pivotal alternative to costly and resource-intensive training (i.e., the Protocol, FCDO, 2017). Therefore, this training could be implemented in other LMICs to offer first responders in low-resource areas the opportunity to learn interview best-practice. The main cost would be the co-development of culturally informed tools for use within that specific context and consultation for the train-the-trainer course. Once this is implemented, the training course can then be sustainably delivered and monitored in situ, with online supervision from academic partners for long-term support. This is a more valid, cost-effective, context-specific, and long-term solution than requiring non-police first responders from LMICs to travel internationally or use technology-facilitated self-teaching guides to learn interview best-practice. However, resources should still be allocated to international human rights organisations and NGOs to facilitate the mandatory training of all first responders to SGBV worldwide. This funding would allow for the co-creation of culturally relevant training programmes (Hope et al., 2022), efficient service delivery, and monitoring and evaluation of the first responder training to ensure quality provision (Smith et al., 2019).

Additionally, governments should provide funding opportunities and resources to facilitate knowledge-sharing partnerships among human rights organisations, NGOs, and

researchers. This funding could be used to convene networking opportunities, provide an online repository for information and discussions, or pay for individuals' time to take part in steering groups or mentoring programmes. These knowledge-sharing partnerships will allow organisations to share expertise and positive case studies such as the current training programme. This will accelerate progress through collaboration; however, we should ensure that survivors' voices are at the forefront of all exchanges by including organisations such as the WKF and the Network and other survivors' networks globally. This will guarantee that all discussions and recommendations remain survivor-centred to promote positive change.

5.11.3 Conclusion

To conclude, first responders who document incidents of SGBV must receive appropriate training to ensure that the memory evidence documented is accurate, not contaminated and can be used later in criminal justice proceedings. Due to the global prevalence of SGBV the Protocol (FCDO, 2017) and the Murad Code (2022) have been designed to aid first responders in documenting disclosures of SGBV; however, this study is the first to investigate whether non-police first responders can be trained to use these best-practice guidelines in humanitarian contexts. Overall, the findings of the training programme are positive in training participants to improve their use of rapport building and ground rules. However, more work is needed to train the complex skill of using open questioning strategies to obtain the most complete and accurate documentation. Nevertheless, the current training package is a novel and useful first step to training on-the-ground first responders in an LMIC to document SGBV using interview best-practice.

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CHAPTER 6 A BEHAVIOURALLY INFORMED INTERVIEW WITH SURVIVORS OF SEXUAL VIOLENCE IN KENYA- A RANDOMISED CONTROL TRIAL

Chapter 6 is under review for publication at *Law and Human Behaviour* with the following author list: Stevens, L. M., Davies, K., Wagner, K., Kanja, W., George, A., Rockowitz, S., Kohl, A. T., & Flowe, H. D.

Based on the findings of Chapters 3-5, we conducted a randomised control trial to investigate the use of a behaviourally informed documentation form to record statements from survivors of sexual violence in Kenya. We combined our innovative interview training programme (Chapter 5; Stevens et al., under review) with an alternative reporting method (Chapter 3; Stevens et al., 2024) using behaviourally informed questions (Chapter 4; Stevens et al., 2022). We explored whether interviewers recorded more memory details from survivors of sexual violence after receiving our interview training package, and when using our behaviourally informed documentation tool. Our findings and recommendations are discussed for humanitarian agencies and policy workers globally, but particularly in low-resource areas.

As this manuscript is under review it is masked for blind review purposes. Additionally, we provide all ethics information and assumptions statistics within an additional appendix that is not contained within this manuscript, as this was not required by the journal (see Appendix 5.1, 5.2, 6.1).

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- Stevens, L. M., Walsh, R., Kuhn, E., Kanja, W., Cosnett, W., Kim, E., Rockowitz, S., & Flowe, H. D. (under review) Evaluation of Innovative Interviewing Training to document cases of SGBV in Humanitarian Contexts.

6.1 Abstract

Many individuals experience gender-based violence, yet few report to the police. Instead, survivors often turn to community organisations, such as the Wangu Kanja Foundation (WKF) in Kenya. However, these organisations typically use basic intake forms and lack training in case documentation. To address this, we conducted a randomised control trial (RCT) to test the effectiveness of training interviewers in best-practice techniques and equipping them with a behaviourally informed documentation tool. A 2 phase (baseline pre-RCT, experimental RCT) x 2 documentation form (behaviourally informed, standard WKF intake) RCT was conducted. We collected data from 361 adult survivors of sexual violence in Kenya. Linear mixed effects models indicated that interviews conducted using the behaviourally informed documentation form recorded more details in total compared to the standard WKF intake form, as well as more behaviourally relevant details. Additionally, the interviewer influenced the amount of information recorded and more information was documented after the interviewers received our training. We conclude that community actors can document detailed accounts from survivors of sexual violence using a behaviourally informed documentation tool following specialised interview training. These accounts will be pivotal in increasing investigation potential and prosecution of prolific sexual offenders.

Keywords: Sexual Violence, Kenya, Interview Training, Memory Documentation, Behavioural Crime Linkage

6.2 A Behaviourally Informed Interview with Survivors of Sexual Violence in Kenya - A Randomised Control Trial

Sexual violence is defined by the World Health Organization (WHO) as ‘any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic or otherwise directed against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting’ (WHO, 2024). Whilst sexual violence is an important issue globally (WHO, 2021), victimisation rates are exacerbated in areas high in gender inequality (Fatusi & Oyeledun, 2002; Yodanis, 2004), such as in low-and-middle income countries (LMICs; WHO, 2021). Kenya is one such area where national statistics and victimisation surveys found that 38% of all adult women (over the age of 15) have experienced physical and/or sexual violence by an intimate partner within their lifetime (OECD, 2024). Survivors frequently do not report to the police, and as a result, few cases ever reach the prosecution stage, let alone result in a conviction (Rockowitz et al., 2024). Survivors often do not use formal reporting channels due to the fear and stigma surrounding the offence (Shaibakova, 2020; Wagner et al., 2022) and unsympathetic responses from the police (Ondicho, 2018). Additionally, in Kenya, there are limited resources and infrastructure to investigate and successfully prosecute cases (Oduor et al., 2014). Therefore, survivors more frequently seek assistance from community actors and non-governmental organisations, such as the Wangu Kanja Foundation (WKF).

The WKF is a non-governmental organisation that assists in restoring dignity to all survivors of sexual and gender-based violence (SGBV). They assist survivors in accessing support services (medical, psychological, safe shelters) and legal aid should they wish to pursue the case in the criminal justice system (for more information on the WKF see Ji et al.,

2022). The WKF is also the convener of the Survivors of Sexual Violence in Kenya Network (hereafter, the Network). The Network consists of human rights defenders (HRDs) in all 47 counties across Kenya. All Network members have personally faced SGBV themselves. Therefore, they are committed to assisting other survivors and advocating for better services and treatment of survivors by the criminal justice system. HRDs are trained by the WKF and are known within their communities as individuals from whom survivors can seek assistance without being put into further danger. Members of the WKF and the Network often serve as first responders to incidents of SGBV. This is a crucial role, as the survivor's statement often represents the primary and only evidence in such cases (Kebbell et al., 2007). The thoroughness and accuracy of this initial documentation can significantly influence the outcomes of legal proceedings, underscoring its importance in achieving justice for survivors (Pipe et al., 2013).

The WKF and the Network routinely document survivor accounts of SGBV and have amassed the most extensive dataset on sexual violence in Kenya (Ji et al., 2022). Whilst the WKF and the Network are well-meaning in aiding survivors and successful in accessing these populations; they do not have the training or resource infrastructure to document sexual violence cases effectively (i.e., in a manner that captures complete and accurate memory documentation without contamination). Additionally, the WKF and the Network do not have the training or resources to obtain detailed accounts from survivors regarding the perpetrator's behaviours. This is a critical shortfall given the importance of such information for the application of behavioural crime linkage (BCL), a process that aids in the apprehension of serial offenders. BCL identifies serial offenders by highlighting patterns of behavioural consistency and distinctiveness to connect similar behaviours across multiple offences (Woodhams et al., 2007). Recognising these challenges, this study aimed to train members of

the Network and provide them with a behaviourally informed documentation tool that would increase both the total amount of details obtained from survivors, including the amount of behaviourally relevant details about the perpetrator's behaviour during the offence. In what follows, we discuss (1) research on BCL; (2) its potential to aid criminal investigations in LMICs; (3) research on a behaviourally informed interview tool; and (4) training community actors to document first responses from survivors. Following this, we present an overview of the current study and its aims.

6.2.1 Behavioural Crime Linkage

Potential behaviours of interest in BCL when linking crimes committed by a serial offender include how the perpetrator approached the survivor, how they interacted with the survivor during the offence, how they maintained control over the survivor during the offence, and how they departed the offence (Davies & Woodhams, 2019; Woodhams & Bennell, 2014). BCL is pivotal in cases of sexual violence where perpetrators are commonly serial, with some offenders having on average 300 victims before they are arrested (Ahlmeyer et al., 2000; Lussier et al., 2011). Researchers have found that BCL is effective at accurately connecting multiple offences committed by the same perpetrator in the Global North (Bennell et al., 2010), including serial stranger sexual offences (Slater et al., 2015), and in the Global South (Woodhams & Labuschagne, 2012). However, research in the Global South is limited to pilot work in South Africa (Woodhams & Labuschagne, 2012), and has not been extended to understand serial sexual offences in other LMICs.

Whilst, behavioural information is useful for BCL and apprehending serial offenders, it is also beneficial in aiding national security via situational crime prevention (Chiu et al., 2021). Situational crime prevention uses behaviourally informed offence data to protect

communities, by identifying high-risk crime opportunities (i.e., geographical, and temporal crime hotspots) and implementing appropriate security measures to prevent them (Leclerc et al., 2016). Mobile phone applications have successfully been utilised in Kenya for situational crime prevention purposes (Oduor et al., 2014), laying the foundation for further behaviourally informed documentation techniques within the community.

6.2.2 Behavioural Crime Linkage in LMICs

There are specific reasons why obtaining information regarding the offender's behaviour may be helpful in LMIC contexts like Kenya. In countries such as the UK, behavioural information is obtained from detailed police interviews and entered into computer systems (i.e., the Violent Crime Linkage Analysis System, or ViCLAS; Collins et al., 1998) to link serial offences (Woodhams et al., 2019). However, LMICs such as Kenya do not have trained police forces or the technological resources (Oduor et al., 2014) to complete behavioural analysis. As such, interview approaches and training programmes need to be developed to obtain information regarding the offender's *modus operandi* (MO; distinct and unique manner of offending).

Ascertaining the perpetrator's MO can increase the investigative capacity of the police, which is especially valuable in Kenya considering the scarcity of police resources. BCL is relatively low-cost in comparison to other investigative techniques and forensic technologies. For example, collecting and analysing DNA evidence is difficult in LMICs, as they have limited forensic equipment (Smith et al., 2019). Moreover, BCL could aid in the apprehension of serial sexual perpetrators and prevent future offences by allocating the police's limited resources (e.g., time, money, and personnel) to investigations that are more likely to lead to the apprehension of a serial offender. Furthermore, BCL has the potential to

increase investigative capacity by providing corroborating witnesses against a single offender. This may happen if multiple survivors, who are not known to one another, independently recall the same unique and distinct behavioural information that can be attributed to one offender (Stevens, Kanja et al., under review). Therefore, BCL can strengthen the credibility of each survivor's account and may increase the likelihood of successful prosecution, while simultaneously empowering the survivors by amplifying their voices within the investigation.

6.2.3 Behavioural Interview Approach

To date, whilst BCL has been used to connect serial offenders to their offences in the Global North (Bennell et al., 2010) and the Global South (Woodhams & Labuschagne, 2012), there has been limited effort to construct an interview approach that specifically obtains the behavioural information required for BCL (Stevens et al., 2022). Alongside the WKF, we have developed a novel interview approach using BCL principles (behaviourally informed documentation form) to apprehend serial sexual perpetrators. This interview approach asks the survivor specific questions regarding the perpetrator's behaviours before, during, and after the offence to acquire unique and distinctive information that could help identify them. By asking behaviourally informed questions, we can increase the amount of information obtained regarding the perpetrator's behaviour to aid investigations and prosecutions. Additionally, by obtaining more behavioural information we are providing a greater understanding of the offending landscape to showcase that sexual violence goes beyond stereotypical rape myths. This will provide better support to advocate for change.

Currently, the WKF and the Network have been documenting survivors' experiences of sexual violence using the mobile phone application SV_Case Study Mobile Application (hereafter referred to as MobApp). MobApp documents a free recall account of the survivors'

experience before asking specific questions about the type and location of the offence, the identity of the perpetrator, and the date and time the offence took place. We recently investigated whether MobApp can be adapted to collect behavioural information and the impact of these interview techniques on participants' memory over time in comparison to a delay period before the interview (Stevens et al., 2022). We showed participants ($N = 90$) a mock crime video of a burglary that contained information pertinent to BCL (e.g., how the perpetrator approached the offence, maintained control over the offence, and left the offence (Meenaghan et al., 2018; Tonkin & Weeks, 2021)). We selected a non-violent mock crime video in place of a video about sexual violence as this study was conducted during COVID-19 where participants witnessed the video online, without the experimenter present. As such, we wanted to minimise risk to the participants and BCL has been established within research to be successful in linking serial offenders in burglary cases (Tonkin et al., 2012).

Following the presentation of the mock crime video participants were randomly allocated to one of three conditions; 1) received an immediate interview using the standard MobApp questions ($n=30$), 2) received an immediate interview using the behaviourally informed MobApp (MobApp+) that contained additional questions about the perpetrator's behaviour ($n=30$), or 3) did not receive an initial recall attempt that mimics delay to reporting in real-life ($n=30$) (Stevens et al., 2022). All conditions then returned following one week to complete a free recall account of the mock crime video they witnessed, where participants were instructed to be as accurate as possible and not guess. Participants' memory documentation was coded for total details recalled (correct + incorrect), accuracy rate (sum of correct details / sum of total details recalled), total number of behaviourally relevant details recalled (correct + incorrect), and accuracy rate of behaviourally relevant details (sum of correct behaviourally relevant details / total behaviourally relevant details). Overall, we found

that at one week participants who received an initial recall attempt using either MobApp or MobApp+ had increased recall accuracy in comparison to participants with no initial recall attempt (Stevens et al., 2022). For participants who received an initial recall attempt, the overall accuracy rate was preserved over the one week period and there was no detrimental impact on the accuracy rate by asking behaviourally informed questions. Therefore, using such interview approaches can benefit investigations by preserving the accuracy of survivors' memories over time, which is crucial for future criminal justice proceedings (Ebbesen & Reinick, 1998; Gabbert et al., 2009). While the experimental study found promising results for obtaining behavioural information within an interview, external validity may be limited. Crucially, the current research extends this work by conducting a field study with survivors of sexual violence in Kenya, providing a stronger test of whether BCL is advantageous in real-world settings.

6.2.4 Training Developments

Our previous research highlights the potential benefits of a behaviourally informed interview approach in preserving memory accuracy. However, it is important to note that there is an individual (HRD) who facilitates this memory documentation using MobApp from the survivor. Previous research interviewing survivors of sexual violence has found that the interviewer's behaviours impact the survivor's willingness to disclose detailed statements (Patterson, 2011). For example, survivors reported that they were more willing to disclose when interviewers took the time to establish rapport and used open questions (Patterson, 2011). However, these skills are not always displayed by police officers (Schreiber Compo et al., 2012) and there will be individual differences in interviewers' abilities. However, skill in investigative interviewing can be improved following training (Benson & Powell, 2015;

Zekiroski et al., 2024). As such, the HRD recording the memory documentation from the survivor requires training to ensure that they document the memory evidence by best practice.

To date, limited research has been conducted on training non-police first responders to use interview best-practice in humanitarian contexts. Therefore, alongside the WKF we have constructed a training package based on the Achieving Best Evidence interview guidance (Ministry of Justice, 2022), the International Protocol on the Documentation and Investigation of Sexual Violence in Conflict (FCDO, 2017), the Murad Code (2022), and the NICHHD (Lamb et al., 2007). The training package teaches HRDs minimum best-practice interview principles to use when documenting cases with survivors (e.g., rapport-building behaviours, ground rules administration, and documenting a survivor's independent account using open questions). We trained 47 HRDs in Kenya and found that post-training, HRDs had improved knowledge of interview best practice, displayed an increased number of rapport-building behaviours, and provided more ground rules instructions (Stevens, Walsh et al., under review). Moreover, all HRDs within the current RCT received this interview training. This was combined with the behaviourally informed documentation tool to facilitate complete documentation of statements from survivors of sexual violence. Based on our previous findings that our training package improved interviewers use of rapport building behaviours, we hypothesise that interviewers will record more details after receiving training; as survivors may be more willing to disclose to an interviewer that has built rapport with them (Patterson, 2011; Risan et al., 2020).

6.2.5 Current Study

The present study developed an innovative behaviourally informed interview approach to document memory evidence from survivors of sexual violence. We conducted a

randomised control trial (RCT) comparing the number of memory details recorded, as well as behaviourally relevant details recorded, between our behaviourally informed interview approach and the standard intake form used by the WKF⁵. Additionally, we collected baseline data using the standard WKF intake form to explore how HRDs documented memory evidence before receiving interviewing training as part of the current RCT. From this, we investigated the differences in memory details recorded using the standard WKF intake form between pre-RCT training and post-RCT training. We hypothesised that participants who reported using the behaviourally informed interview tool would report more details in total, as well as more behaviourally relevant details, in comparison to participants who reported using the standard WKF intake form. Additionally, we hypothesised that HRDs would record more memory details using the standard WKF intake form after receiving the interview training programme.

6.3 Method

6.3.1 Design

A 2 phase (baseline pre-RCT, experimental RCT) x 2 documentation form (behaviourally informed documentation form, standard WKF intake form) randomised control trial was conducted, where all data collectors were blind to the aims of the research. The design was not fully factorial with HRDs only recording survivors' statements using the standard WKF intake form within the baseline pre-RCT phase, as this was collected before the behaviourally informed documentation form was implemented. Memory documentation was assessed by the total number of details obtained from survivors and the total number of behaviourally relevant details obtained.

⁵ The standard intake form used by the WKF asks the same questions as MobApp.

6.3.2 Participants

We trained 18 HRDs to collect data for the RCT. Overall, within the experimental phase, 360 participants were randomly allocated to receive the behaviourally informed documentation form ($n = 180$) or the standard WKF intake form ($n = 180$). Our exclusion criteria included; 1) if a HRD had no baseline documentation of adult sexual violence cases pre-RCT ($n = 1$ HRD, $n = 20$ participants), 2) where HRDs did not adhere to documentation training ($n = 3$ HRDs, $n = 60$ participants), 3) cases about child survivors or cases of historic child abuse ($n = 23$), and 4) cases not specifically related to sexual violence (e.g., physical, financial, or emotional abuse that has not been empirically investigated within BCL, $n = 25$). A case could be excluded for more than one reason. Our final sample in the experimental phase included 236 participants ($n = 125$ standard WKF intake form, $n = 111$ behaviourally informed documentation form). All participants were survivors of sexual violence from Kenya who sought assistance from the HRDs associated with the WKF and the Network between April and September 2023. Survivors were aged between 18-59 ($M age = 29.89$, $SD = 8.17$), and 92% identified as female.

Within the baseline data phase, we also obtained data from the 14 HRDs that 1) adhered to the RCT documentation training, and 2) documented statements from adult survivors of sexual violence within the previous year before taking part in the RCT training and data collection. Overall, we collected data from 125 adult survivors of sexual violence ($M age = 31.35$, $SD = 8.30$, range 19-61; 94% identified as female) for the baseline condition.

Ethical approval was granted for this study by X. Informed consent was obtained from HRDs to take part in the RCT training and participants to have their statements recorded.

6.3.3 Materials

6.3.3.1 Standard WKF Intake Form

The standard intake form used by the WKF begins by obtaining information regarding the date, time, and location of the incident (both the city/town and the context, such as the survivor's house), as well as demographic information about the survivor (e.g., age and sex) (see Appendix A). Following this, survivors are asked to provide a free recall description of the offence. Survivors are then asked about the number of perpetrators involved in the offence, the survivor-perpetrator relationship, and perpetrator demographics (e.g., age and sex). Whilst not noted in the current research, survivors also provided information about any post-incident services they access (e.g., police, medical, safe shelter). For more information on the standard intake form see Rockowitz et al. (2021). For the purpose of this research, the standard WKF intake form was completed using a mobile phone questionnaire during the baseline phase. Due to technological issues that arose during baseline collection (e.g., phone and data access), the experimental phase was conducted in a paper format.

The standard WKF intake form collected during the baseline phase differed from the experimental phase in three ways. Firstly, due to the use of a mobile phone application, all questions were forced-choice questions to progress to the next question. This resulted in no missing responses within the baseline phase. Secondly, whilst researchers advised that the questions needed to remain consistent within the standard WKF intake form between phases, our partners adapted the baseline form to remove two questions: 1) the context of the offence (e.g., survivor's house); and 2) the age of the perpetrator. These questions were replaced with prompts asking about the presence of a weapon and if there was a weapon present, details of the weapon used. Finally, against advice from the research team, our partners designed the baseline phase standard intake form to bypass specific questions prompting information about

the perpetrator and their behaviour (e.g., age, sex, number of perpetrator(s), weapon usage) if the survivor recorded that they did not know the perpetrator. However, due to the importance of ascertaining HRDs' baseline interview performance, we continued to compare the two standard intake forms. Additionally, we did not deem this comparison unfair, as both forms contained the same number of free recall prompts and specific questions, and HRDs were instructed to record an answer to every question during the experimental phase. Therefore, the structure and content of the forms do not differ substantially to hinder comparison.

6.3.3.2 Behaviourally Informed Documentation Form

The behaviourally informed documentation form contained all of the same questions as the standard WKF intake form, with the addition of questions about the unique and distinct behaviours of the perpetrator during the offence (i.e., behavioural information; see Appendix B). In addition to the demographic questions asked in the standard WKF intake form, the behaviourally informed documentation form also asked for the current age of the survivor (as opposed to age at the time of offence), the survivor's relationship status, whether the survivor has any children (if so, how many) and their employment status. When asking for information regarding the perpetrator, the behaviourally informed documentation form asked two questions to record information about the perpetrator's appearance and any distinctive features that would aid in their identification. Following the free recall description of the incident and specific questions regarding the date, time, duration, and location of the incident, the behaviourally informed documentation tool asked 13 additional BCL questions. The BCL questions gathered behaviourally relevant information regarding 1) what the survivor was doing before the offence, 2) how the perpetrator approached the survivor (including direction (i.e., from in front/behind)), 3) how the perpetrator planned the offence, 4) what forensic awareness the perpetrator displayed, 5) whether the perpetrator used a weapon, 6) whether the

perpetrator moved the survivor to a different location at any stage during the offence, 7) the transport the perpetrator used, 8) if and how the perpetrator left the crime scene, 9) if the perpetrator took something from the survivor, 10) if the perpetrator left anything with the survivor, 11) what the perpetrator said to the survivor, 12) any distinctive behaviour demonstrated by the perpetrator, and 13) whether the perpetrator was under the influence of any substances. Questions were a combination of free recall, cued-invitations, and option-posing, but all option-posing questions had an option to state 'I don't know' or 'other' with space to expand their experience. The behaviourally informed documentation form was conducted in paper format, along with all additional perpetrator forms.

When designing the behaviourally informed questionnaire we formulated all possible behaviourally informed questions based on previous research (Meenaghan et al., 2018; Stevens et al., 2022; Tonkin & Weeks, 2021). Following this, we obtained feedback on our tool from practitioner experts in the field (e.g., ViCLAS crime analysts) and from members of the WKF and the Network. This ensured that our questions would obtain behavioural information that analysts need to connect cases, whilst remaining culturally sensitive, survivor-centred, and trauma-informed by taking the perspective of our Kenyan partners into account. Based on this feedback, we finalised the behaviourally informed documentation tool, making certain that all questions were relevant and phrased appropriately according to both crime analysts and members of the WKF and the Network.

6.3.3.3 Additional Perpetrator Forms

For both the standard WKF intake form and the behaviourally informed documentation form in the experimental phase, an additional perpetrator form was constructed (see Appendix C). This additional perpetrator form contained questions that were relevant to perpetrator demographics and behaviours, capturing details about each perpetrator

and their role(s) during the offence. The standard WKF intake form included each perpetrator's age, gender, and relationship to the survivor. For the behaviourally informed documentation form, this included the aforementioned demographics and each of the behaviourally relevant questions, plus information about the perpetrator's appearance (including distinctive features).

6.3.4 Procedure

Before the RCT began, we collected baseline data using the standard WKF intake form with amendments described above. During the baseline phase, survivors sought assistance from HRDs working with the WKF and the Network during the election period in Kenya in 2022. Following baseline data collection, 18 HRDs received training on how to document memory evidence from survivors of sexual violence (see Stevens, Walsh et al., under review). This training was co-developed by researchers at the [MASKED UNIVERSITY] and staff at the WKF and Network. It trains HRDs to build rapport with survivors, administer ground rules before beginning an interview, and how to document a survivor's independent voice (e.g., use open questions). Additionally, the HRDs in the current study received additional training on RCT methodology to conduct the data collection successfully (e.g., how to follow the randomisation procedure).

Immediately preceding training, each HRD received an RCT pack that contained printed copies of 10 standard WKF intake forms and 10 behaviourally informed documentation forms. Within each RCT pack the forms had been shuffled into a random order and labelled 1-20 to ensure the HRD documented each survivor's memory recall following the randomisation structure. The randomisation was noted by WKF employees on an excel spreadsheet to ensure HRDs collected data in the randomised order. When HRDs were called to assist a survivor, they used the documentation form at the top of their RCT pack until they

had documented all 20 cases. When documenting a disclosure with a survivor, HRDs would initially build rapport with the survivor by asking about a neutral or positive event. Following this, they would establish ground rules for the interview, such as that it is acceptable to answer ‘I don’t know’ to a question as opposed to guessing (Ministry of Justice, 2022). HRDs then asked each question on the form and documented the survivors’ responses. HRDs were instructed to record a response to each question and that ‘I don’t know’, ‘I don’t remember’, and ‘not applicable’ were all acceptable responses to record. If a survivor had multiple perpetrators, HRDs would ask the corresponding questions from the additional perpetrator form for each additional perpetrator. The HRDs were instructed to not interrupt survivors whilst they were recalling and to allow survivors to read over their documentation to clarify any misunderstandings they observed. All survivors were signposted to support services (e.g., medical, legal, psychological, and safe shelters) by the WKF at the end of the documentation attempt.

Once HRDs had completed the data collection, they returned the forms to the WKF where they were transferred to the research team using password-protected software. Documentation forms were transcribed by two members of the research team to collate the research data for coding and analysis. Ethically, the researcher team abided by the Kenyan Data Protection Act (2019), ensuring data anonymity (i.e., no names were documented within the forms).

6.3.5 Measures

Each intake form was coded for the total number of details recorded and the total number of behaviourally relevant details recorded. Total details were coded in accordance with prior research (Wright & Holliday, 2007), whereby all details relating to (A)ctions, (P)erson, (O)bjects, or (S)urrounding details were coded. For example, the statement ‘two

men leaving a shop' would be coded as 'two (1-P) men (1-P) leaving (1-A) a shop (1-S)' and would equate to four details in total. A detail was only coded the first time it was mentioned within the documentation. A sum of all details mentioned within the participants' documentation formed their total number of details. Behaviourally relevant details were coded in accordance with previous research (Meenaghan et al., 2018; Stevens et al., 2022; Tonkin & Weeks, 2021), whereby a behaviourally relevant detail was defined as 'as any information pertaining to an action the perpetrator committed or context to said action' (Stevens et al., 2022, p.6). For example, 'the man (1-P) drove off (1-A) on a motorbike (1-O)' would be coded as three behaviourally relevant details. This was further subdivided into the total number of behaviourally relevant details recorded during the free recall description in comparison to the specific behaviourally relevant questions.

6.3.6 Data Analysis

We conducted a series of linear mixed-effects models to investigate the effects of using a behaviourally informed documentation form on the total number of details and behaviourally relevant details reported by interviewees. Linear mixed-effects models were used to analyse the data as they accounted for the nested structure of interviews within interviewers, for which an analysis of variance would not account. Analyses were conducted using the lme4 package (Bates et al., 2015) in R (R Core Team, 2018). Assumptions tests were conducted on all models using the DHARMa package (Hartig, 2022) to assess for normal distribution, heteroscedasticity, and outliers within residuals. Alpha was set to .05 for all analyses and all significance tests were two-tailed.

For our initial analyses, we collapsed across the standard WKF intake form in both the baseline and the experimental phase to produce a better estimation of performance on the standard WKF intake form. For each dependent variable: total details recorded, total

behaviourally relevant details recorded, and behaviourally relevant details recorded within the free recall description, we conducted the following linear mixed-effects models; 1) a baseline model with each dependent variable predicted by documentation form (standard WKF intake form, behaviourally informed documentation form) (model 1), 2) model 1 with the addition of HRD interviewer as a random effect to account for individual differences in interviewing ability that may affect the number of details recorded, and 3) using a random slope between form and HRD interviewer to predict each dependent variable. Following the construction of our models, we used ANOVAs to ascertain which predictors yielded the best model fit for our data. If adding the interviewer as a random effect improved model fit, we descriptively explored the impact of the interviewer on the amount of information recorded.

To investigate the impact of phase on the number of details reported we conducted several analyses. First, we selected cases documented using the standard WKF intake form within both the baseline and the experimental phase. We conducted linear mixed-effects models predicting each dependent variable by phase. From this, we investigated the impact of RCT training on the amount of information recorded using the standard WKF intake form. Second, to ensure the robustness of our form effects, we selected cases collected within the experimental phase and replicated our initial analyses.

6.3.7 Inter-Rater Reliability

To assess inter-rater reliability, 20% of participant responses ($n = 80$ ($n = 20$ baseline phase standard WKF intake form, $n = 30$, experimental phase standard WKF intake form, $n = 30$ experimental phase behaviourally informed documentation tool)) were coded independently by a researcher blind to the research aims of the RCT. Responses were randomly selected across all three conditions and Cohen's Kappa was computed. Across all conditions, this analysis indicated strong levels of inter-rater agreement for both total ($\kappa =$

0.82) and behaviourally relevant details ($\kappa = 0.86$; McHugh, 2012). For reliability statistics separated by condition see Table 1. All discrepancies were discussed and resolved before completing the analysis.

Table 1. *Reliability Analysis by Condition*

Phase	Form	Total		Behaviourally Relevant	
		Kappa	<i>P</i> value	Kappa	<i>P</i> value
Baseline	Standard	.82 (Strong)	<.001	.81 (Strong)	<.001
Experimental	Standard	.93 (Almost Perfect)	<.001	1.00 (Almost Perfect)	<.001
	Behaviourally Informed	.69 (Moderate)	<.001	.72 (Moderate)	<.001

6.3.8 Data Availability

This study was not pre-registered and the data, corresponding code, and materials were not made publicly available due to ethical reasons. This was because our participants were survivors of sexual violence in Kenya and our data contain their personal experiences that we will not publicly share.

6.4 Results

6.4.1 Assumptions Checks

Preliminary assumptions checks for normal distribution, heteroscedasticity, and outliers within residuals reported that our data set contained outliers that may have skewed our results. To identify these outliers, we screened for participants with dependent variables that were two standard deviations above or below the mean (Yang et al., 2019). From this, we identified 8 participants ($n = 5$ experimental behaviourally informed documentation form, and $n = 3$ baseline standard WKF intake form) with recorded total details and total behaviourally relevant details two standard deviations above the mean. Additionally, we identified a further 10 participants ($n = 4$ experimental standard WKF intake form, $n = 2$ experimental behaviourally informed documentation form, and $n = 4$ baseline standard WKF intake form) with total behaviourally relevant details recorded within the free recall description two standard deviations above the mean. We removed these outliers from our data and all assumptions were met when re-analysed. We ran all of our models using both our complete dataset and our data with the outliers removed. There were no differences between the results found (see Appendix D for comparisons). As there will be outliers when recording memory evidence from survivors of SGBV in real life, both in terms of individual differences in memory performance and the interviewer recording the statement, we report here the findings from the complete dataset.

6.4.2 Information Recorded Across Documentation Forms

When collapsing across both the baseline and experimental phases, the standard WKF intake form had significantly fewer total details recorded compared to the behaviourally

informed documentation form ($\beta = -43.01$, $SE = 2.24$, $t = -19.17$, $p < .001$). Additionally, when the HRD interviewer was included in the model as a random effect, the standard WKF intake form still had significantly fewer total details recorded in comparison to the behaviourally informed documentation form ($\beta = -44.01$, $SE = 2.14$, $t = -20.56$, $p < .001$). Furthermore, the addition of HRD interviewer as a random effect significantly improved model fit in comparison to not including the interviewer within the model, $\chi^2(1) = 24.94$, $p < .001$. However, allowing the form effect to vary by interviewer did not provide a better model fit than including HRD interviewer as a random effect independently.

For total behaviourally relevant details, the standard WKF intake form had significantly fewer recorded details compared to the behaviourally informed documentation form ($\beta = -27.65$, $SE = 1.56$, $t = -17.74$, $p < .001$). With HRD interviewer added as a random effect to the model, the standard WKF intake form again had fewer behaviourally relevant details recorded in comparison to the behaviourally informed documentation form ($\beta = -27.99$, $SE = 1.49$, $t = -18.73$, $p < .001$). With regards to model fit, the addition of HRD interviewer as a random effect to the model significantly improved model fit, $\chi^2(1) = 21.90$, $p < .001$. However, the random slope between documentation form and interviewer did not further improve fit.

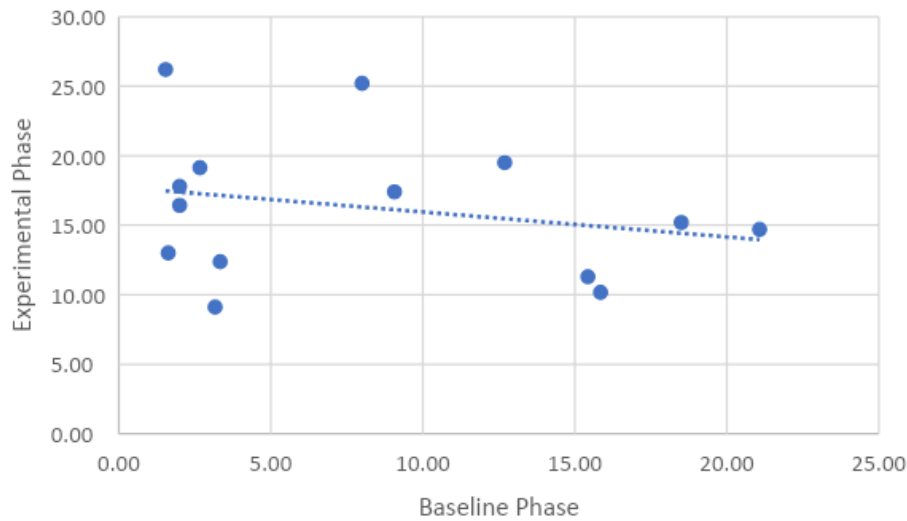
For behaviourally relevant details that were recorded during the free recall description, the standard WKF intake form had significantly fewer details recorded than the behaviourally informed form ($\beta = -3.97$, $SE = 1.23$, $t = -3.24$, $p = .001$). With HRD interviewer added as a random effect the same pattern of results were found ($\beta = -3.80$, $SE = 1.17$, $t = -3.24$, $p = .001$), with improved fit, $\chi^2(1) = 22.24$, $p < .001$. However, the random slope between documentation form and interviewer did not improve model fit further.

6.4.3 Difference in Information Recorded between Baseline and Experimental Phases

The previous results were based on the complete dataset, which averaged performance on the standard WKF intake form across the baseline and experimental phases. However, on the standard WKF intake form, a greater number of total details, total behaviourally relevant details, and behaviourally relevant details disclosed during the free recall description were recorded in the experimental phase compared to the baseline phase. This difference was significant for total details recorded ($\beta = 11.16$, $SE = 1.85$, $t = 6.03$, $p < .001$), total behaviourally relevant details recorded ($\beta = 5.66$, $SE = 1.36$, $t = 4.17$, $p < .001$), and behaviourally relevant details recorded during the free recall description ($\beta = 5.66$, $SE = 1.36$, $t = 4.17$, $p < .001$).

To examine the relationship between interviewer performance in the baseline and experimental phases, the average number of behaviourally relevant details documented on the standard WKF intake form in each phase was compared (Figure 1). Surprisingly, no association was found, indicating that individual differences in the number of details recorded during the baseline phase (pre-RCT training) did not predict differences in performance during the experimental phase (post-RCT training).

Figure 1. *Association between Behaviourally Relevant Details Recorded Using the Standard WKF Intake Form between Phases*



6.4.4 Differences in Information Recorded by Documentation Form in the Experimental Phase

To ensure the robustness of the findings, additional analyses were conducted comparing the behaviourally informed documentation form and the standard WKF intake form performance solely within the experimental phase. The results remained consistent with the previous findings. For the total number of details recorded in the experimental phase, the standard WKF intake form elicited significantly fewer details compared to the behaviourally informed documentation form ($\beta = -37.43$, $SE = 2.56$, $t = -14.64$, $p < .001$). With the HRD interviewer added as a random effect, the standard WKF intake form still elicited fewer total details ($\beta = -38.51$, $SE = 2.27$, $t = -16.96$, $p < .001$), and the model fit significantly improved, $\chi^2(1) = 34.38$, $p < .001$. Similarly, for the total number of behaviourally relevant details recorded in the experimental phase, the standard WKF intake form elicited significantly fewer details than the behaviourally informed documentation form ($\beta = -24.82$, $SE = 1.81$, $t = -$

13.72, $p < .001$). Adding the HRD interviewer as a random effect yielded similar results ($\beta = -25.33$, $SE = 1.66$, $t = -15.23$, $p < .001$), with a significantly improved model fit, $\chi^2(1) = 22.01$, $p < .001$. There were no significant effects for behaviourally relevant details recorded within the free recall description.

Taken together, the behaviourally informed documentation form resulted in interviewers recording significantly more details in total, as well as behaviourally relevant details about the offence, compared to the standard WKF intake form, even when considering only the data from the experimental phase. The significant improvement in model fit after including the HRD interviewer as a random effect highlights the importance of accounting for interviewer variability in the analysis. However, allowing the form effect to vary by interviewer did not significantly improve model fit for any of the outcome variables, suggesting that the effect of the form was robust across interviewers.

We explored whether HRD interviewers improved in collecting behaviourally relevant information with experience, focusing on the behaviourally informed documentation condition in the experimental phase. We calculated a proportion of behaviourally relevant details recorded by dividing the behaviourally relevant total by the total of all details recorded. Figure 2 plots the average proportion of behaviourally relevant details recorded collapsed across interviewers, as a function of interview order. Interestingly, the plot shows that the proportion of behaviourally relevant details recorded did not improve over time or with experience.

Figure 2. *Proportion of Behaviourally Relevant Details Recorded by Interviewee Order*

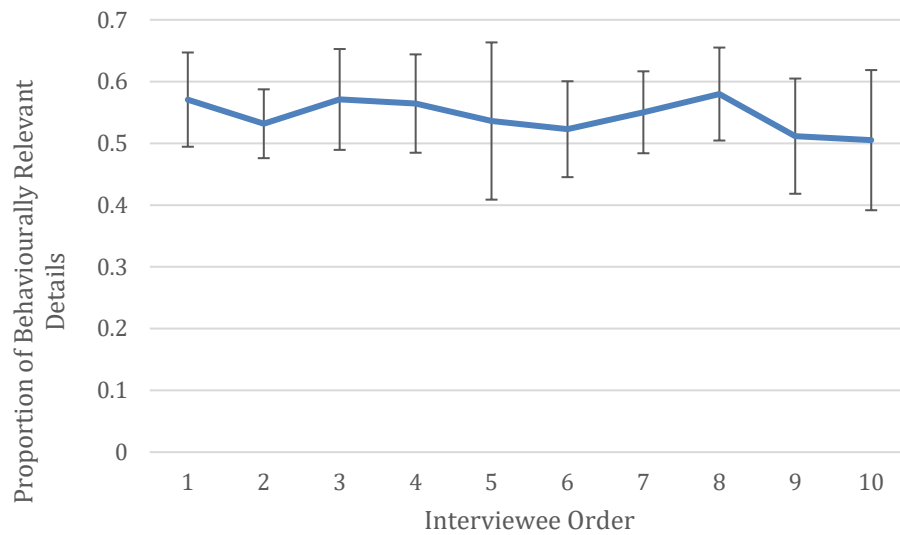
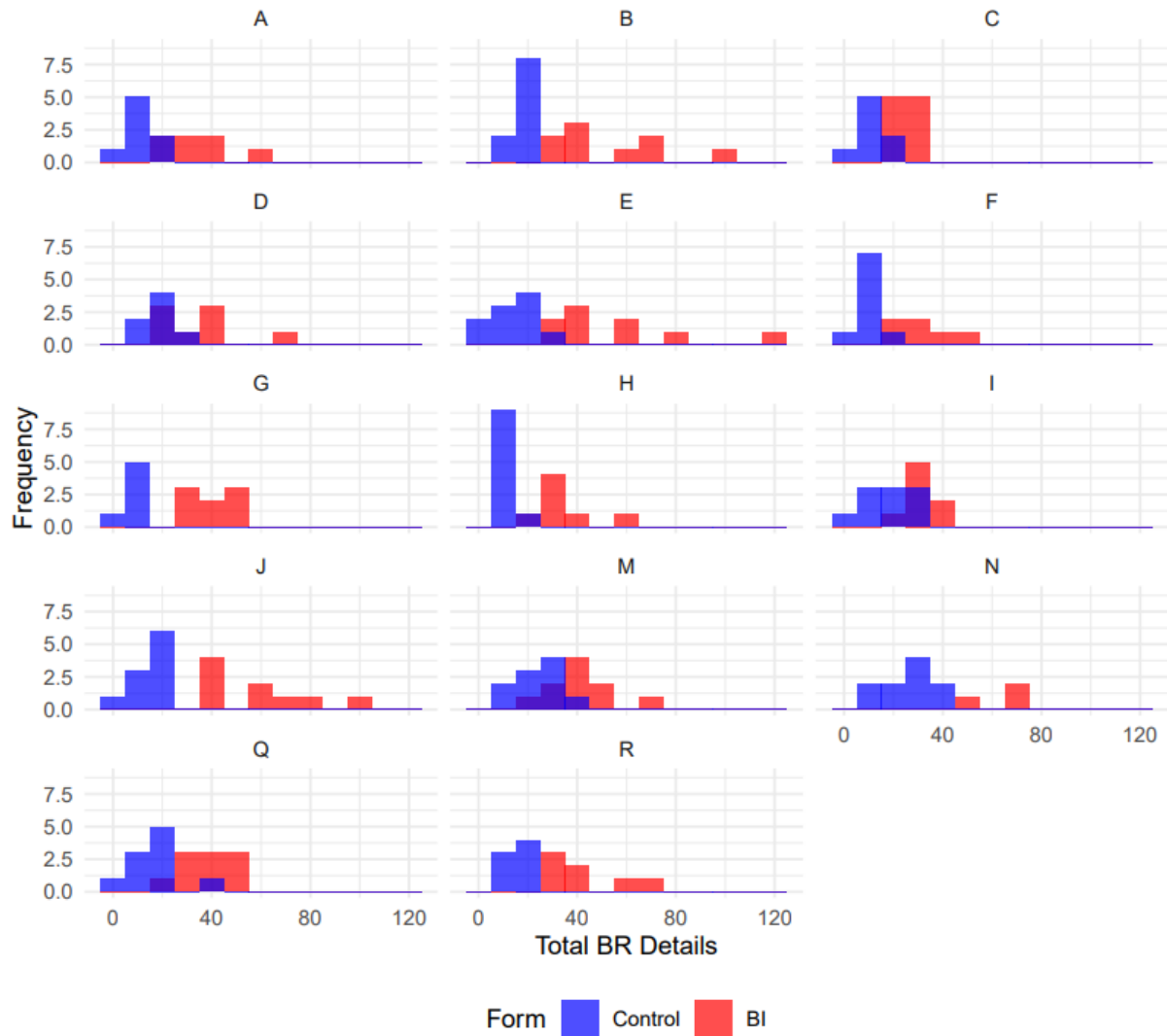


Figure 3 below displays the frequency distribution of total behaviourally relevant details recorded by form type for each HRD interviewer (denoted by a letter) during the experimental phase. The plot shows that for each interviewer, the behaviourally informed documentation form consistently results in recording a greater number of behaviourally relevant details than the standard WKF intake form.

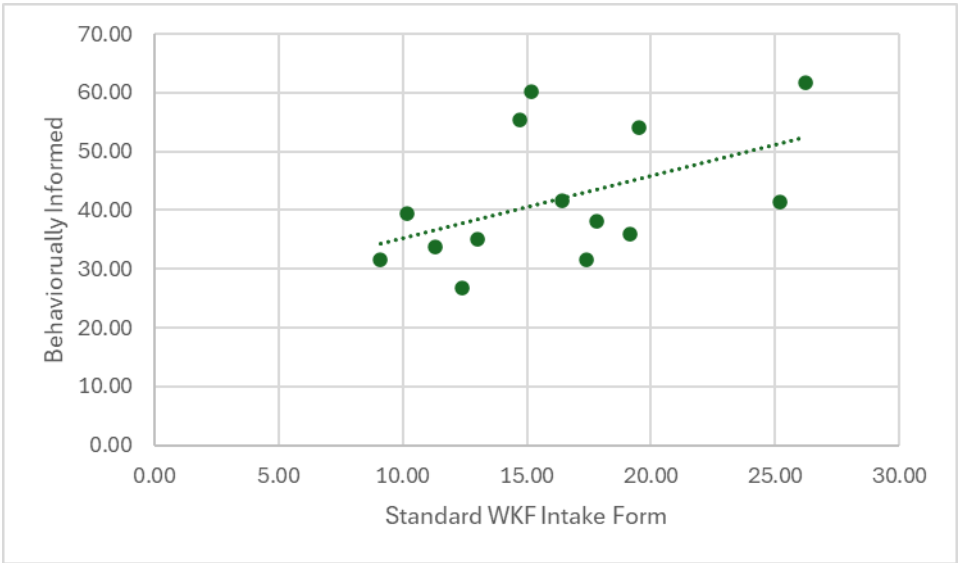
Figure 3. *Frequency Distribution of Behaviourally Relevant Details Recorded By HRD Interviewer and Form Type*



However, it can also be inferred from Figure 3 that there is notable variability across interviewers in the number of behaviourally relevant details recorded. To further investigate this variability, Figure 4 plots the relationship between the average number of behaviourally relevant details recorded across interviews on the standard WKF intake form versus the behaviourally informed documentation form for each interviewer during the experimental phase. By averaging across interviews within each form condition for each interviewer, the

analysis provided a more reliable and robust assessment of the relationship by reducing the impact of random variability and outliers. The positive direction of the relationship suggests that interviewers who performed well on the standard WKF intake form also tended to perform well on the behaviourally informed documentation form during the experimental phase.

Figure 4. *Association Between Behaviourally Relevant Details Obtained on the Standard WKF Intake Form and the Behaviourally Informed Documentation Form in the Experimental Phase*



6.5 Discussion

We investigated whether interviewers using the behaviourally informed documentation tool would record more information from a survivor of sexual violence, in comparison to the standard WKF intake form used in Kenya. Additionally, we explored whether interviewers using the behaviourally informed documentation form would record more behaviourally relevant information that could assist in the identification of prolific offenders; and present a more accurate picture of sexual offending in Kenya. We found that

interviews conducted using the behaviourally informed documentation form recorded more information in total as well as more behaviourally relevant information in comparison to the standard WKF intake form. This finding was robust when analysing differences between form types within just the experimental phase and when collapsing across both the baseline and experimental phases.

Additionally, we found that HRDs recorded more information (behaviourally relevant and non-behaviourally relevant details) from survivors after they had received training on interview best-practice. These findings are pivotal as they indicate that through training and the implementation of more systematic documentation resources, more complete memory evidence can be recorded from survivors of sexual violence in Kenya. This memory documentation in accordance with interview best-practice is likely going to be instrumental in assisting survivors in accessing justice, as interviews conducted using the same best-practice principles have been associated with greater prosecution rates (Pipe et al., 2013).

Importantly, this is the first study to implement a behaviourally informed documentation technique to obtain pertinent information for linking serial offenders to their multitude of offences. Particularly in an LMIC, where investigative resources are scarce, this increase in behaviourally relevant information may offer support in dealing with high caseload and prioritising resources. In what follows we will discuss each of our research findings in turn, before discussing implications and recommendations for future research, practice, and policy.

Wangu Kanja Foundation Intake Form

To date, the WKF and the Network hold the most systematic collection of SGBV cases in Kenya (Ji et al., 2022). As the WKF and the Network are frequently first responders to cases of SGBV, the initial accounts they gather have a significant impact on whether

survivors will disclose their statement to criminal justice professionals in the future (Campbell et al., 2009; Elmir et al., 2011). As such, it is imperative to empower this organisation to record rigorous memory documentation to facilitate future criminal investigations. Previous research has found that an immediate initial documentation attempt using either the standard WKF intake form (e.g., MobApp), or the standard form plus behaviourally informed questions, preserves memory accuracy over a one-week period in comparison to a control group with no initial recall attempt (Stevens et al., 2022). The current research extended this to understand the use of a behaviourally informed tool to record details in the field. Overall, when interviewers used the behaviourally informed tool, they recorded more information from survivors in comparison to using the standard intake form. Furthermore, when these documentation forms were investigated in a controlled laboratory setting, the addition of behaviourally informed questions did not decrease the accuracy of the details reported (Stevens et al., 2022). Therefore, if a survivor documents their case with the WKF using the behaviourally informed tool as close to the incident as possible it will facilitate them in recording a detailed and accurate account that can be preserved over time (Stevens et al., 2022). Combined, these findings display the potential for furthering the systematic and comprehensive documentation of SGBV cases using the behaviourally informed documentation form. This will benefit criminal justice proceedings in Kenya, as well as in other LMICs and humanitarian contexts.

Interviewer Skill

While there is an effect of form type on the amount of information recorded, our analyses found that the addition of the interviewer as a random effect within our models allowed for better model fit. This suggests that the HRD conducting the interview influenced the amount of information recorded, such that individuals who were better at conducting

interviews recorded more information than those who were less skilled. This aligns with previous research that survivors report disclosing more information to interviewers who used empathetic approaches and non-judgemental questioning (Patterson, 2011). When exploring interviewers' skills within the current research, no clear patterns depicted that the interviewer improved with experience during the RCT. As Figure 2 displays, there was no positive relationship between the number of interviews a HRD had conducted and the amount of information (total and behaviourally relevant) that they recorded from a survivor. This suggests that while the interviewer influences the amount of information recorded, there were also interview-specific factors, such as the interviewee's memory, the viewing conditions in which the crime occurred, or the interviewee's willingness to disclose information, that may have played a significant role in determining the amount of detail documented.

Furthermore, we explored whether an interviewer's ability to document behaviourally relevant details in the behaviourally informed documentation form was associated with the number of behaviourally relevant details they documented using the standard WKF intake form (see Figure 4). The overall pattern indicates a positive relationship. These findings illustrate the importance of also considering individual differences and their impact on the documentation of behaviourally relevant details. While the behaviourally informed documentation form consistently leads to a higher number of behaviourally relevant details compared to the standard WKF intake form for every interviewer, the extent of this improvement seems varied across interviewers. This suggests that some interviewers were more skilled at utilising the behaviourally informed documentation form to document behaviourally relevant details than others, and this translated into their recordings of statements using the standard WKF intake form. This highlights the need for comprehensive interviewer training and support to increase all HRDs' capacity to record behaviourally

relevant details. Interviewers who struggle to elicit behaviourally relevant details, even when using the behaviourally informed documentation form, may benefit from additional guidance and skill development to optimise their performance. However, these conclusions are tentative given this was a field study wherein the number of details recorded considerably varied across cases and may not have been randomly distributed across interviewers.

Limitations and Future Directions

The current research builds upon previous findings by Stevens et al. (2022), which found that participants provided limited responses to an online self-report form. The presence of an HRD (a trusted member of the community) may have assisted in increasing survivors' disclosures. The HRDs were able to establish rapport before the documentation attempt, which will allow survivors to feel comfortable enough to disclose (Vallano & Schreiber Compo, 2015). The presence of an HRD also assists with language barriers and illiteracy, as 17% of Kenyans are illiterate (World Bank, 2022). However, this poses additional complications for the interview, as the HRD is acting in the roles of both the interviewer and the interpreter to record cases in English (the language used by the Kenyan government for legal proceedings). A potential issue with HRDs acting as interpreters is the introduction of errors in the translation (Evans et al., 2019) when documenting a survivor's experience in English. This is also problematic as the survivor cannot understand the final report to correct any misunderstandings. Therefore, future research should explore the potential detriment of HRDs acting as interpreters.

However, while HRDs were an asset to the current research, the use of HRDs as data collectors also poses certain limitations. We maintained as much scientific standardisation as possible by rigorously training HRDs before data collection and operating strict inclusion and

exclusion criteria for cases, but sourcing out data collection does limit the amount of control we could operate over the experiment. For example, we trained HRDs to obtain an answer for every question, even if that answer was ‘don’t know / don’t remember / not applicable’. However, we received forms with missing answers. Therefore, we cannot conclude if the survivor did not answer the question, the HRD did not ask the question, or the HRD did not record the answer (e.g., they may have thought it was repeated information). This limits our ability to explore patterns in survivors’ responses, as we cannot determine if the survivor did not provide an answer or the HRD did not record the response. Additionally, it can result in substantial data loss, as three HRDs had to be excluded from the RCT due to not adhering to the documentation protocol and providing incomplete documentation forms. Future iterations of this research should give feedback to the WKF and the Network and continue to empower them with research skills to obtain the most standardised and rigorous datasets that can assist them in their work. However, differences in interviewers' approaches to data collection is reflective of documenting cases in real life; therefore, this field study is an ecologically valid test of the WKF data collection process.

Future research should explore the potential benefit of improving the WKF data collection process on case progression. Previous research has found that interviews conducted using best-practice are associated with better case progression (i.e., prosecution; Pipe et al., 2013). However, this research is conducted in the US, and therefore should be replicated in the Kenyan context. Research has explored attrition rates along the case referral pathway in Kenya for SGBV survivors (Rockowitz et al., 2024). They found that less than 2% of survivors who were referred to the WKF received a conviction in their case. This was prior to this RCT training and data collection. Therefore, future research should consider the case progression of WKF referrals following this RCT. This would explore whether the increase in

information gathered is beneficial in improving investigation and prosecution capacity, particularly of serial sexual offenders using BCL. However, future research should strive to achieve police and stakeholder buy-in to incorporate both these memory documentation resources and BCL techniques into police practice and criminal justice proceedings.

Furthermore, another limitation of the current study is that it requires documentation of evidence using a manual paper and pen questionnaire. Previous researchers have found that individuals interviewed using paper and pen formats wanted to use a typed interface for ease (Gabbert et al., 2009). As such, it may be beneficial to consider a future GBVxTech platform to document cases, one that utilises interview best-practice (Stevens et al., 2024) and asks behaviourally informed questions. This would allow survivors to type, voice record, or video record evidence in their own words and language. Nevertheless, in a low-resource context such as Kenya, while individuals may have a mobile phone, they may not have access to data (Connecting Africa, 2021). Therefore, any technological developments would need to consider access provisions and allow various alternative formats (e.g., digital self-report, paper and pen self-report, HRD-assisted report) to meet the needs of the individual survivor. Furthermore, the implementation of future GBVxTech should also consider recommendations provided by Stevens et al. (2024), as the force choice responding method used in the standard WKF intake form during the baseline phase may have limited survivors' disclosure amounts. Therefore, future iterations should implement open questions and free recall response methods that allow survivors to narrate their own responses (Stevens et al., 2024).

Policy Implications

This randomised control trial provides recommendations for policy makers both in Kenya and other humanitarian areas, such as LMIC's, displaced communities, and conflict zones. The need to improve memory documentation in such regions is time-sensitive and

imperative, given the current interest both in research exploring cross-cultural memory within interviews (Hope et al., 2022; Smith et al., 2019; Vredeveltdt et al., 2023) and guidance for how to document SGBV globally (Foreign, Commonwealth & Development Office, 2017; Murad Code, 2022). The current research found that our innovative interview training, in combination with our behaviourally informed documentation form, increased the number of details recorded from survivors. This included information about the perpetrators behaviours that may assist investigations through BCL. Based on these results, we would encourage first responders to ask behaviourally relevant questions to record more information from survivors, especially given that asking behaviourally relevant questions does not decrease the accuracy of the information obtained (Stevens et al., 2022).

Furthermore, there is a clear benefit to investigative potential and security measures by obtaining behaviourally relevant information. BCL has been used to link serial perpetrators to their multitude of offences in both the Global North (Bennell et al. 2010) and the Global South (Woodhams & Labuschagne, 2012). Therefore, obtaining key behavioural information that facilitates BCL can progress investigations to apprehend serial perpetrators that will prevent further offending (Bennell et al., 2009; 2010; Woodhams & Bennell, 2014). BCL may be even more important in an LMIC context, such as Kenya, due to the limited number of trained police officers and weak resource infrastructure (Oduor et al., 2014). The use of a behaviourally informed tool and BCL may assist in caseload management to locate and apprehend the most prolific offenders. Additionally, as previously noted, behavioural information is not only pivotal for BCL but can also assist with situational crime prevention (Chiu et al., 2021). Kenyan authorities can use the behavioural information to identify geographic and temporal crime hotspots to engage appropriate security measures to minimise

crime opportunities within those hotspots (Leclerc et al., 2016) and reduce the risk of further offending and victimisation.

As well as the benefit of the behaviourally informed documentation form, this research found that interviewers recorded more details from survivors after receiving training in interviewing best-practice. Therefore, our innovative training programme does not only improve HRDs interviewing skills (see Stevens, Walsh et al., under review); but it also improves the number of details recorded from survivors in Kenya when using the same standard WKF intake form. Moving forward, we recommend that all non-police first responders, such as human rights defenders, medical professionals, and education providers, receive mandatory interview training to improve the completeness and accuracy of the memory statements documented. This is pivotal, as we know that interviews conducted in accordance with best practice are positively associated with increased convictions (Pipe et al., 2013). Therefore, we recommend that governments and funding bodies prioritise the delivery of such innovative interview training programmes in humanitarian areas, as they are a low-resource alternative to current provisions (i.e., the Protocol (Foreign, Commonwealth & Development Office, 2017), see Stevens, Walsh et al., under review, for more information).

Overall, we recommend that HRDs and other first responders receive the interview training in combination with the behaviourally informed documentation form to document the most complete accounts from survivors. This should be funded and rolled out within Kenya imminently in advance of the next election period in 2026, as there is frequently a high prevalence of SGBV in Kenya during the election period (FIDH, 2021; Odhiambo, 2016). Therefore, it is essential to train as many HRDs as possible in interview best-practice, and equip them with the behaviourally informed documentation form, such that they may systematically document the cases on the ground to pioneer for further change.

Conclusion

We found that interviewers recorded more details in total, as well as behaviourally relevant details, when using the behaviourally informed documentation form in comparison to the standard documentation form not focused on behavioural information. These behaviourally relevant details are pivotal in documenting the perpetrator's MO that can assist in apprehending prolific serial offenders. Additionally, we found that training in interviewing best practice increased the number of details interviewers recorded. Therefore, we recommend that all first responders are trained in interview best-practice and equipped with the behaviourally informed documentation form to record more detailed statements. These findings hold promise for humanitarian contexts, including low-resource areas like Kenya, where first responders are documenting incidents of sexual violence. These documentation tools can highlight incident prevalence, assist in investigation potential, and build capacity for situational crime prevention in crime-affluent areas.

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6.6 Appendix A

6.6.1 Standard WKF Intake Form

SURVIVORS DATA COLLECTION INTAKE SUMMARY FORM

1. Date of incident: _____
2. Time of incident: _____
3. Age of survivor: _____
4. Sex of survivor: _____
5. Location(s) of incident:
 1. Survivor's house: **Yes/No**
 2. Other's house: **Yes/No**
 3. Place of Work: **Yes/No/I don't know**
 4. Perpetrator's house: **Yes/No/I don't know**
 5. On my way to work/On the road: **Yes/No/I don't know**
 6. Other location (please describe) _____ : **Yes/No/I don't know**

6. Name of the city/town/village where incident initially took place:

7. Brief description of incident:

Perpetrator's Information: -

8. Number of perpetrator(s): - _____ Do you know the perpetrator(s):- _____
9. If yes, how _____
10. Estimate of perpetrator's age: _____
11. Perpetrator's Sex: _____

Post Incident Information: -

12. What action did the survivor take after the incident?

1. Seek medical attention: **Yes/No**
2. Seek counselling: **Yes/No**
3. Report to the police: **Yes/No**
4. Seek legal redress: **Yes/No**
5. Protection/Safe space/Shelter: **Yes/No**

13. If the survivor sought medical attention for the incident:

1. Did you become HIV positive due to the incident: **Yes/No/I don't know**
2. Did you get pregnant due to the incident? **Yes/No/I don't know**
3. Did you contract any STI's due to the incident? **Yes/No/I don't know**
4. Were you physically injured due to the incident **Yes/No/I don't know**

14. Was the survivor referred to the WKF? Yes/No à **If YES:** Client's Ref. No:

6.7 Appendix B

6.7.1 Behaviourally Informed Documentation Tool

SURVIVORS DATA COLLECTION INTAKE SUMMARY FORM

Survivors Details

1. Current age of survivor: _____
2. Age of survivor when incident happened: _____
3. Sex: _____
4. Relationship status: _____
5. Does survivor have any children (if yes how many?):

6. Survivor's current employment status: _____

Perpetrator Details

7. Number of perpetrator(s): - _____ Does the survivor know the perpetrator(s):-

If more than one perpetrator. Please fill in the Additional Perpetrator Form.

8. Survivor's relationship to the perpetrator (please tick)

1. Stranger
2. Neighbour
3. Acquaintance
4. Position of trust/authority
5. Colleague
6. Friend
7. Partner/spouse
8. Ex-partner/Ex-spouse
9. Family member, describe _____
10. Other, describe _____

9. Estimate of perpetrator's age: _____
10. Perpetrator's Sex: _____
11. Provide as much detail as possible about the perpetrator's appearance (e.g., hair, complexion, build, clothing, language/accent etc):

12. Was there anything unusual or distinctive about the perpetrator's appearance e.g., scars, marks, tattoos? Describe:

Offence Details

13. Describe what happened?

14. Date and time of offence: _____

15. Duration of the incidence: from _____ / to _____

16. Where did the assault happen?

1. Possible examples include:
2. Survivor's house: **Yes/No**
3. Other's house: **Yes/No** Describe _____
4. Perpetrator's house: **Yes/No/I don't know**
5. Perpetrator's Workplace: **Yes/No/I don't know**
6. Survivor's Workplace: **Yes/No**
7. On my way to work: **Yes/No**
8. Travelling on foot: **Yes/No**

9. In a vehicle (private car): **Yes/No**
10. Public Transport: **Yes/No**
11. Public building - indoors: **Yes/No**
12. Public space - outdoors: **Yes/No**
13. Other location (please describe) _____: **Yes/No/I don't know**

17. Name of the city/town/village where incident initially took place: -

18. Were the approach, incident, and release site the same? **Yes/No** (If not, give details of any changes in location)

19. What was the survivor doing just before the offence took place?

- a. Walking home: **Yes/No**
2. Working: **Yes/No**
3. Driving: **Yes/No**
4. Socializing: **Yes/No**
5. Shopping: **Yes/No**
6. Other (Please specify): _____: **Yes/No**

20. How did the perpetrator approach the survivor?

If perpetrator is unknown to survivor:

1. Engaged survivor in conversation (if so, about what)
2. Manipulation (i.e., blackmail, use of goods)
3. Attacked without social interaction
4. Used force/ threat (what type of force/threat)
5. Other (please specify) _____

If perpetrator is known to survivor:

1. Engaged survivor in conversation (if so, about what)
2. Manipulation (i.e., blackmail, use of goods)
3. Pre-arranged meeting
4. Unplanned meeting
5. Other (please specify) _____

21. (If relevant) From what direction did the perpetrator approach the survivor?

1. From in front: **Yes/No**
2. From behind: **Yes/No**
3. Other (please specify) _____: **Yes/No**

22. Did the perpetrator show any signs they planned the offence or how they controlled the survivor? (Please tick all that apply)

1. Brought restraints (tools) to location
2. Tied the survivor up
3. Used verbal threat
4. Used physical threat
5. Used a weapon
6. Other (please specify) _____
7. No
8. Don't know

23. Did the perpetrator threaten and/ or show a weapon to the survivor? **Yes/No**

1. If yes, what type of weapon? _____
2. If so, did the perpetrator bring it with them or find it at the scene?

24. Did the perpetrator demonstrate any behaviours to prevent them being caught by the police? (Please tick all that apply)

- a. Covering their face
2. Wearing gloves
3. Using a condom
4. Forced the victim to shower
5. Other (please specify) _____
6. No
7. Don't know

25. How the perpetrator left the crime scene:

- a. Did the perpetrator leave the location the offence occurred after the crime?
Yes/No
2. If yes, how did they leave? _____
3. Did the perpetrator take anything from the survivor or the scene? **Yes/No**
4. If yes, specify _____
5. Did the perpetrator leave any items at the scene? **Yes/No**
6. If yes, specify _____

26. Perpetrator's means of transporting the survivor (e.g., motorbike, car)

1. Was a vehicle used to transport the survivor? **Yes/No**
2. What type of transport was it? _____
3. If so, where from? _____ and to? _____
4. If so, who's vehicle, was it? _____

27. What did the perpetrator say to the survivor and how did they say it?

28. Was there anything unusual, repetitive, or distinctive about the perpetrator's behaviour towards the survivor? E.g., something they said.

29. Did the perpetrator seem to be under the influence of any substances or take any substances in front of the survivor (e.g., alcohol, drugs)? If so, what, if known?

Post Incident Information: -

30. What action did the survivor take after the incident?

1. Seek medical attention: **Yes/No**
2. Seek counselling/mental health services: **Yes/No**
3. Report to the police: **Yes/No**
4. Seek legal redress:
 - i. Legal advice: **Yes/No**
 - ii. Representation (Did the case go to court?): **Yes/No**
5. Protection/Safe space/Shelter: **Yes/No**
6. Report to CHV/HRD/Learning Institutions/ Religious institution: **Yes/No**
7. Others (please specify) _____

31. If the survivor sought medical attention for the incident:

- a. Did they become HIV positive due to the incident: **Yes/No/I don't know**
- b. Did they get pregnant due to the incident? **Yes/No/I don't know**
- c. Did they contract any STI's due to the incident? **Yes/No/I don't know**
- d. Were they physically injured due to the incident **Yes/No/I don't know**
- e. Other complications? **Yes/No/I don't know**

32. Has the incident affected the survivor's mobility or day to day interactions/relationships? Describe:

33. Was the survivor referred to the WKF? **Yes/No** à **If YES**: Client's Ref. No:

34. Was the survivor referred to other organizations, and if so, which?

6.8 Appendix C

6.8.1 Standard WKF Intake Form – Additional Perpetrator Form

SURVIVORS DATA COLLECTION PERPETRATOR AMENDMENT FORM

Perpetrator's Information: -

- 15. Do you know the perpetrator(s):- _____
- 16. If yes, how _____
- 17. Estimate of perpetrator's age: _____
- 18. Perpetrator's Sex: _____

6.8.2 Behaviourally Informed Documentation Form – Additional Perpetrator Form

SURVIVORS DATA COLLECTION PERPETRATOR AMENDMENT FORM

Perpetrator Details

- 1. Survivor's relationship to the perpetrator (please tick)
 - 1. Stranger
 - 2. Neighbour
 - 3. Acquaintance
 - 4. Position of trust/authority
 - 5. Colleague
 - 6. Friend
 - 7. Partner/spouse
 - 8. Ex-partner/Ex-spouse
 - 9. Family member, describe _____
 - 10. Other, describe _____
- 2. Estimate of perpetrator's age: _____
- 3. Perpetrator's Sex: _____
- 4. Provide as much detail as possible about the perpetrator's appearance (e.g., hair, complexion, build, clothing, language/accent etc):

5. Was there anything unusual or distinctive about the perpetrator's appearance e.g., scars, marks, tattoos? Describe:

6. How did the perpetrator approach the survivor?

If perpetrator is unknown to survivor:

1. Engaged survivor in conversation (if so, about what)
2. Manipulation (i.e., blackmail, use of goods)
3. Attacked without social interaction
4. Used force/ threat (what type of force/threat)
5. Other (please specify) _____

If perpetrator is known to survivor:

1. Engaged survivor in conversation (if so, about what)
2. Manipulation (i.e., blackmail, use of goods)
3. Pre-arranged meeting
4. Unplanned meeting
5. Other (please specify) _____

7. (If relevant) From what direction did the perpetrator approach the survivor?

1. From in front: **Yes/No**
2. From behind: **Yes/No**
3. Other (please specify) _____: **Yes/No**

8. Did the perpetrator show any signs they planned the offence or how they controlled the survivor? (Please tick all that apply)

1. Brought restraints (tools) to location
2. Tied the survivor up
3. Used verbal threat
4. Used physical threat
5. Used a weapon
6. Other (please specify) _____
7. No
8. Don't know

9. Did the perpetrator threaten and/ or show a weapon to the survivor? **Yes/No**
1. If yes, what type of weapon? _____
 2. If so, did the perpetrator bring it with them or find it at the scene?
10. Did the perpetrator demonstrate any behaviours to prevent them being caught by the police? (Please tick all that apply)
- a. ☐ Covering their face
 2. ☐ Wearing gloves
 3. ☐ Using a condom
 4. ☐ Forced the victim to shower
 5. ☐ Other (please specify) _____
 6. ☐ No
 7. ☐ Don't know
11. How the perpetrator left the crime scene:
- a. Did the perpetrator leave the location the offence occurred after the crime? **Yes/No**
 2. If yes, how did they leave? _____
 3. Did the perpetrator take anything from the survivor or the scene? **Yes/No**
 4. If yes, specify _____
 5. Did the perpetrator leave any items at the scene? **Yes/No**
 6. If yes, specify _____
12. Perpetrator's means of transporting the survivor (e.g., motorbike, car)
1. Was a vehicle used to transport the survivor? **Yes/No**
 2. What type of transport was it? _____
 3. If so, where from? _____ and to? _____
 4. If so, who's vehicle, was it? _____
13. What did the perpetrator say to the survivor and how did they say it?
- _____
- _____
- _____
14. Was there anything unusual, repetitive, or distinctive about the perpetrator's behaviour towards the survivor? E.g., something they said.
- _____
- _____
- _____
15. Did the perpetrator seem to be under the influence of any substances or take any substances in front of the survivor (e.g., alcohol, drugs)? If so, what, if known?

6.9 Appendix D

6.9.1 Model Analysis with Outliers and without Outlier

Table 2. *Model Inferential Statistics with Outliers and Without Outliers*

Dependent Variable	Predictors	With Outliers	Without Outliers
Total	1) Form Type	$\beta = -43.01, SE = 2.24, t = -19.17, p < .001$	$\beta = -39.99, SE = 1.83, t = -21.80, p < .001$
	2) Form Type + HRD Interviewers as Random Effect	$\beta = -44.01, SE = 2.14, t = -20.56, p < .001$	$\beta = -40.73, SE = 1.78, t = -22.92, p < .001$
	3) Random Slope between Form and HRD Interviewer (Intercept)	$\beta = 28.91, SE = 1.52, t = 19.09, p < .001$	$\beta = 30.96, SE = 1.29, t = 23.96, p < .001$

	Model fit between Model 1 & Model 2	$\chi^2(1) = 24.94, p < .001$	$\chi^2(1) = 16.71, p < .001$
	Model fit between Model 2 & Model 3	$\chi^2(1) = 0, p = 1$	$\chi^2(1) = 0, p = 1$
Behaviourally Relevant	1) Form Type	$\beta = -27.65, SE = 1.56, t = -$ $17.74, p < .001$	$\beta = -25.71, SE = 1.31, t = -$ $19.70, p < .001$
	2) Form Type + HRD Interviewers as Random Effect	$\beta = -27.99, SE = 1.49, t = -$ $18.73, p < .001$	$\beta = -25.90, SE = 1.27, t = -$ $20.46, p < .001$
	3) Random Slope between Form and HRD Interviewer (Intercept)	$\beta = 11.01, SE = 0.99, t = 11.07,$ $p < .001$	$\beta = 13.84, SE = 1.02, t =$ $13.60, p < .001$
	Model fit between Model 1 & Model 2	$\chi^2(1) = 21.90, p < .001$	$\chi^2(1) = 16.08, p < .001$
	Model fit between Model 2 & Model 3	$\chi^2(1) = 0, p = 1$	$\chi^2(1) = 0, p = 1$

Free Recall Behaviourally Relevant	1) Form Type	$\beta = -3.97, SE = 1.23, t = -3.24,$ $p < .01$	$\beta = -4.41, SE = 0.98, t = -4.48,$ $p < .001$
	2) Form Type + HRD Interviewers as Random Effect	$\beta = -3.80, SE = 1.17, t = -3.24,$ $p < .01$	$\beta = -4.18, SE = 0.94, t = -4.43,$ $p < .001$
	3) Random Slope between Form and HRD Interviewer (Intercept)	$\beta = 13.16, SE = 1.04, t = 12.65,$ $p < .001$	$\beta = 12.40, SE = 0.90, t =$ $13.80, p < .001$
	Model fit between Model 1 & Model 2	$\chi^2(1) = 22.24, p < .001$	$\chi^2(1) = 20.60, p < .001$
	Model fit between Model 2 & Model 3	$\chi^2(1) = 0, p = 1$	$\chi^2(1) = 0, p = 1$
Total Details	Standard WKF Intake Form Between Baseline and Experimental Phase	$\beta = 11.16, SE = 1.85, t = 6.03,$ $p < .001$	$\beta = 14.54, SE = 1.32, t =$ $11.02, p < .001$
Behaviourally Relevant	Standard WKF Intake Form Between Baseline and Experimental Phase	$\beta = 5.66, SE = 1.36, t = 4.17, p$ $< .001$	$\beta = 7.68, SE = 1.13, t = 6.77, p$ $< .001$

Free Recall	Standard WKF Intake Form Between	$\beta = 5.66, SE = 1.36, t = 4.17, p$	$\beta = 7.68, SE = 1.13, t = 6.77, p$
Behaviourally	Baseline and Experimental Phase	$< .001$	$< .001$
Relevant			
Total Details	1) Form Type	$\beta = -37.43, SE = 2.56, t = -$	$\beta = -29.72, SE = 1.60, t = -$
(Experimental		$14.64, p < .001$	$18.62, p < .001$
Phase)			
	2) Form Type + HRD Interviewers as	$\beta = -38.51, SE = 2.27, t =$	$\beta = -31.00, SE = 1.36, t = -$
	Random Effect	$16.96, p < .001$	$22.79, p < .001$
	Model fit between Model 1 & Model 2	$\chi^2(1) = 34.38, p < .001$	$\chi^2(1) = 47.12, p < .001$
Behaviourally	1) Form Type	$\beta = -24.82, SE = 1.81, t = -$	$\beta = -19.80, SE = 1.31, t = -$
Relevant		$13.72, p < .001$	$15.13, p < .001$
(Experimental			
Phase)	2) Form Type + HRD Interviewers as	$\beta = -25.33, SE = 1.66, t = -$	$\beta = -20.48, SE = 1.20, t = -$
	Random Effect	$15.23, p < .001$	$17.07, p < .001$

	Model fit between Model 1 & Model 2	$\chi^2(1) = 22.01, p < .001$	$\chi^2(1) = 21.65, p < .001$
Free Recall	1) Form Type	$\beta = -1.14, SE = 1.19, t = -0.96,$	$\beta = -0.72, SE = 1.09, t = -0.66,$
Behaviourally		$p = .339$	$p = .510$
Relevant	2) Form Type + HRD Interviewers as	$\beta = -1.39, SE = 1.07, t = -1.30,$	$\beta = -1.31, SE = 0.95, t = -1.38,$
(Experimental	Random Effect	$p = .195$	$p = .170$
Phase)			
	Model fit between Model 1 & Model 2	$\chi^2(1) = 29.53, p < .001$	$\chi^2(1) = 21.65, p < .001$

CHAPTER 7 DISCUSSION

The current thesis aimed to explore innovative methods of documenting detailed and accurate statements from victim-survivors of gender-based violence (GBV). This includes the use of digital technologies (e.g., mobile phone applications and websites), training non-police first responders, and using a behaviourally informed interview technique. We found that a digital self-reporting tool can be used to obtain accurate immediate accounts from participants (Stevens et al., 2022). Additionally, these accurate accounts were preserved across a one-week period. This suggests that memories recalled using the digital tool were consolidated and could be used in future criminal justice proceedings (Stevens et al., 2022). However, there is more work needed for digital documentation techniques (GBVxTech) to adhere to interview best-practice (Stevens et al., 2024). As well as digital reporting methods, we found that non-police first responders can be trained using our innovative interviewing training to use interview best-practice (e.g., rapport building behaviours and ground rules instructions) (Stevens, Walsh et al., under review). Moreover, following receipt of our training, non-police first responders recorded more memory details from survivors of sexual violence in Kenya (Stevens, Davies et al., under review). Therefore, there is a benefit of training non-police first responders in the quantity of memory evidence recorded.

Furthermore, we found that interviewers in Kenya recorded more memory details from survivors of sexual violence when using a behaviourally informed documentation tool (Stevens, Davies et al., under review). This addition of behaviourally informed questions was not at the expense of accuracy when investigated within a controlled setting (Stevens et al., 2022). Overall, we found a benefit of each of our innovative interview methods in obtaining more complete and/or accurate statements in accordance with interview best-practice.

7.1.1 Key Findings

Overall, four key findings emerged from this thesis: 1) limited research has investigated interview best-practice in the context of adult victim-survivors; 2) digital methods of memory documentation can be used to obtain accurate recall that can be preserved over time; 3) behaviourally informed documentation tools can be used to collect more memory details from survivors of sexual violence, and this is not at the expense of accuracy; and 4) non-police first responders to GBV can be trained in interview best-practice. In what follows, I will summarise the key findings and connections between my chapters before providing strengths, limitations and future directions.

7.1.1.1 Interview Best-Practice with Adult Victim-Survivors of GBV

To begin the current PhD, we reviewed 12 papers that explored the use of different interview methods in obtaining statements from adult victim-survivors of sexual assault. Overall, the key finding was that limited research has investigated interview best-practice in the context of adult victim-survivors. Whilst research using child victims of sexual abuse has found a benefit of rapport building and ground rules in facilitating complete and accurate disclosures (Fessinger et al., 2021; Lyon et al., 2014), the current review found mixed efficacy of these principles with adult victim-survivors. For example, Brubacher et al. (2020) found that participants receiving a narrative practice session did not recall more correct details than participants that did not receive a narrative practice. However, one third of the participants reported that the narrative practice session made them feel more comfortable to disclose, as it set expectations for the interview. Moreover, much of the evidence reviewed were perspectives pieces from actors within the criminal justice system (e.g., police, prosecutors), with only two studies empirically measuring participants recall accuracy (Ali et al., 2020; Flowe et al., 2019). Future research needs to empirically evaluate these interview principles

and whether they are effective in obtaining memory evidence. Additionally, only two studies included victim-survivors' perspectives of their interview experience (Patterson, 2011; Webster & Oxburgh, 2022). More research is needed to understand the impact of these interview principles not only on memory performance but on the victim-survivors' experiences and their willingness to disclose.

7.1.1.2 Digital Methods of Documentation

In addition to limited research on memory reporting by adult victim-survivors of GBV, there has also been limited understanding of alternate methods of reporting (Heydon et al., 2023; Stevens et al., 2022; 2024). Further research needs to understand digital methods of memory documentation for victim-survivors of GBV, as in light of the #MeToo movement (Me Too, 2023), there has been a burgeoning interest in digital reporting (e.g., mobile phone applications, websites, and social media (GBVxTech, World Bank, 2019)). Within Chapter 3 we reviewed current GBVxTech platforms that are used globally, and evaluated whether they adhere to best-practice interviewing principles from the face-to-face context (Stevens et al., 2024). Most GBVxTech platforms administer at least one open question, but the majority of questions asked use a closed responding method (e.g., drop down menu) that limit the responses provided by victim-survivors. Therefore, whilst GBVxTech platforms adhere to some best-practice principles of face-to-face interviewing that are amenable to a digital format; more work is needed to implement techniques that facilitate complete and accurate memory reporting.

Additionally, within Chapter 4 we investigated whether these digital documentation techniques were effective at preserving memory evidence across time. Early initial memory retrieval is beneficial in preserving participants memory performance over extended delays of up to one month (Ebbesen & Reinick, 1998; Gabbert et al., 2009). The current research

partially replicated these findings that participants who received an early initial recall attempt (MobApp and MobApp+) had increased recall accuracy in comparison to a no initial recall control group (Stevens et al., 2022). This memory accuracy was also preserved across a one-week retention interval. The digital reporting methods may provide an opportunity for memory rehearsal and consolidation for future recall attempts (Atkinson & Shiffrin, 1968). Overall, future research should continue to explore the use of digital reporting methods for preserving memory evidence but ensure that interview best-practice is used where possible within the digital technologies.

7.1.1.3 Behaviourally Informed Documentation

Even if alternative reporting methods increase disclosures of GBV, we still face issues with low prosecution rates worldwide (Home Office, 2021; Rockowitz et al., 2024). Therefore, there has been consideration of the types of memory details that may be beneficial for investigation and prosecution in sexual violence cases (Darwinkel et al., 2014; Tidmarsh et al., 2012). For example, information about the perpetrators' behaviours towards the victim (Darwinkel et al., 2014; Tidmarsh et al., 2012). However, no research has evaluated the efficacy of obtaining such behavioural information within an interview setting and its impact upon memory accuracy. Therefore, Chapter 4 was the first empirical research to investigate the efficacy of asking behaviourally informed questions within an interview. We found that our behaviourally informed initial interview (MobApp+) documented more accurate recall than our no initial recall control group (Stevens et al., 2022). MobApp+ performed comparably to a tool that did not ask behaviourally informed questions (MobApp), both in terms of memory accuracy but also the amount of behaviourally relevant information obtained. Therefore, the introduction of behaviourally informed questions was not at the expense of accuracy by increasing errors. Behavioural crime linkage is the ability to link

serial offenders to their multitude of offences based on the unique patterns of their behaviour (Woodhams et al., 2007). This has been found to be effective in linking serial perpetrators to their crimes in the Global North (Bennell et al., 2010) and the Global South (Woodhams & Labuschagne, 2012). As such, the current research is promising for providing further details that may benefit investigations of prolific serial offenders.

Additionally, in Chapter 6 we implemented a behaviourally informed documentation form in the field in Kenya and compared this to the standard intake forms used currently by the Wangu Kanja Foundation (WKF). Interviewers recorded more details from survivors of sexual violence using the behaviourally informed documentation form in comparison to the standard WKF intake form. These memory details recorded may offer further investigative details that assist in the apprehension of offenders. Furthermore, they may provide corroborating details to other survivors that may assist in prosecuting serial offenders. Overall, these studies together (Chapter 4 and 6) offer positive findings for the use of behaviourally informed interview techniques to obtain complete and accurate disclosures from survivors of sexual violence.

7.1.1.4 Training Non-Police First Responders

In addition to reporting via GBVxTech, victim-survivors may alternatively report to first responders outside of the legal system. For example, community actors (non-governmental organisations and human rights defenders (HRD)), medical professionals, and education providers. Whilst there are international guidelines to support non-police first responders, there has been limited implementation of first responder training in low-and-middle-income countries (LMICs). To date, Chapter 5 is the first to evaluate an innovative interviewing training programme that facilitates documentation of GBV by non-police first responders in an LMIC (Kenya). HRDs used more rapport building techniques and provided more ground

rules instructions following receipt of the training in comparison to pre-training. This suggests that the training package is partly effective in training best-practice interview skills.

One limitation of the training is that participants did not increase the number of open questions asked post-training. Previous researchers have found training open question usage to be difficult with police officers (Wright & Powell, 2006). Therefore, it is not surprising that HRDs also find it difficult to formulate open-ended prompts. Future iterations of the training will provide intake forms (Chapter 6, Stevens et al., under review) with written open questions to facilitate the use of further appropriately phrased prompts, as this has increased the use of open questioning strategies in previous research (Orbach et al., 2000). Additionally, we paired our training programme with a documentation tool containing appropriately phrased open and specific questions. In doing so, we found that HRDs recorded more memory details from survivors after they had received the training. Therefore, our innovative interview training package is effective at improving performance in best-practice interviewing and recording more memory details from survivors. Future research should seek to replicate this, but these findings are promising for improving memory documentation in LMICs.

7.1.2 Strengths and Limitations

One strength of the current research is that it is novel. Whilst guidance has been constructed to aid in the documentation of statements from victim-survivors of GBV (e.g., Ministry of Justice, 2022, FCDO, 2017, Murad Code, 2022); there has been very limited evaluations of these guidelines. Therefore, the scoping review conducted in Chapter 2 illustrated research gaps; and offered future recommendations to ensure the efficacy of interview guidance used with adult victim-survivors. Additionally, there has been specific interview guidance constructed that documents behavioural information from victim-survivors (e.g., Whole Story Approach, Tidmarsh et al., 2012). However, prior to the current

research (Chapter 4 & 6), the use of behaviourally informed questions within an interview had not been investigated. Furthermore, GBVxTech is being implemented globally and being utilised in legal proceedings, yet Chapter 3 was the first systematic evaluation of these platforms and their use of interview best-practice (Stevens et al., 2024). Therefore, the current research offers vital evaluations of innovative interview methods that are already being applied in practice without understanding of their ability to document memory evidence.

A further strength of the current research is that it was conducted in collaboration with the WKF, a non-governmental organisation working on the ground with survivors of GBV. Members of the WKF and the Network were pivotal to the design and implementation of the current research. This collaboration ensured that this thesis is culturally sensitive and answers relevant questions for the WKF. We are equipping them with data and skills to advocate for change in Kenya and other LMICs. Therefore, the current research is significant in its impact and contributions to the field.

However, whilst co-design is crucial to the validity and impact of the current research, using members of the WKF and the Network as data collectors does limit the control that we can maintain over the research. For example, we used members of the WKF to facilitate the innovative interview training programme using a ‘train-the-trainer’ approach. This was due to COVID-19, as we were unable to travel to Nairobi to conduct the training in person. Therefore, a train-the-trainer approach offered sustainability for future training and impact on the ground. However, as these facilitators are community actors that work with survivors of GBV, they are not trained researchers. As such, they may not conduct the evaluation measures with as standardised instructions as we might. This may limit the reliability of the findings. To mitigate against this, we conducted rigorous training prior to all data collection. Additionally, we took steps to quality monitor the data. For example, we monitored all training sessions

remotely via Zoom to ensure high quality training and standardised evaluation in accordance with our studies aims. Therefore, we are confident that our research produced reliable findings, though future research should seek to replicate them. Furthermore, by utilising members of the WKF, we have upskilled them to collect and analyse data in a scientific manner. This will enable them to continue increasing their impact and advocating for societal change.

Additionally, whilst the current findings have impactful applications in Kenya, we can only describe our findings within the context of the WKF and individuals that seek assistance through them. We cannot generalise our findings outside of this environment. Therefore, future research should replicate this with individuals who do not report to the WKF and with other LMICs.

7.1.3 Future Directions of Research and Practice

In future research we hope to partner with the FCDO and organisations outside of Kenya to adapt our innovative interviewing training package. Future research should evaluate the training's efficacy in improving performance in interview best-practice in other contexts where community actors are first responders. Overall, we recommend that all non-police first responders be trained in interview best-practice. This will improve the memory documentation from victim-survivors, as well as victim-survivors experience of the process. Governments and funding bodies should be prioritising allocation for this systematic training, as improved memory evidence collection will improve case outcomes in instances of GBV (Pipe et al., 2013). Additionally, research and practice should extend the interview training package to empower other first responders, such as education providers and healthcare professionals. Therefore, if they are faced with documenting an instance of GBV they are equipped to take the memory statement using interview best-practice (e.g., rapport building,

ground rules, open questions). However, to do this the current training package would need to be extended to include modules on interviewing children and individuals with additional vulnerabilities (e.g., neurodiversity and intellectual disabilities). The current training package was designed to interview adult victim-survivors of GBV and would need to be extended and evaluated to include additional complexities.

Furthermore, when applying the training package or any alternative reporting methods used within the current thesis, we must consider that merely translating tools and training materials into another language (e.g., Swahili) is not sufficient. We must collaborate with organisations within that country to ensure the cultural sensitivity of all materials used. Moreover, we must carefully evaluate and improve the materials with feedback from our partner organisations to ensure their effectiveness in that language and context. This is particularly important in multilingual contexts that switch between multiple languages within one conversation (i.e., code-switching; Angermeyer, 2015). In the future we must assess how to best present both the training and the resources, with the instruction of collaborators working within that context and those languages.

Additionally, future research should adapt and investigate the efficacy of the behaviourally informed documentation tool in other LMICs where they lack rigorous data collection of SV. This will ensure thorough data collection of the patterns of violence that may benefit responses to cases of GBV (i.e., investigation and prosecution). Moreover, it will allow low resource communities to better streamline their security measures into contexts that are temporal and geographic hotspots of crime. The behaviourally informed documentation tool will gather information regarding key times and locations where crimes are occurring, in addition to common ruses and modus operandi that are being used by offenders. Therefore, governments and legal agencies can use situational crime prevention to prevent crime

opportunities using strategic security measures (e.g., surveillance, additional police personnel, lighting) (Chiu et al., 2021; Leclerc et al., 2016). Moreover, police and non-police first responders should implement behavioural questions within interviews to obtain details that will benefit investigation of serial sex offenders as well as national security.

The scoping review conducted in Chapter 2 highlighted the need for future research investigating the efficacy of interview principles with adult victim-survivors of GBV, in particular with non-WEIRD populations. Minimal research has investigated whether adult victim-survivors of GBV report more complete and accurate memory statements in response to principles advocated in guidance (e.g., rapport building, ground rules, open questions). Research should evaluate interview guidance used with victim-survivors including the Achieving Best Evidence Guidance (Ministry of Justice, 2022), the Protocol (FCDO, 2017), and the Murad Code (2022). This should be conducted within a laboratory setting where we can establish ground truth. Therefore, we can understand the impact of these interview methods on eliciting accurate memory accounts from adult victim-survivors of GBV. From here we can conduct field interviews to understand the impact on the amount of detail obtained from victim-survivors. When evaluating current interview guidance, we should consider if there are any principles that are missing that could be beneficial in assisting investigation potential. For example, training interviewers how to obtain consistent and distinctive behaviours of perpetrators that may assist in the apprehension of serial sexual offenders (Slater et al., 2015).

Finally, in light of global movements such as #MeToo, we need to acknowledge the importance and influence of GBVxTech. This will only continue to grow as individuals turn to social media and technology to document the crimes they have experienced. Therefore, we must continue to promote the use of best-practice within GBVxTech, such that it will hold up

in legal proceedings. Technology developers should consult psychologists to create GBVxTech platforms that will benefit the safety of the victim-survivor, as well as the memory evidence documented. Any platform that is developed should then be empirically evaluated to understand how the memory evidence obtained is preserved over time and protected against forms of misinformation. This will ensure that the information obtained has less chance of being criticised should the case ever make it to trial.

7.1.4 Conclusion

To conclude, this thesis found that innovative interviewing methods can be used to document memory evidence from victim-survivors. We are able to empower non-police first responders to record detailed statements through the use of our training package and behaviourally informed tool. Overall, there is very limited research on investigative interviewing with adult victim-survivors of GBV; further research must evaluate this and adapt innovative methods accordingly. These findings are promising to obtain complete and accurate accounts from victim-survivors of GBV using digital reporting methods, trained non-police first responders, and behaviourally informed tools. This research can be extended to other contexts to prioritise systematic documentation of memory evidence from GBV victim-survivors globally.

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APPENDICES

7.2 Appendix 5.1

7.2.1 Ethical Approval from The University of Birmingham

Dear Dr Flowe

Re: "Telling their stories: Sexual violence survivors' experience of reporting rape to first responders in Kenya"
Application for Ethical Review ERN_19-0198

Thank you for your application for ethical review for the above project, which was reviewed by the Science, Technology, Engineering and Mathematics Ethical Review Committee.

On behalf of the Committee, I confirm that this study now has full ethical approval.

Please be aware that the University insurer, UMAL, offers access to [RiskMonitor Traveller](#) which provides 24/7/365 security advice for all travellers and you are advised to make use of this service.

I would like to remind you that any substantive changes to the nature of the study as described in the Application for Ethical Review, and/or any adverse events occurring during the study should be promptly brought to the Committee's attention by the Principal Investigator and may necessitate further ethical review.

Please also ensure that the relevant requirements within the University's Code of Practice for Research and the information and guidance provided on the University's ethics webpages (available at <https://intranet.birmingham.ac.uk/finance/accounting/Research-Support-Group/Research-Ethics/Links-and-Resources.aspx>) are adhered to and referred to in any future applications for ethical review. It is now a requirement on the revised application form (<https://intranet.birmingham.ac.uk/finance/accounting/Research-Support-Group/Research-Ethics/Ethical-Review-Forms.aspx>) to confirm that this guidance has been consulted and is understood, and that it has been taken into account when completing your application for ethical review.

Please be aware that whilst Health and Safety (H&S) issues may be considered during the ethical review process, you are still required to follow the University's guidance on H&S and to ensure that H&S risk assessments have been carried out as appropriate. For further information about this, please contact your School H&S representative or the University's H&S Unit at healthandsafety@contacts.bham.ac.uk.

Kind regards



7.3 Appendix 5.2

7.3.1 Ethical Approval from United States International University-Africa



USIU-A/IRB/084-2021

USIU-A Institutional Review Board (IRB)

23rd March, 2021



Dear Sarah,

IRB-RESEARCH APPROVAL.

The USIU-A IRB has reviewed and granted an ethical approval for the research proposal titled **“Analyzing medicolegal approaches to rape survivorship and understanding psychological implications of care provision”**.

The approval is for **twelve months** from the date of IRB. A continuing review application must be approved within this interval to avoid expiration of IRB approval and cessation of all research activities. A mid-term report and a final report must be provided to the IRB within the twelve months approval period. All records relating to the research (including signed consent forms) must be retained and available for audit for at least 3 years after the research has ended.

You are advised to follow the approved methodology and report to the IRB any serious, unexpected and related adverse events and potential unanticipated problems involving risks to subjects or others.

Should you or study participants have any queries regarding IRB’s consideration of this project, please contact irb@usiu.ac.ke.

Sincerely,



7.4 Appendix 5.3

7.4.1 Written Evaluation

BACKGROUND CONTEXT: Aliyah and Layla have never met before. Aliyah has come to disclose a case of sexual violence to Layla

Layla: **(Relaxed posture, smiling and making eye contact with Aliyah)** Hello. My name is Layla, and I am going to be conducting this interview today. Please could you confirm your name please.

Aliyah: Hello. My name is Aliyah.

Layla: Why don't you tell me a bit about yourself? What do you like to do in your free time?

Aliyah: Well, in my free time I enjoy reading. My favourite books to read are...

Layla: **(Layla interrupts Aliyah)** That is lovely, I enjoy reading too. My favourite books are fiction.

Aliyah: Okay.

Layla: Wonderful. Before we start, I just need to give you some instructions. You can use any words you want when talking to me. I might ask something you don't understand. Just say 'I don't understand'. I might ask something, and you don't know the answer. Just say 'I don't know'. And I might misunderstand what you say, and capture what you are saying wrong. You should tell me, because I don't know what's happened. Is this clear?

Aliyah: Yes.

Layla: Lovely. Can you tell me about the event which has led you here today?

Aliyah: Well, I was on my way ... **(Aliyah looks around to see if anyone can see or hear her)**

Layla: Please don't worry Aliyah, no one can see or hear you here. You said you were on your home when it happened? Did this happen in the morning or the evening?

Aliyah: Morning.

7.5 Appendix 5.4

7.5.1 Study 1 Assumption Tests

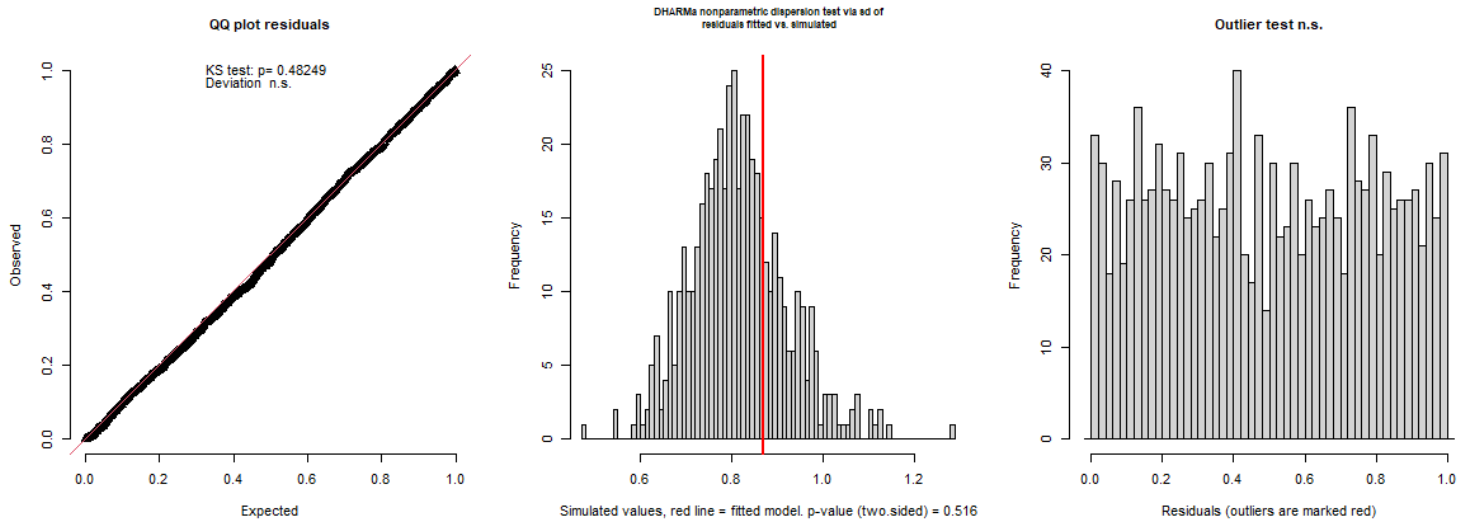
Table 7. *Multicollinearity values*

	Timepoint	Interview Behaviour Type	Participant Type
Variance Inflation Factor ^a	1.003	1.001	1.003
Tolerance ^b	0.997	0.999	0.997

Note. ^a Variance Inflation Factor should be smaller than 10 (James et al., 2013).

^b Tolerance should be higher than 0.1 (Kim, 2019).

Figure 2. *Normal distribution, heteroscedasticity, and outliers within residuals*



7.6 Appendix 5.5

7.6.1 Study 2 Assumption Tests

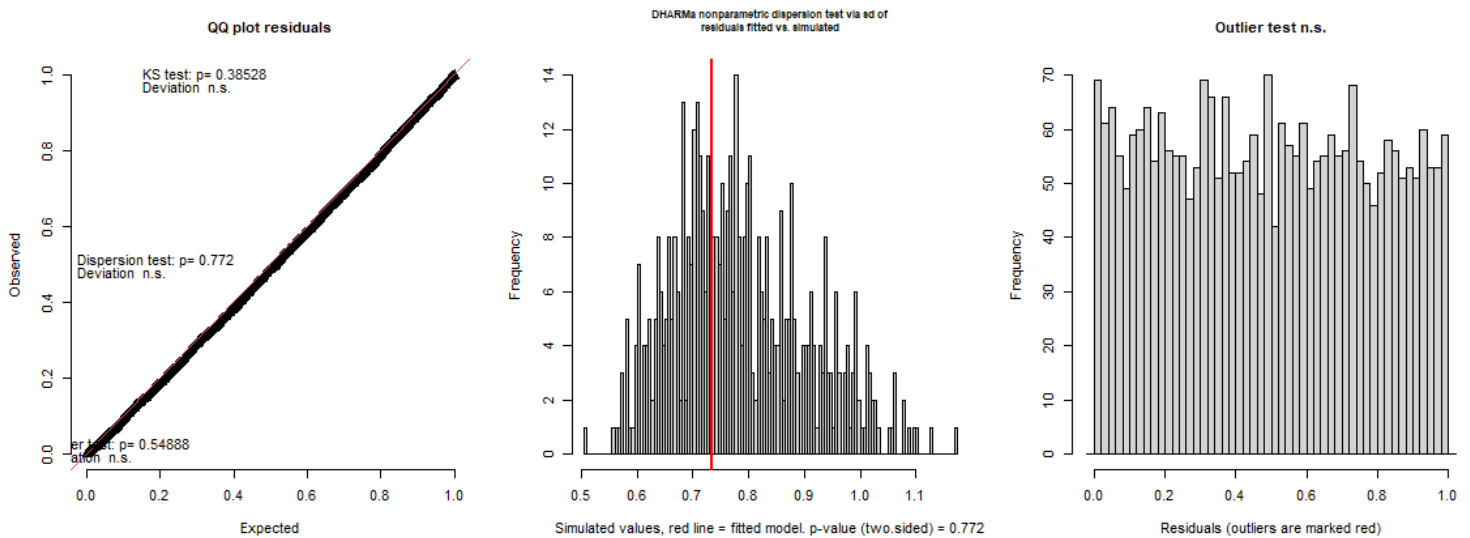
Table 8. *Multicollinearity values*

	Timepoint	Participant Type	Interview Skill Set	Timepoint x Interview Skill Set
Variance Inflation Factor ^a	2.186	1.002	1.152	1.485
Tolerance ^b	0.457	0.998	0.868	0.673

Note. ^a Variance Inflation Factor should be smaller than 10 (James et al., 2013).

^b Tolerance should be higher than 0.1 (Kim, 2019).

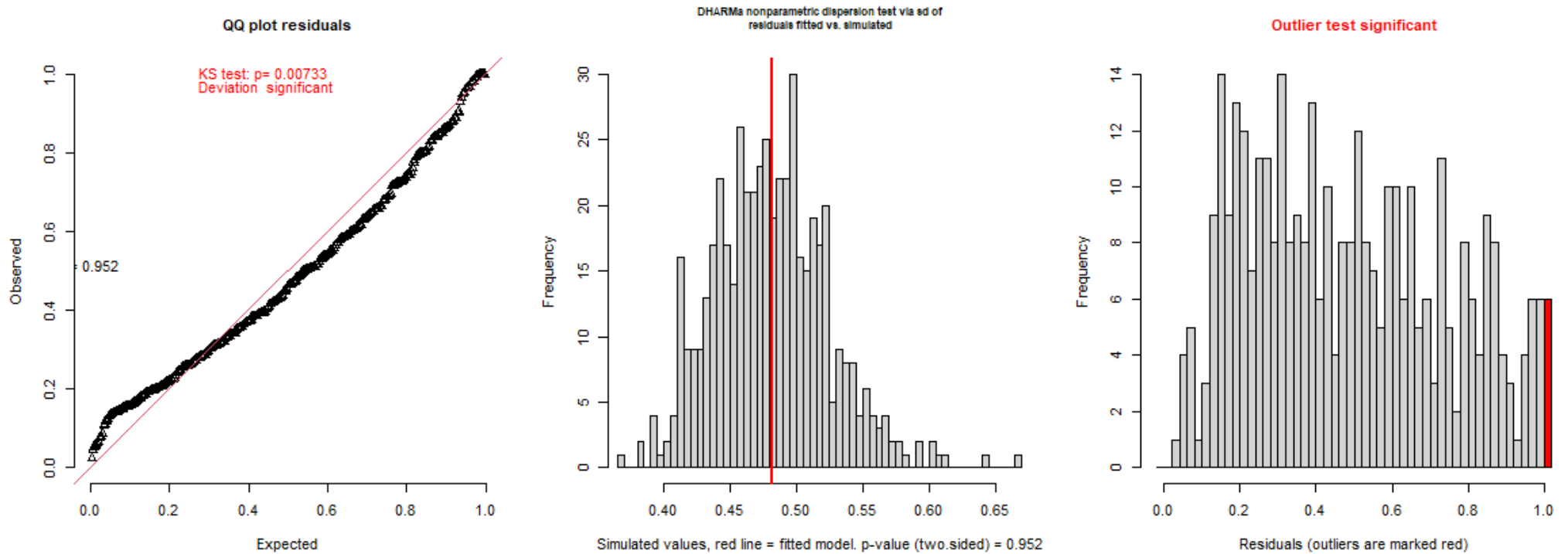
Figure 3. *Normal distribution, heteroscedasticity, and outliers within residuals*



7.7 Appendix 6.1

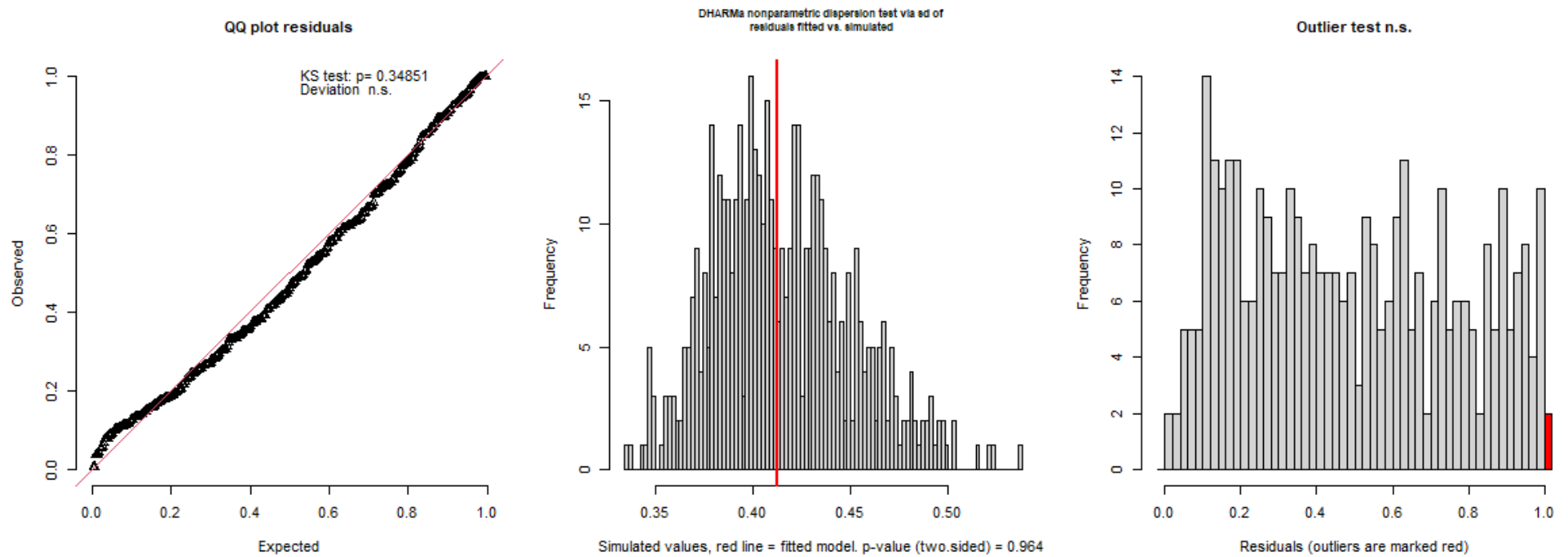
7.7.1 Assumptions Checks

Total Details

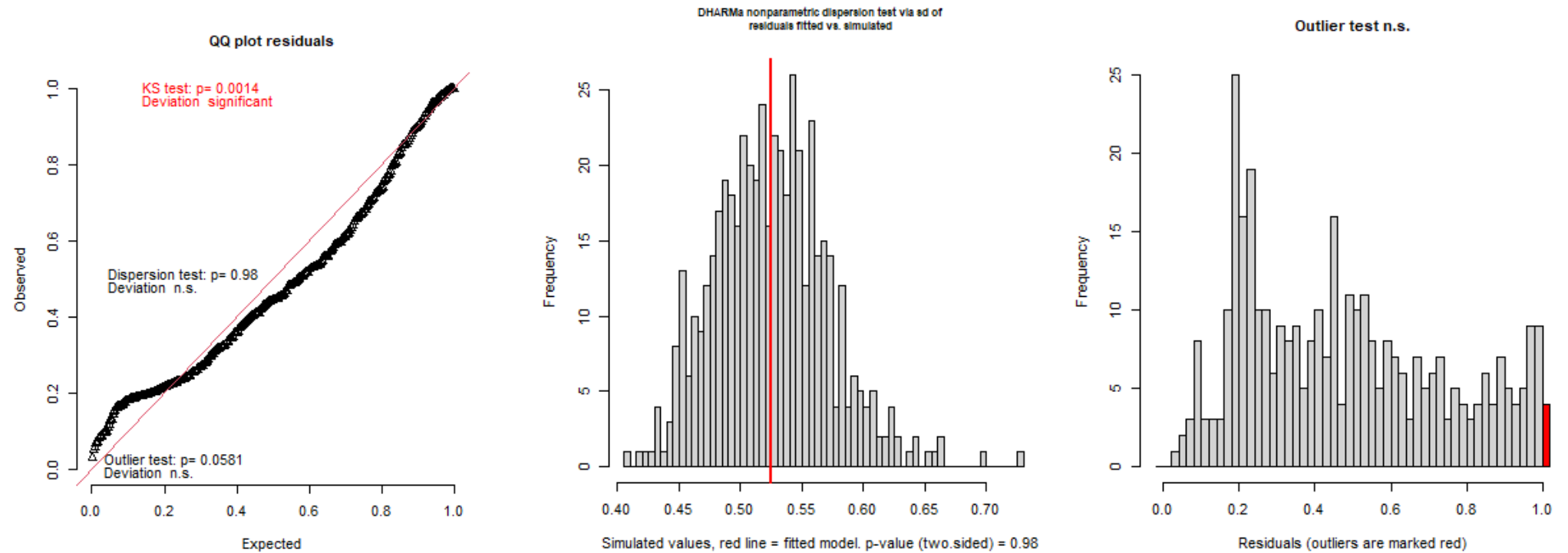


Total Details with Outliers Removed

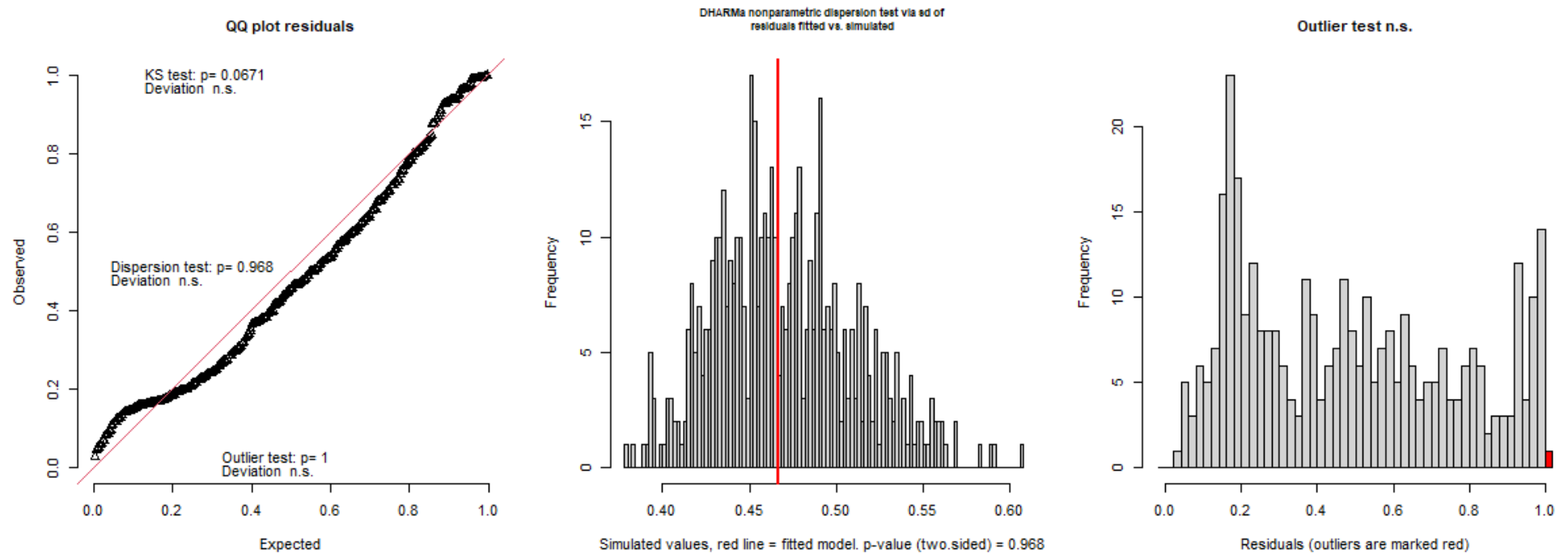
Outliers were removed if data was over two standard deviations above and below the mean (Yang et al., 2019).



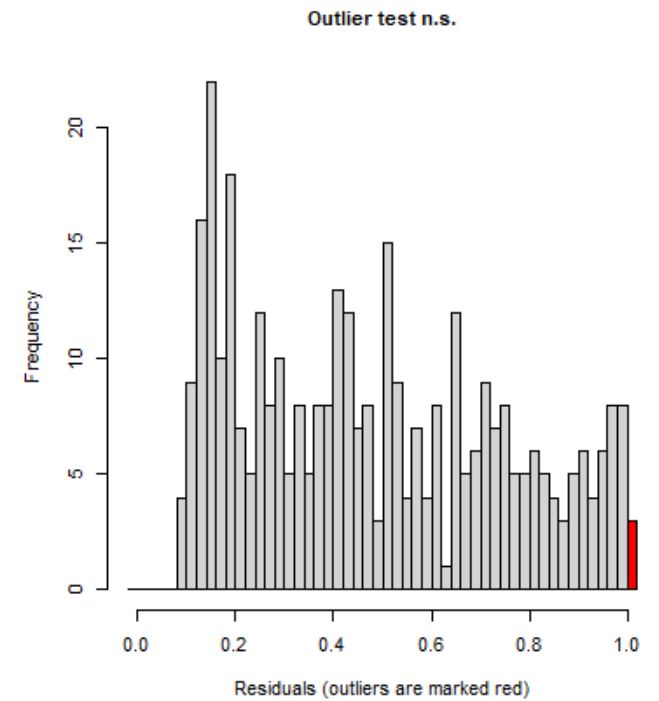
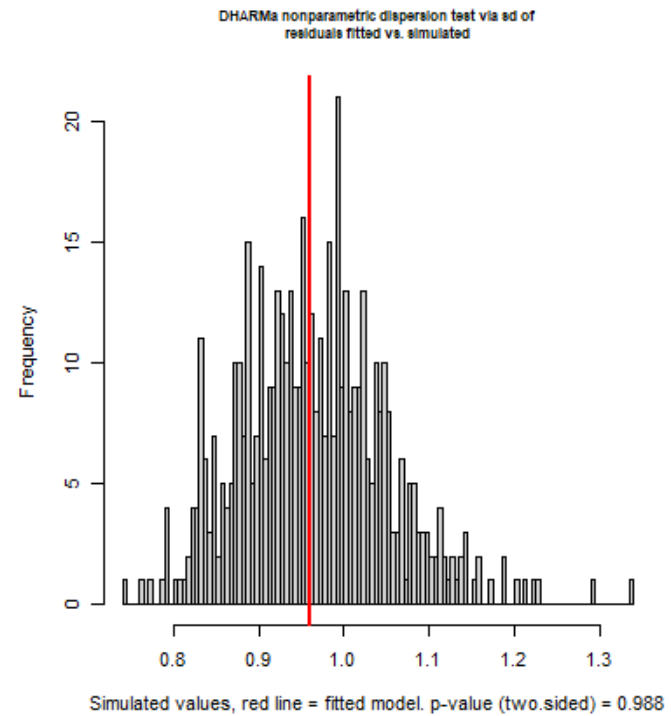
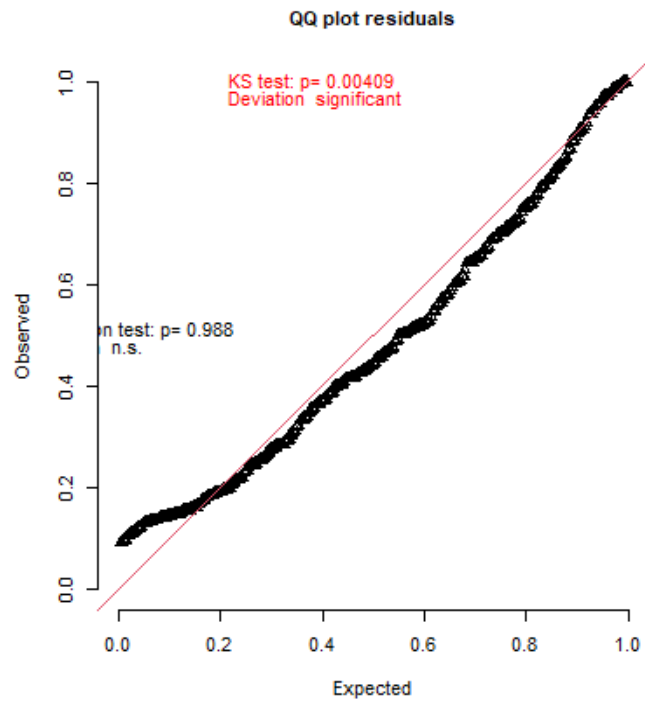
Total Behaviourally Relevant Details



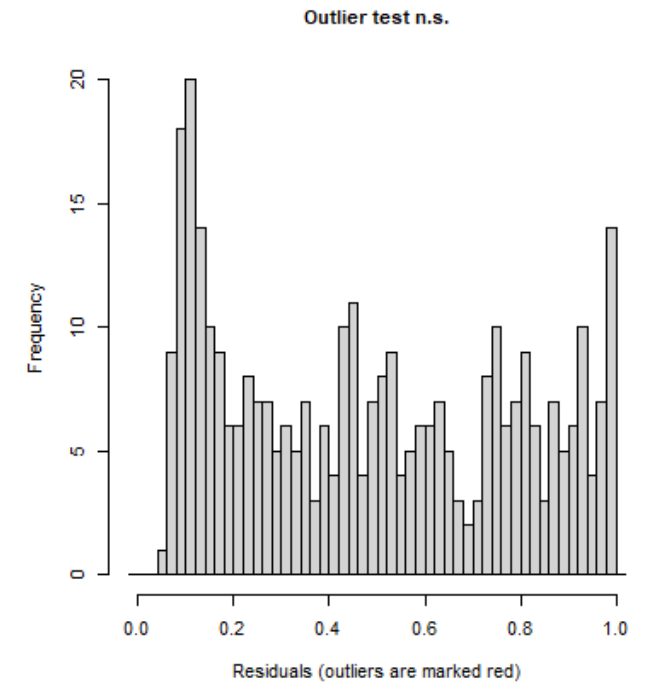
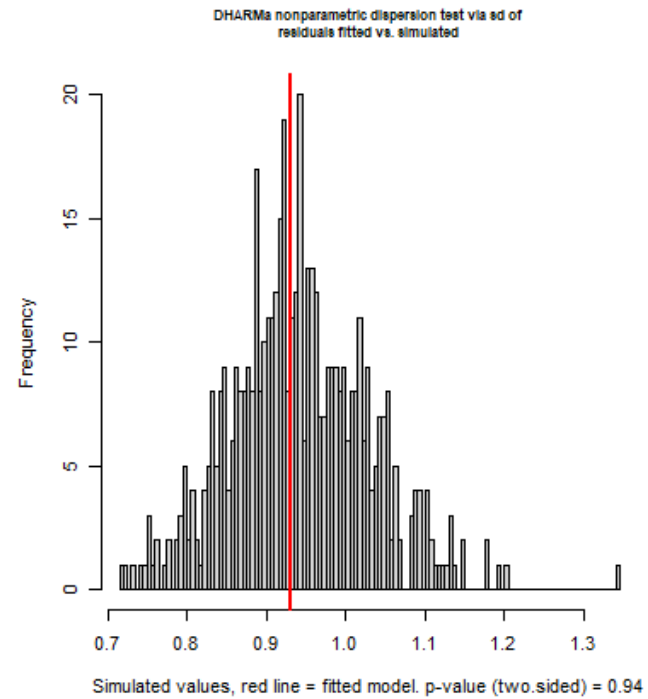
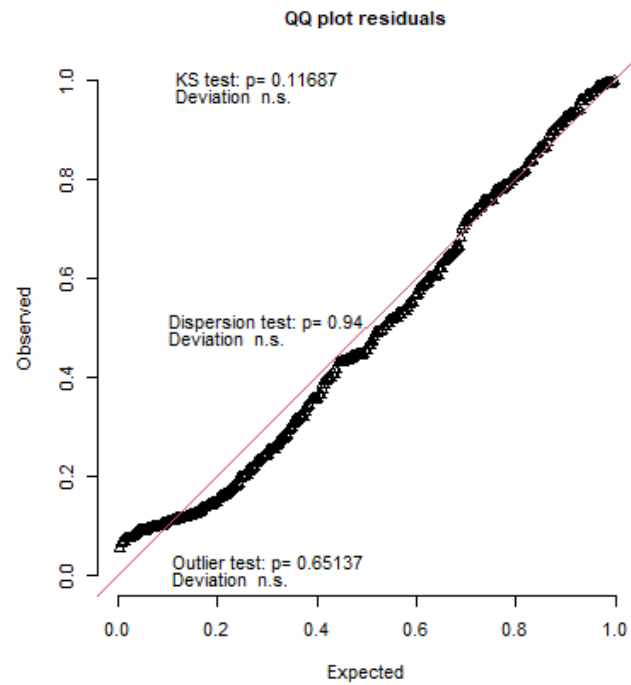
Total Behaviourally Relevant Details with Outliers Removed



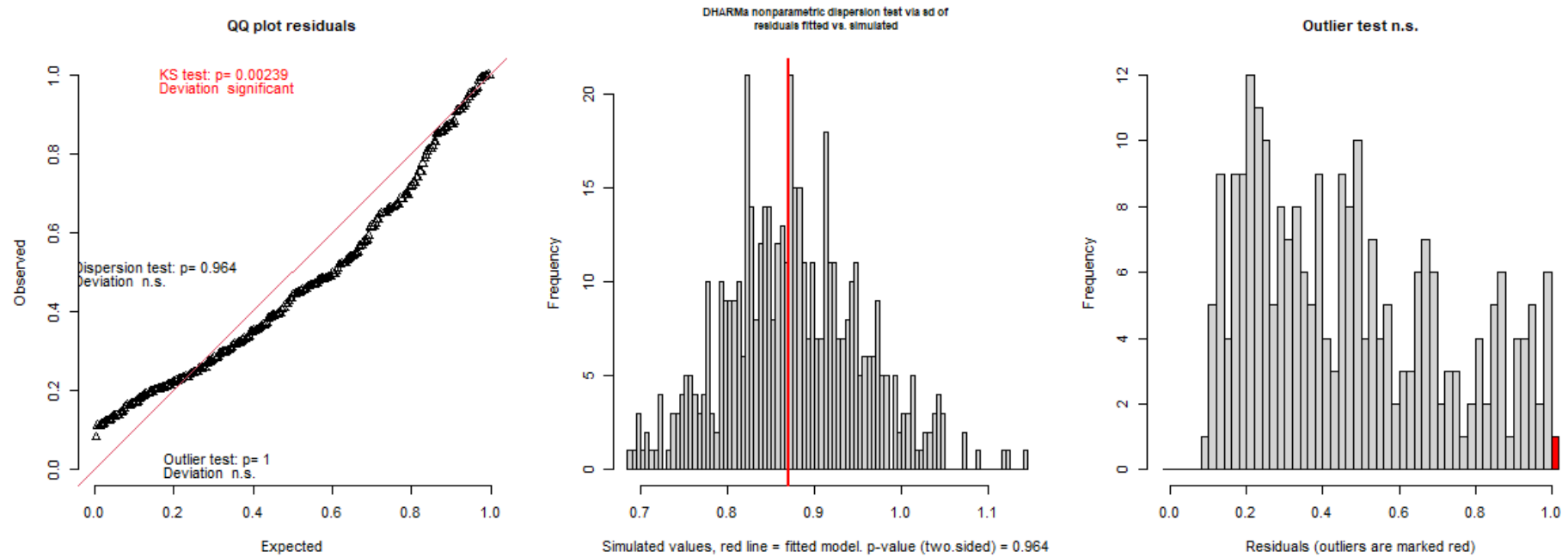
Behaviourally Relevant Free Recall



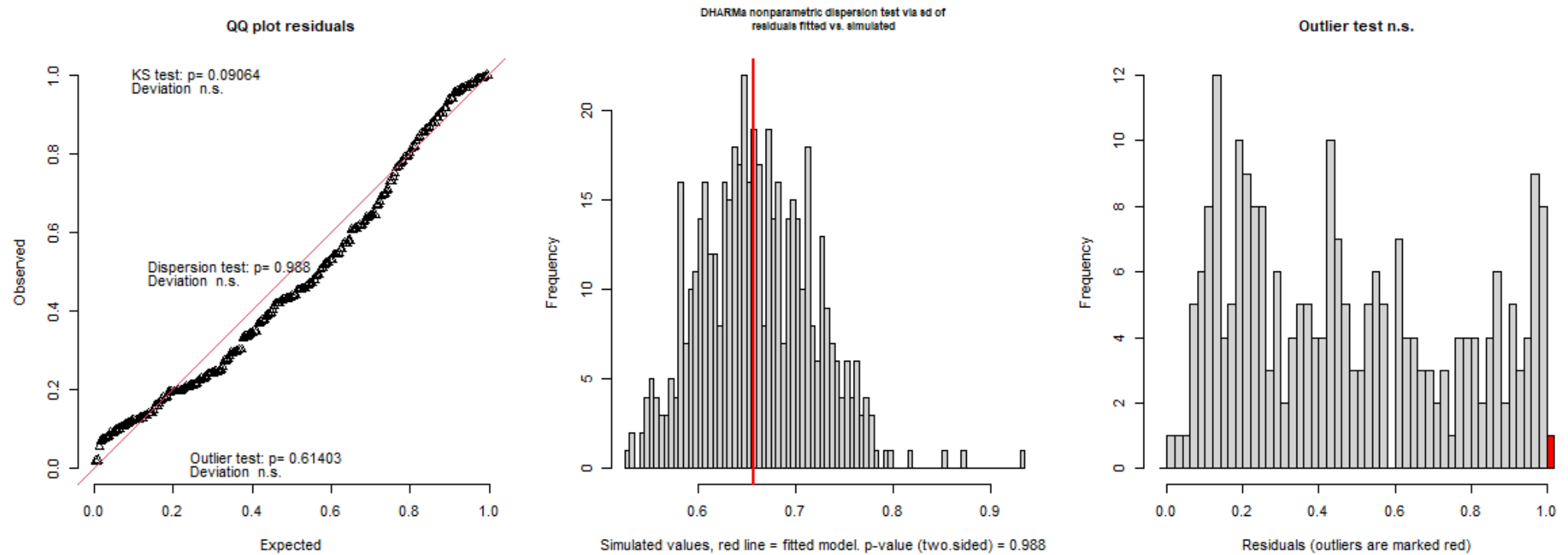
Behaviourally Relevant provided in Free Recall without Outliers



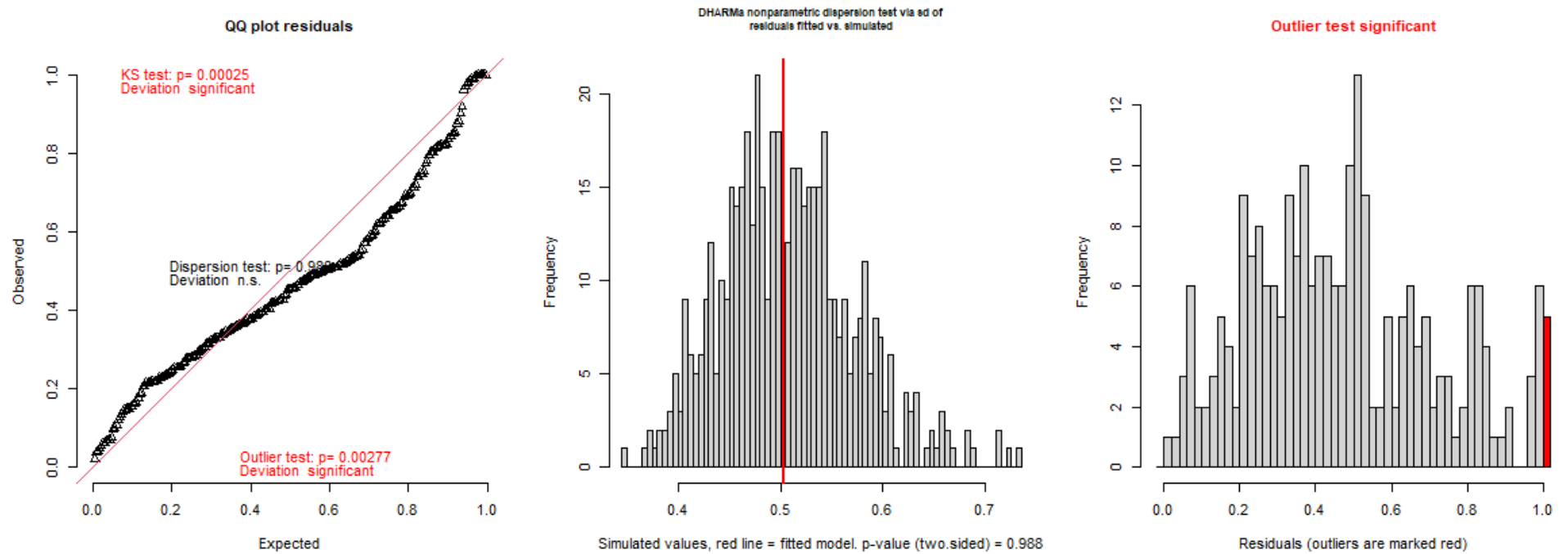
Differences in Total Details reported to Standard WKF Intake Form Between Phases



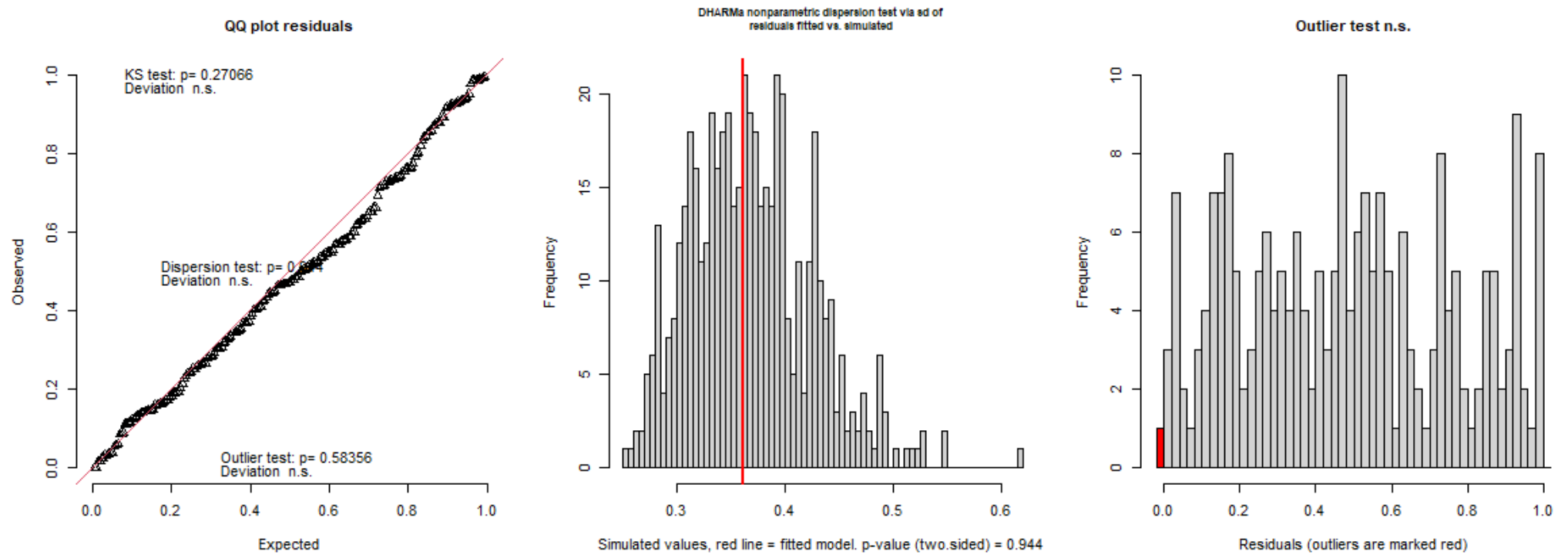
Differences in Total Details reported to Standard WKF Intake Form Between Phases Without Outliers



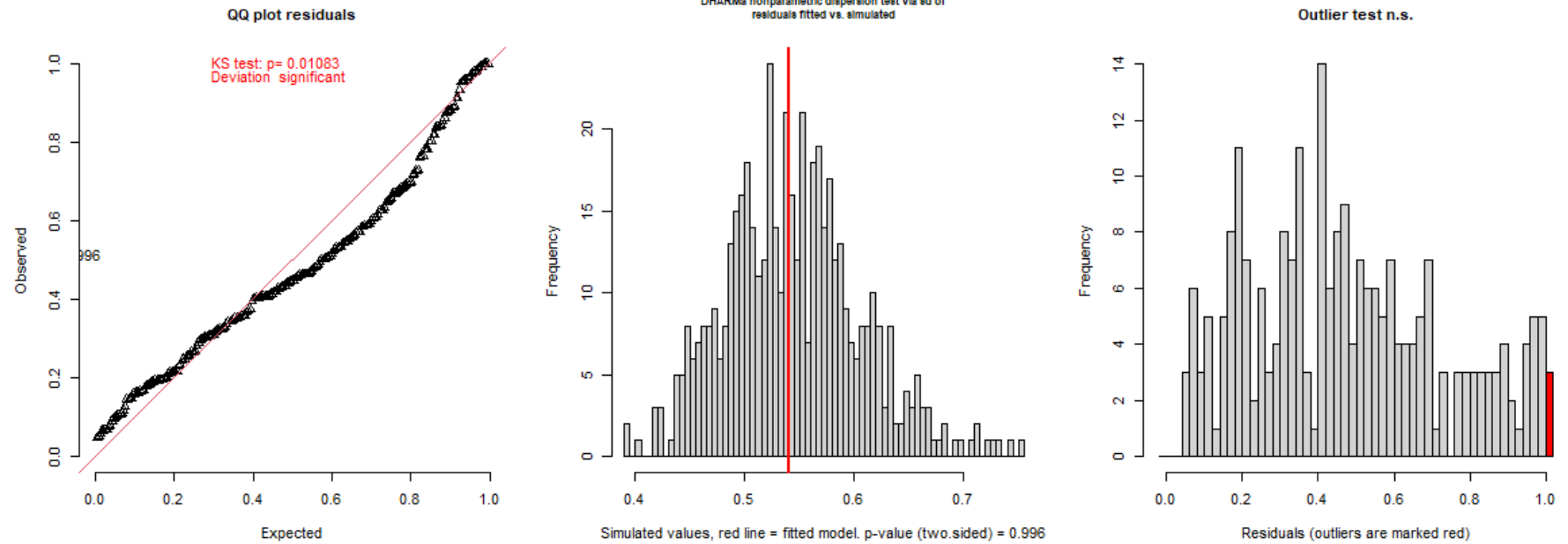
Differences in Total Details reported Between Forms within the Experimental Phase



Differences in Total Details reported Between Forms within the Experimental Phase with Outliers Removed



Differences in Total Behaviourally Relevant Details reported Between Forms within the Experimental Phase



Differences in Total Behaviourally Relevant Details reported Between Forms within the Experimental Phase with Outliers Removed

