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Addressing current issues in assessing professional rapport: A systematic review and synthesis of existing measures

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Abstract

The role of rapport facilitating cooperation and information disclosure has been widely acknowledged by both researchers and practitioners across professional information-gathering contexts. However, the definition and assessment of rapport are still debated, resulting in a lack of reliable and commonly used tools to effectively measure rapport. This review explored how rapport has been measured in professional information-gathering contexts and illustrates key characteristics of published measures in a searchable systematic map. A total of 111 research articles and 126 measures of rapport were evaluated based on standards in scale development and validation. The measures' conceptualisation of rapport was also examined with their individual items being coded for the following theorised components of rapport: (i) paying attention, (ii) personalising the interview/interaction, (iii) being approachable and (iv) establishing a mutual connection. Findings are synthesised and discussed in relation to the overarching patterns found, including limited consistency and validity in current measures of rapport.

KEYWORDS
eyewitness, investigative interviewing, measure, rapport, suspect, systematic review

1 | INTRODUCTION

The benefits of rapport-based interviewing have been highlighted in both empirical and practical information-gathering contexts (Kelly et al., 2015; Redlich et al., 2014; Russano et al., 2014). A growing body of scientific research largely reports that taking steps to build rapport facilitates a non-coercive environment that can foster cooperation and information disclosure (Abbe & Brandon, 2014; Brimbal et al., 2019; Gabbert et al., 2021). As such, all international best practice interview guidance emphasises the importance of building rapport in eliciting quality information (Achieving Best Evidence, Home Office, 2022; Army Field Manual, Department of the Army, 2006; College of Policing, 2022; Cognitive Interview, Fisher & Geiselman, 1992; NICHD Protocol, Lamb et al., 2007; PEACE model, CPTU, 1992). However, current understandings of the use of rapport in professional contexts remain limited, and although there is a general consensus on the importance of rapport, its definition, operationalisation and assessment are still heavily debated (Alison et al., 2014; Gabbert et al., 2021; Vallano & Compo, 2011). Such inconsistencies directly obstruct the development of an evidence base that can be used to inform relevant resources, such as training and official guidelines.

1.1 | Challenges in defining rapport

The concept of rapport in psychology is most often discussed with reference to Tickle-Degnen and Rosenthal's (1990) model of rapport, which consists of three interconnected components that fluctuate

throughout an interaction: (i) mutual attention, (ii) positivity and (iii) coordination. This tripartite model was originally developed to understand naturally emerging rapport in a social context. Therefore, it may have limited application to the building of rapport in a professional context, which we refer to herein as 'professional rapport'. In professional settings, such as police interviews or counselling sessions, an individual's formal role in the interaction dictates whether they are imparting or receiving information, thus creating a power imbalance between the interviewer and interviewee. Time constraints in many professional settings can also impact the establishment of rapport, and interviewees may be reluctant to share information or intentionally resist establishing rapport with the interviewer. In summary, Tickle-Degnan and Rosenthal's model, focusing on rapport development in social relationships, addresses quite a different context (see also Gabbert et al., 2021). Nevertheless, it has been applied within a suspect interviewing context by Collins and Carthy (2018) who operationalised *mutual attention* as referring to both parties engaging with and paying attention to one another, *positivity* as referring to the friendly and approachable nature of the interaction and *coordination* as the synchrony and shared understanding between both parties (see also Abbe & Brandon, 2013, who also adapted the model for use in professional contexts).

Discrepancies in how rapport is defined and measured remain, possibly because there is yet to be a consensus regarding how rapport should be referred to in professional settings (cf. social settings). Nee-quaye and Mac Giolla (2022) identified 22 definitions across the literature, and although six main attributes characterising rapport emerged (communication, mutuality, positivity, respect, successful outcomes and trust), they featured inconsistently across different definitions of rapport. The authors highlighted how these inconsistencies impede empirical assessments of rapport and called for a collaborative effort to determine what constitutes rapport, starting from a working definition of rapport. Recently, Gabbert et al. (2021) introduced the notion of 'professional rapport', encompassing steps to build rapport in a professional context (cf. naturally emerging rapport in social contexts). This refers to 'an intentional use of rapport behaviours in an attempt to facilitate a positive interaction with another person that might or might not lead to establishing genuine rapport' (Gabbert et al., 2021, p. 330). Gabbert and colleagues developed this term after systematically reviewing studies that examined the use and measurement of rapport in professional information-gathering contexts. Verbal (e.g., active listening, self-disclosure), non-verbal (e.g., smiling, eye-contact) and para-verbal (e.g., tone of voice) behaviours used to build rapport were identified across studies. These behaviours primarily served three purposes: (i) personalising the interview to build a relationship, (ii) presenting an approachable demeanour to encourage cooperation and (iii) paying attention to demonstrate interest and understanding. Methods to measure rapport were also considered. Here it was found that several disparate measurement techniques were used by researchers to quantify rapport. These included the use of questionnaires to assess an interviewer's use of rapport behaviours, or to self-report one's own feelings of rapport, and observational measures where trained coders rated interactions using predefined indicators of rapport behaviours. Gabbert and colleagues noted minimal overlap in the measurement tools used, with only one occasion whereby a research team used a measure of rapport previously utilised by another team. It currently remains uncertain whether discrepancies in rapport measurement arise from a lack of consensus in its definition, or stem from the methodological challenges in the development, testing and validation of such measures.

1.2 | Measures of rapport in investigative contexts

Looking across the literature focusing on rapport in investigative contexts, four main scales have been purposefully developed to measure rapport between an interviewer and interviewee: Alison et al. (2013), Collins and Carthy (2018), Duke, Wood, Bollin, et al. (2018), and Vallano and Compo (2011). Among these four measures, only one—the 'rapport scales for investigative interviews and interrogation, interviewee version (RS3i-I, Duke, Wood, Bollin, et al., 2018)—has been validated in accordance with best practice methodological recommendations (e.g., Boateng et al., 2018). Duke et al.'s questionnaire assesses an interviewee's rapport experience across five dimensions: attentiveness, trust/respect, expertise, cultural similarity and connected flow. A series of experiments have evaluated the scale's internal consistency, as well as its construct and concurrent validity, affirming its robustness. Despite being considered the most comprehensive attempt to validate a rapport measure within investigative contexts, some limitations remain. Ratings of cultural similarity are measured based on the premise that similarity enhances attractiveness (Byrne, 1962), although there is currently limited research supporting a direct link between cultural similarity and rapport. Further, development of the measure relied on undergraduate students' ratings of rapport and lacked expert evaluation of its components.

The remaining three measures of rapport (Alison et al., 2013; Collins & Carthy, 2018; Vallano & Compo, 2011) provide very little information regarding validity and reliability. Alison et al. (2013) did attempt to validate their 'observing rapport based interpersonal techniques' (ORBIT) model by examining the factorial structure of their framework. ORBIT is heavily influenced by rapport-related behaviours found in counselling psychology and was developed after examination of videos of terrorist interrogations. This framework comprises three main components: (i) motivational interviewing strategies (autonomy, acceptance, adaptation, empathy and evocation; Miller & Rollnick, 2009), (ii) interpersonal behaviour circle (Leary, 1955) assessing the interrogator-suspect interaction, and (iii) interview yield relating to the suspect disclosure of information. Despite the importance of this framework, some researchers have argued that it is unclear how the measure correlates with the feeling of rapport as a construct (Collins & Carthy, 2018) or how rapport is perceived by an interviewee (Duke, Wood, Bollin, et al., 2018). Collins and Carthy, therefore, developed their own coding framework inspired by Tickle-Degnen and Rosenthal's (1990) verbal indicators of rapport (discussed above). Last, Vallano and Compo (2011) assessed rapport using the

interaction questionnaire, comprising interviewer and interaction subscales. Both Vallano and Schreiber Compo's measure, and Collins and Carthy's measure, are yet to be validated. Further, researchers have raised concerns about the reliability of Vallano and Schreiber Compo's questionnaire (see Duke, Wood, Bollin, et al., 2018).

In sum, despite the existence of several promising measures of rapport developed specifically for investigative interviewing settings, each has limitations. It is also notable that each measure is very different in terms of the underlying theory upon which it is based, and in the way rapport is measured (self-report versus observational). The limited consistency across studies in the way rapport is both defined and measured creates clear challenges for developing effective evidence-based guidelines for the training and assessment of rapport. Given the value placed upon rapport, and the need to understand how best to quantify it, there is merit in examining existing measures of rapport extensively and systematically. Building on previous findings from Gabbert et al. (2021), the present systematic review evaluates current measures of rapport in detail and provides recommendations for future research.

1.3 | The present review

This article presents a systematic review of existing measures of rapport across professional information-gathering contexts, featuring a dyadic interaction whereby one party aims to elicit information and cooperation from another. Contexts include investigative interviewing, counselling and therapeutic sessions, medical interviews, teaching and marketing interactions. Additionally, a searchable systematic map (SSM) was produced to illustrate and organise key psychometric properties of current measures of professional rapport. The systematic review and accompanying SSM aim to: (i) provide an overview of published measures, sub-measures and observational assessments of rapport within information-gathering contexts; (ii) organise and illustrate the existing literature according to the key psychometric properties and required methodological recommendations in measure development and validation; and (iii) summarise key findings to inform the use of published assessments of rapport and highlight any gaps and inconsistencies requiring further attention. Together, the present review broadens our understanding of rapport via comparison and evaluation of various measurement techniques, thus enabling us to explore further the debate surrounding its definition, operationalisation and assessment.

2 | METHODOLOGY

A systematic review was conducted to better understand how rapport has been measured within professional contexts. Data collection for the review comprised a systematic process involving a keyword search, a two-phase screening process of relevant articles, and the development of an SSM illustrating key characteristics of the review. These stages are detailed below.

2.1 | Keyword search

In June 2021, a keyword search was conducted across three academic databases (PsycINFO, Web of Science, PsycTESTS) to identify articles that included a measure of rapport across different professional information-gathering contexts. A Boolean keyword string was generated using the PICO (population, intervention, comparison and outcome) framework (available on the open science framework (OSF) https://osf.io/qg4mx/?view_only=d1e94adb156e43efb1c7e82485abf65f) to cover all relevant components of the research question as recommended by the Cochrane handbook for systematic reviews (Higgins et al., 2022). As a result, the following Boolean search string was generated where all words must appear in the full text: (*rapport* OR 'rapport-building') n3 (measur* OR question* OR observ* OR inventor* OR scale* OR subscale* OR report* OR rate* OR rating* OR rated OR self-report**). A separate hand search was then completed to identify additional published measures of rapport.

2.2 | Inclusion and exclusion criteria

This review concerns rapport in professional information-gathering contexts and defines rapport in accordance with Gabbert et al. (2021). We include dyadic interactions due to the focus on building rapport between two people in a professional setting. For this reason, measures of rapport in social settings are not included. As recommended by previous researchers (e.g., Marsh et al., 1998; Robinson, 2018), measures should consist of multiple items, with a minimum of three items assessing the construct of interest either as part of a scale or a subscale of a wider measure assessing different constructs. Thus, the inclusion criteria required that studies: (i) assess rapport in a professional context between two parties as defined previously, (ii) include a measure (i.e., assessment) of rapport regardless of its origins (original, modified or single-use measure), (iii) be a published article consisting of either a scale, subscale or an observational coding system (iv) be written or available in English, (v) comprise adult samples (18 years of age or above), and (vi) provide either an exemplar or a reference to the measure in full in order to understand key characteristics (e.g. items, number of items). Finally, the availability of the scale was used as an inclusion criterion. If the measure of rapport was not found in the article or online, the primary researchers of the study were contacted by email requesting a copy of their measure of rapport. After 2 weeks, a final reminder was sent to those who did not respond to the initial email. The lack of response to both attempts resulted in the exclusion of the article from the review.

The articles did not meet inclusion if: (i) rapport was assessed in a personal context, (ii) at least one of the parties was a group (rather than a dyadic interaction), (iii) there was no explicit measure of rapport, (iv) the assessment used did not meet our definition of a measure (i.e., it included a single item or a two-item scale), (v) the measure was part of the grey literature (unpublished manuscripts, conferences, dissertations), (vi) children were included as part of the methodology and (vii) the measure was inaccessible.

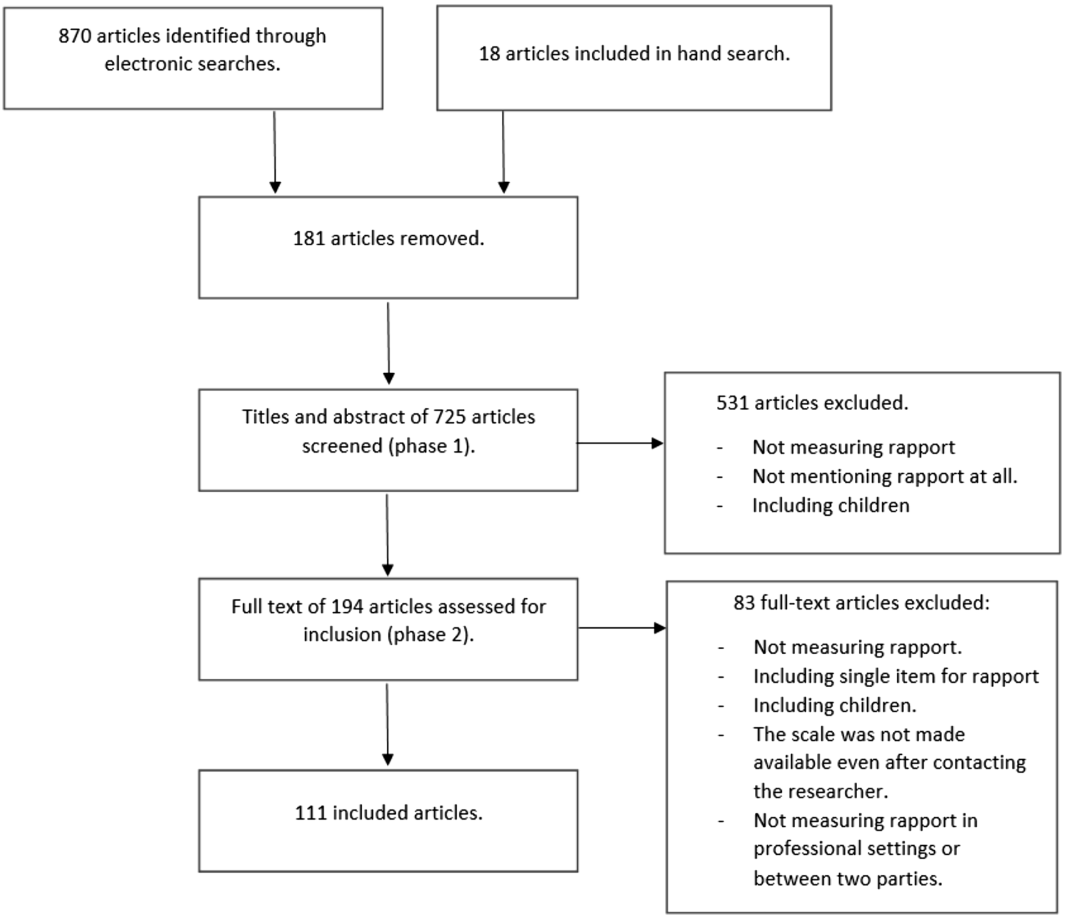

FIGURE 1 Preferred reporting items for systematic reviews and meta-analyses flow chart of the search and screening processes.

2.3 | Search results

The initial database search identified a total of 870 articles, with 707 remaining after the removal of duplicates. A hand search resulted in the inclusion of a further 18 articles, including originally established measures referenced in the articles identified by the database search. Figure 1 displays the preferred reporting items for systematic reviews and meta-analyses (PRISMA) flow chart of the search and screening process, including the number of articles identified during the review, the number of articles included and excluded, and the rationale for excluded articles. At the beginning of the full-text screening, a total of 19 articles referred to a measure that was not made available within the respective articles. When contacting the researchers to request the measure, two main issues arose: establishing contact with the researchers and locating the measure of rapport. For example, there were instances where an email address could not be confirmed, and it was not possible to connect with researchers using professional social media (e.g., LinkedIn and ResearchGate). Furthermore, several authors could not remember or find the exact measure they had used for a particular article. As a result of this process, nine accessible measures of rapport remained in the review, and 10 inaccessible measures of rapport were excluded from the review.

2.4 | Screening process

A two-phase screening process was used to refine the search to the most relevant articles based on the inclusion and exclusion criteria. In the first phase, the titles and abstracts of the articles were checked for relevance to assessments of rapport in professional contexts. Overall, 707 articles were screened resulting in 531 articles being excluded. The 176 articles that passed the first phase of screening, including borderline cases where doubts remained about the methodology, were then subjected to a second screening.

In the second phase of screening, the definition of rapport and set of inclusion and exclusion criteria previously outlined were examined across the full text of each article included at the first phase. A total of 111 articles (94 from the keyword search and 18 from the hand search) were deemed eligible for inclusion. Both phases of screening were completed by the lead researcher. Interrater reliability was computed to verify the lead researcher's reliability in coding. Here, two independent researchers external to the review coded 15% of randomly selected data in both screening phases: 107 articles from the title and abstract screening phase, and 26 from the full text screening phase. Interrater reliability was then established by conducting intraclass correlations coefficients (ICCs) comparing the decisions of the three coders across both screening phases. Overall, a

moderate to high degree of reliability was found between the three coders for both the title and abstract (ICC = 0.79) and the full-text screening (ICC = 0.75). Following each phase, a meeting was organised to discuss and resolve any disagreements among the coders.

2.5 | Developing the SSM

To visualise and summarise the 111 articles eligible for inclusion, a SSM was built as an excel file, allowing for various filters to be applied to facilitate exploration of the literature. The SSM can be accessed through the website (https://osf.io/qg4mx/?view_only=d1e94adb156e43efb1c7e82485abf65f). Column(s) of interest can be easily identified, and filters can be applied from a drop-down list of options, enabling the reader to interact with the data.

Each row in the SSM represents an article which qualified for inclusion, while the columns present a summary of the design for each study and key features relating to methodology, reliability and validity. Columns also indicate whether the study developed a new measure of rapport as part of their methodology or adapted an originally developed measure resulting in a modified measure, which normally involved the removal or addition of items. Validity is a difficult concept to define and the validation process of newly developed or modified measures can vary greatly (Sechrest, 2005). Boateng et al. (2018) suggest in their guide titled 'best practice primer for developing and validating scales in health, social and behavioural sciences' that validity should be demonstrated using predictive validity and a minimum of two different types of construct validity, such as convergent and discriminant validity. Therefore, the measures of rapport were considered validated if predictive, discriminant and convergent validity (or another form of construct validity) were explicitly and successfully assessed in the same article.

Additional columns within the SSM indicate which components of rapport or rapport building behaviours are being assessed within the measures of rapport. The components of rapport were informed by relevant theoretical models (e.g., Abbe & Brandon, 2013; Gabbert et al., 2021; Tickle-Degnen & Rosenthal, 1990) and include: (i) paying attention (acknowledging and understanding the knowledge and feelings of the interviewee), (ii) personalising the interview/interaction (the interviewer making a direct action in order to build a relationship or personalise the interview), (iii) being approachable (presenting an approachable and open demeanour) and (iv) establishing a mutual connection. Importantly, the first three components were highlighted by Gabbert et al. (2021) as the most common rapport strategies established via various verbal, non-verbal and para-verbal behaviours. The fourth component represents the feeling of rapport, or the mutual connection experienced between the interviewer and the interviewee. For example, Abbe and Brandon (2013) highlighted the notion of a shared or mutual understanding, which emerges throughout the interaction via mutual information disclosure, and transparency regarding the parties' mutual expectations or preferences (Valley et al., 2002). A fifth component, 'being professional', was added to capture the essence of several items featuring across measures of rapport that focused on maintaining an appropriate and respectful work ethic. Items from measures of rapport that were not represented by one of these components were omitted from further analysis. For example, Bronstein et al. (2012) included an item asking about satisfaction with the negotiation process. However, most items featured in the measures of rapport (98.4%, $n = 124$) were represented by at least one of the five components, and this process gave a good insight into how researchers conceptualised rapport.

3 | RESULTS AND DISCUSSION

In total, 111 articles were eligible for inclusion in the review, featuring 126 measures of rapport. Each measure followed a dyadic interaction whereby one party aimed to elicit information from the other. The articles spanned a wide range of fields including psychology featuring therapeutic and supervisor-supervisee relationships (32.4%, $n = 36$), education examining the teacher-student relationship (17.1%, $n = 19$), criminal justice examining the interaction between an investigative interviewer with witnesses, suspects or victims (16.2%, $n = 18$), the health and medical sector examining the relationship between a practitioner and their patient or trainee (14.4%, $n = 16$), computer science examining human-computer interaction (12.6%, $n = 14$), business examining the interaction between an employee and a customer (5.4%, $n = 6$), and hospitality examining the interaction between a server and a customer (1.8%, $n = 2$).

Of the 126 measures of rapport included in the review, 40.5% ($n = 51$) presented original measures, where a new measure was purposely developed as part of the study methodology, 23.8% ($n = 30$) presented modified measures, and 35.7% ($n = 45$) used a previously developed measure without any modifications. This led to the generation of two interconnected themes, the lack of consistency of measures of rapport and the tendency to develop single-use measures. Both themes are likely to be a direct result of divergence in how rapport is defined in the literature (Neequaye & Mac Giolla, 2022). The remainder of Section 3 focuses only on original and modified measures of rapport (64.3%, $n = 81$). Of these 81 measures, 93.8% ($n = 76$) were questionnaire-based using Likert rating scales, and 6.2% ($n = 5$) were designed as observational coding systems. Regardless of format, the measures are discussed below in relation to how well they adhere to recommended best practices in scale development and validation, as outlined by *the Standards for Educational and Psychological Testing*, summarised by Linn (2011). These include the following considerations: (i) instrumentation, (ii) psychometric scales, (iii) observational assessment, (iv) reliability and (v) validation. Following this, (vi) the item analysis will follow with a more nuanced consideration of the items within each scale included in this review. Discussions aim to shed light on how researchers have conceptualised and chosen to measure rapport.

3.1 | Instrumentation

This recommendation relates to the importance of clarity surrounding the construct being assessed, the population that the test is for, and

how scores should be interpreted or used. Most measures performed well on this element. For example, all articles discussed the importance of instrumentation within the relevant context (e.g., a medical context, an educational setting, an investigative interview). However, a definition of rapport was not always presented. Most measures were explicit regarding whom the test was designed for, with options asking for information from the professional (e.g., the doctor, counsellor, teacher and interviewer), the giver (e.g., the patient, student and interviewee) or an independent observer. A small number of measures (2.5%, $n = 2$) did not report who the measure of rapport was designed for.

Most measures (66.7%, $n = 54$) were designed for the information giver to report their perceptions of rapport with the professional they had interacted with. This is of no surprise, given that they are the target of rapport-building efforts. However, in real-life settings it is often difficult to ask for perceptions of rapport in this manner. In contrast, only 11.1% ($n = 9$) of measures assessed rapport based upon the perspective of the professional. The next most popular method was to rely on the perception of third party trained observers; used in 18.5% ($n = 15$) of measures of rapport. Approximately a third of these measures were based on observational coding systems (33.3%, $n = 5$) and two-thirds were psychometric scales (66.7%, $n = 10$). Observational coding systems allow for a more pragmatic and complex understanding of how rapport fluctuates during an interaction. For instance, Collins and Carthy (2018) developed their own observational measure based on Tickle-Degnen and Rosenthal's (1990) model of rapport and found that rapport behaviours were more prominent at the beginning of an interview. Alison et al. (2014) also developed their own observational measure inspired by motivational interviewing and interpersonal theories. Their research demonstrates the association between rapport-based techniques and adaptive interview practice as well as reduced passive, verbal and no comment counter-interrogation tactics.

Interestingly, only a single study examined rapport from more than one perspective. Richardson and Nash (2021) compared measures of rapport in an investigative interviewing context comprising a suspect, a lead interviewer, a secondary interviewer and an independent observer. Their findings revealed that there was a consensus in rapport ratings among all parties apart from the lead interviewer, implying that the lead interviewer may not provide the best estimation of how much rapport was built between themselves and the interviewee. In fact, previous research has demonstrated how challenging it is for people to accurately self-reflect on their own expertise (Dunning et al., 2003). Regardless, Richardson and Nash's findings raise an important consideration regarding which person's rating of rapport is most reliable, and which correlates best with desired outcomes such as cooperation and disclosure?

3.2 | Psychometric scales

This recommendation relates to the importance of clarity surrounding the administration, both for the test administrator and for the person completing the measure. In addition, it emphasises that a rationale should be provided for the process by which the measure was developed. Overall, measures performed well, and adequate information was reported that would allow future researchers to use the measure of rapport. However, 4.9% ($n = 4$) did not indicate the presence or absence of reversed items, and 2.5% ($n = 2$) did not provide information as to how participants should respond to the items. These omissions relate to important methodological information that prevents other researchers using the measure, thus preventing any replication or extension of the research.

There was a large amount of variability in the number of items used to assess rapport, with measures ranging from a minimum of three items to a maximum of 130 items. To respond to the items, most measures (85.2%, $n = 69$) used Likert scales. The remaining 14.8% ($n = 12$) of measures used one of the following types of response: a Guttman's scale, a 100-point rating scale, a 10 cm analogue scale, a continuous scale, a continuum or a 9-point unipolar rating scale. The format of the scales also varied greatly including both unidimensional and multidimensional measures. Rapport was most often measured holistically through a range of items, for example, Brimbal, Meissner, et al. (2021) used a range of different items requiring the interviewee to rate their impression of the interviewer, ultimately generating a single score for rapport. Measures of rapport were also developed based on a multidimensional structure, for example, Duke, Wood, Bollin, et al. (2018) measured five different aspects of rapport: (i) attentiveness, (ii) trust/respect, (iii) expertise, (iv) cultural similarity and (v) connected flow. In addition, Gremler and Gwinner (2000) built their measure based on two individual subscales: (i) enjoyable interaction, and (ii) personal connection. This variability further reflects the tendency to self-develop different ways to measure rapport and suggests inconsistencies in this field reach as deep as the dimensionality of the measures of rapport.

3.3 | Observational assessments

This recommendation relates to the importance of clarity surrounding the scoring criteria, specifically, that sufficient detail should be provided to ensure accuracy when scoring or coding the measure. Of the 81 measures, nearly half (46.9%, $n = 38$) did not explicitly report how the measure should be scored, making consistent use of the measure difficult due to the lack of scoring or coding information. The same number of measures (46.9%, $n = 38$) used Likert scales or similar, where scores were typically summed or averaged to quantify rapport. The remaining measures (6.2%, $n = 5$) comprised observational assessments. Alison et al.'s (2013) 'observing rapport-based interpersonal techniques' (ORBIT) measure is an influential tool (Duke, Wood, Bollin, et al., 2018), which has been used in multiple articles by the original research team. Despite the measure having good factorial validity, the review did not comment upon any other research teams applying ORBIT in experimental studies. A reason for this, is that ORBIT focuses on rapport built over repeated occasions and incorporates complex concepts that require training (see Alison et al., 2013).

Importantly, little distinction has been made within the literature between rapport built over short and long periods of time, or that repeated interviews allow additional instances to enhance the relationship between an interviewer and a source.

The other observational measures of rapport (4.9%, $n = 4$) each developed their own coding system (Bronstein et al., 2012; Collins & Carthy, 2018; Drolet & Morris, 2000; Lubold et al., 2021). Bronstein et al. (2012) reviewed the literature and mapped verbal behaviours based on linguistics (e.g., verbal agreement, disagreement, compliments or apologies) and Brown et al.'s (1987) politeness theory, which demonstrates the positive and negative impacts of dyadic interactions on impressions and emotions. Collins and Carthy (2018) further developed Tickle-Degnen and Rosenthal's theory by including verbal rapport-related behaviours to produce a systematic coding system. Drolet and Morris (2000) developed their own observational measure based on previous work by Bernieri et al. (1988) and coded solely nonverbal patterns of behaviours suggesting postural convergence, gestural synchrony, facial expression compatibility and facial expressions of mutual interest. Finally, Lubold et al. (2021) created a coding system relating to verbal elements of linguistic politeness, which may increase or hinder the presence of rapport (e.g., praise, formal politeness, inclusivity and name usage). Comparing these observational measures, Alison et al. (2013) and Collins and Carthy (2018) provide some overlap regarding the components of rapport being measured; both including common elements such as reporting use of reflective listening or paraphrasing. Recording name usage is also similar between Collins and Carthy (2018) and Lubold et al. (2021). Despite having some similarities, observational measures all rely on a different theoretical concept of rapport, resulting in different verbal and nonverbal behaviours of rapport being measured, thus once again reinforcing the inconsistencies across measures of rapport.

3.4 | Reliability

Reliability relates to the interpretation of the score (including subscores where relevant) based on estimates of relevant reliability and standard errors of measurement. Of the 81 newly developed measures, 76.5% ($n = 62$) reported at least one type of reliability for the measure they used and 23.5% ($n = 19$) did not report any type of reliability. Overall, the reliability was estimated by examining the internal consistency of the measure (87.1%, $n = 54$), the interrater reliability (11.3%, $n = 7$), both (1.6%, $n = 1$) or the separation reliability (1.6%, $n = 1$). Although the measures of rapport tended to be reliable, some articles failed to provide this important information. Assessing reliability is crucial to interpret assessments' scoring by demonstrating the consistency across usage of the measure and evaluating the magnitude of the measurement error (Linn, 2011). Therefore, most articles were in accordance with the best practice regarding reliability. Considering the statistics, only seven citations included in the review reported poor reliability whereby the reported values were either below 0.60 (Cronbach's alpha) or between 0.21 and 0.40 (Cohen's Kappa); these include Alison et al. (2013), Appel et al. (2012), Carlsson and Lundqvist (2016), Hutcheon et al. (2019), Joe et al. (2002), Kim et al. (2020), and Surmon-Bohr et al. (2020). From these citations, the reliability of the rapport behaviours included in ORBIT's motivational interviewing component have consistently been poor (as reported by Alison et al., 2013; Kim et al., 2020; Surmon-Bohr et al., 2020).

3.5 | Validation

Validation ensures that 'an instrument [measure] indeed measures the latent dimension or construct it was developed to evaluate' (Raykov & Marcoulides, 2011, p. 184). It particularly refers to a process, which begins by defining the construct of interest and follows by exploring its generalisability with other related constructs (Messick, 1995). Two main themes emerged regarding the validity of measures of rapport. First, there seem to be different pathways to assess the validity of a measure. Based on common best practice, measures were regarded as validated when at least two types of construct validity and predictive validity were assessed (Boateng et al., 2018). A minority of measures (11.1%, $n = 9$) followed these recommendations, with the tendency to rely on confirmatory factor analysis (CFA) to validate a measure. For instance, Alison et al. (2013) conducted a CFA to validate the factor structure of their coding systems. However, CFA only indicates that an a priori structure fits the sample and is replicated (Brown & Moore, 2012). Thus, it is unclear how a predefined structure fits within a definition and the literature of a given construct. Similarly, validity is a complex concept, which cannot be assessed directly, but rather through individual aspects of validity which are deemed relevant. For instance, Gremler and Gwinner (2000) validated their measure by examining construct validity. Convergent validity was demonstrated via correlations between total rapport scores and single-item rapport scores, and discriminant validity was indicated via the constructs under investigation being within two standard errors of one (Anderson & Gerbing, 1988). As another example, Duke, Wood, Bollin, et al. (2018) correlated their measure with other measures of rapport to demonstrate convergent and discriminant validity. Additionally, they assessed concurrent validity, which indicated their measure was predictive of the use of rapport strategies during an interview and significant correlations with the amount of shared information.

Looking more closely at the validity, of those which either developed or modified a measure of rapport ($n = 81$), a concerning 87.7% ($n = 71$) were not validated, and only a small minority (12.3%, $n = 10$) adhered to the validation guidelines adopted in this review. It is unclear, therefore, whether most measures of rapport appropriately assess the construct of interest. Furthermore, given their use in both research and practice, the findings from these measures should be considered carefully because there is a tendency to build single-use measures of rapport, promoting a quick and easy development process. These rarely adhere to best practice in measure development and, in turn, rarely attempt to validate their measure. However, a subset of researchers who have developed measures of rapport with goals of long-term use often fail to demonstrate the validity of these measures.

The current review only considered the more traditional route as a sign of validation which requires several aspects of validity to be tested. However, it should be acknowledged that other methods, such as CFA, exist to validate the theoretical structure of a measure. In this case, it seems like validation is predominantly considered for newly developed measures. Validity was very rarely checked when researchers used and modified an originally developed measure by removing or adding items. Best practice in scale development suggests validity should be verified as soon as a new measure is developed or modified. In fact, changes in the structure of a measure may directly affect the reliability and validity of a measure. For instance, Juniper (2009) raised concerns regarding the modification of validated questionnaires, warning that modifying the initial format of a measure risks affecting how people respond to the measure once modified. Therefore, we advise that any modification to a validated measure is carefully considered and implemented.

3.6 | Item analysis

In the item analysis, items from across the questionnaire-based measures were categorised based upon which component of rapport they were assessing. Four of the components were borne from relevant theoretical models and reviews of rapport (e.g., Abbe & Brandon, 2013; Gabbert et al., 2021; Tickle-Degnen & Rosenthal, 1990), and included (i) paying attention, (ii) personalising the interview/interaction, (iii) being approachable and (iv) establishing a mutual connection. The results suggested that most measures assessed 'personalising the interview' items (72.8%, $n = 59$), 'being approachable' items (72.8%, $n = 59$) and 'establishing a mutual connection' items (71.6%, $n = 58$), while 63.0% ($n = 51$) of measures assessed 'paying attention' items. Thus, the current review supports the components of rapport highlighted by previous research. Overall, 18.5% ($n = 15$) of the measures of rapport included items from all four components. There was only one instance where the measure did not assess any of these components of rapport (Spreng et al., 2009). Instead, the items in Spreng et al.'s measure of rapport focused on traits of empathy which inherently reflects an individual's personality rather than a particular context.

While coding the items, it became apparent that many measures also assessed the interviewer's expertise and professionalism. For example, Duke, Wood, Bollin, et al. (2018) referred to the performance and professional conduct of the interviewer during the interview including items such as 'the Interviewer made an effort to do a good job' or 'the Interviewer acted like a professional'. Thus, to capture the importance of 'being professional' among researchers, this element was acknowledged as a fifth component of rapport. However, it is unclear at present how being professional relates to the development of rapport and how it fits into the theoretical structure informed by previous reviews. One concern is the subjective nature of professionalism and the precisely way in which it relates to rapport. For example, an interviewee may not believe the interviewer completed a good job of the interview, but an observer may believe that the interviewer satisfied all best practice requirements. Future research is needed, therefore, to consider what is expected of a professional interviewer and to explicitly describe the level of professionalism required. At the very least, a being professional component could be part of a toolkit as a reminder of what is considered best practice in the field.

In general, the current findings are promising as they imply a large amount of agreement on what comprises rapport, with at least one of the five components being recognised as a key element of rapport. However, the variance in perceptions of how rapport should be measured remains important and little empirical attention has been given to individual components of rapport.

3.7 | Implications

While research on rapport has flourished, more investigation is needed to target two key issues highlighted in this review: (i) consistency and (ii) validity. Regarding the first issue, a lack of consistency between measures directly affects the generalisability of findings in the field. As such, it is important and necessary to reach an agreement regarding how rapport should be defined and measured. There is a tendency to develop single-use measures, and we strongly encourage researchers to look for an already established measure of rapport when possible. However, this tendency may highlight a general dissatisfaction with current measures and requires more research to ensure the development of an evidence-based measure that adheres to the methodological best practice recommendations of measure development. In addition, it may be useful to consider researchers' and practitioners' needs in operationalising rapport to directly target the lack of consistency across definitions and measures. Perhaps commonalities can be established between what both parties consider to be important when building rapport in professional contexts. Regarding the second issue, the lack of validity relating to developed measures of rapport represents a significant limitation in the available literature. While concerns regarding consistency relate to the generalisability of findings on rapport strategies, concerns regarding validity relate to whether rapport is being properly measured across the literature and whether current measures of rapport assess the construct of interest. Therefore, we urge future researchers to consider one of the many paths to validation when developing or modifying measures as part of the methodology of the study.

3.8 | Limitations

While the SSM allowed a precise analysis of the accessible measures of rapport, the results should be carefully considered in light of their limitations. First, despite a systematic approach taken to find relevant articles, it is possible that some relevant measures may have been missed. Although open science is a growing concept, allowing for supplementary materials to be made available, many articles that referred to a measure of rapport that had been developed or modified did not

include access to the measure itself. As such, the accessibility of the measures is a significant factor preventing the inclusion of these measures in the review. We believe, therefore, that scale development processes would benefit from a registration process, similar to the process of registering systematic reviews and meta-analyses. For example, scale development measures could be registered and stored in one system, allowing all exemplars of the measures to be gathered and easily accessed. Not only would this approach help ensure that researchers' contributions to the field are accessible, it would also allow for a more controlled and meticulous process of measure development, which would in turn improve the quality of measures in psychology.

Second, various interpretations exist for both rapport and validity. In the current review, we purposely adopted the definition of professional rapport (Gabbert et al., 2021) and used traditional recommended guidelines of validation (Boateng et al., 2018). However, both rapport and validity are complex concepts because of their subjective nature, which often yield different definitions and applications. However, establishing rapport or validation of its measures are not a tick box exercise and we acknowledge that alternative methods can be used. Nevertheless, considering different interpretations, the lack of validation remains a significant issue which only adds to the difficulty of developing commonly accepted measures of rapport.

4 | SUMMARY AND RECOMMENDATIONS

Building on Gabbert et al.'s (2021) systematic review, the current review explored how rapport is conceptualised via a detailed examination of published measures of rapport that have been used in professional information-gathering contexts. As such, we extend Gabbert et al.'s findings by considering theoretical and methodological best practices in scale development and validation (Boateng et al., 2018). Synthesising the results of both Gabbert et al.'s work and the present systematic review, we offer a set of recommendations to address the lack of consensus in how rapport is defined, assessed and operationalised.

4.1 | Definition

The definition of rapport has been discussed at length in two recent discussion articles (Neequaye, 2023; Neequaye & Mac Giolla, 2022). The definition is important because it influences how rapport is understood and measured. In professional contexts, especially those featuring time constraints, it is often the case that rapport is sought after rather than achieved. Thus, Gabbert et al.'s (2021) conceptualisation and definition of professional rapport is arguably more representative of what happens in professional settings. This conceptualisation is also reflected in the literature, where there appears to be a shift from prescriptive notions of ideal interactions to practical strategies interviewers can employ to establish a professional connection with interviewees. For example, Brimbal, Meissner, et al. (2021) demonstrated that rapport skills can be trained, focusing on evidence-based strategies to be implemented by the interviewer that are known to increase rapport (e.g., active listening, use of empathy). However, this shift is accompanied by a debate over the authenticity of rapport, with some arguing for the necessity of a mutual connection when building rapport. In response to previous papers calling for a working definition (Neequaye & Mac Giolla, 2022), we therefore endorse Gabbert et al.'s definition of rapport which suggests the functional use of rapport strategies by the interviewer to enhance cooperation between the interviewer and interviewee. This definition emphasises the interviewer's responsibility in building rapport without assumptions about the presence or absence of a mutual connection, the primary objectives remaining to encourage cooperation and to facilitate information disclosure.

4.2 | Measures

This review has highlighted a lack of consistency across a variety of measures of rapport, as well as a notable gap in the literature: the absence of a validated and reliable measure suitable for accurately evaluating rapport. Although previous attempts within investigative settings have yielded valuable insights into rapport dynamics (e.g., Alison et al., 2013; Duke, Wood, Bollin, et al., 2018, theoretical and methodological limitations remain. Based on the findings of the present systematic review, as well as reviews by Gabbert et al. (2021), Neequaye and Mac Giolla (2022), and Neequaye (2023), we propose that the accumulated research on professional rapport skills provides a strong basis for developing a new measure that fulfils all necessary criteria while being grounded in robust theoretical and methodological principles (AERA, APA, & NCME as cited in Linn, 2011). We suggest that the present systematic review provides researchers with valuable information and insights to develop a new, synthesised measure of rapport, drawing upon our current comprehension of rapport-building strategies and their evaluations.

4.3 | Methodology

The current review builds upon and expands the findings of Gabbert et al. (2021), revealing a significant lack of overlap among measures of rapport, not only within investigative contexts but also across various professional information-gathering settings. Our review provides insight into the similarities and differences between the many individual rapport measures available and discusses the extent to which the development of such measures have adhered to best practices and recommendations for scale development. One of the most salient findings is the widespread lack of validity across most rapport measures, which hampers the generalisability of findings as well as raising questions about whether the construct under investigation (rapport) is truly being examined. Further, a significant portion of the measures reviewed pertained to modified versions of existing rapport measures. Given that minor alterations may affect

and destabilise a measure's structure (Juniper, 2009), these types of modification are not recommended practice. If modifications are deemed necessary, we recommend the researchers provide a robust rationale for the adjustments and seek to ensure the reliability and validity of the modified measure.

While existing guidelines on developing new measures offer valuable insights into recommended best practice (AERA, APA, & NCME as cited in Linn, 2011; Boateng et al., 2018; DeVellis, 2012), innovative methodologies, such as item response theory may also provide valuable information about the appropriateness of scale items. Given that research within investigative contexts aims to inform best practices, we advocate for the incorporation of expert evaluation. This involves seeking the expertise of practitioners or scholars to tailor rapport measures to the specific needs of the field, promoting further collaboration and addressing the urgent need of a consensus. Only a small number of rapport measures in the present review were found to incorporate expert evaluation, and many relied on student samples (see Duke, Wood, Bollin, et al., 2018). Notably, Alison et al. (2013) emphasised the ecological validity of their measure by utilising real interviews with terrorists and trained investigators as coders. While accessing forensic-based samples may be challenging, we believe it is feasible to incorporate expert evaluation and utilise more diverse samples to improve the content validity of new measures.

5 | CONCLUSION

This review has summarised and synthesised how rapport has been measured across different professional information-gathering settings. Findings have been discussed in relation to accepted best practice in scale development and validation with regard to the instrumentation, psychometric scales, observational assessment, reliability and validation of published measures of rapport. This review has also included an analysis of items within each measure of rapport to consider how rapport has been conceptualised across measures, finding that most items relate to the main components of rapport as theorised in the literature. Overall, key limitations of existing measures include a lack of consistency between measures (potentially due to the multiple definitions of rapport at present in the literature), minimal adherence to recommendations in scale development and validation, and a lack of consideration of the intended audience of the measure to ensure its appropriateness and reliability. We therefore join other researchers in calling for a collaborative effort to agree upon a working definition, and associated measure, of rapport.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The datasets referred to in the manuscript is available on the open-source framework (OSF) project page: https://osf.io/qg4mx/?view_only=d1e94adb156e43efb1c7e82485abf65f.

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