The quality of relationships between people with intellectual disabilities and support staff

Developing the Indicators of Rapport Measure

Key Words

Intellectual disability, rapport, challenging behaviour, positive behavioural support

Abstract

Background The quality of relationships between support staff and people with intellectual disability (ID) is important, if individuals are to receive high quality support. Research describing features of the quality of such relationships is limited and hampered by a lack of measurement tools. This paper describes the development and piloting of a measure of relationship quality or rapport.

Materials and methods The Indicators of Rapport Measure (IRM) was developed. Interactions between staff and three participants with ID, who presented challenging behaviour, were analysed using the IRM. IRM data were compared to rapport ratings made by staff and ID participant preferences.

Results Systematic differences in rapport were identified by the IRM. Some support staff had a high IRM score, suggesting good rapport, with one ID participant and a low IRM score, suggesting poor rapport, with another. There were limited similarities between scores on the IRM and comparison measures.

Conclusions Improving rapport may lead to reductions in challenging behaviour and be a key strategy in a PBS Framework model. The IRM may provide a useful measure of the quality of relationship between staff and people with ID. However, its complexity may limit its application in everyday practice and related but simplified measures should be developed.

Introduction

Many people with intellectual disabilities (ID) live in environments where they have paid support staff to assist in their day-to-day lives. Such staff assist with care and health needs, engagement in activities, skill development, and in many other areas of the lives of those they support. Support staff also provide important opportunities for social interaction that, otherwise, may be very limited in the lives of people studies indicate have smaller than average social networks (Forrester-Jones, 2006; McVilly et al, 2006). Guidance on the support worker role, such as the competence checklist 'Support Workers Doing Positive Support Well' (PBS Academy, 2016), emphasises the need for support staff to 'reflect on the relationship they have with the person' with a disability so that they can 'develop a positive relationship' (PBS Academy, 2016, p.3). People with ID have also expressed the significant value of a good relationship with support staff (Van Asselt-Goverts et al, 2015; Guthrie and Beadle-Brown, 2006).

Many of the important attributes of staff support described by people with ID are related to relationship quality or rapport (Perez, 2014; Evans and Gore, 2016). There is currently no commonly agreed definition of rapport (English *et al*, 2022). Tickle-Degnen and Rosenthal (1990) have conceptualised rapport as involving three interrelated components: mutual attentiveness (creating focused and cohesive interaction); positivity (involving mutual friendliness and warmth); and co-ordination (describing balance, harmony and synchronicity between two persons). Having meaningful relationships involving rapport with friends, family, associates and those that support you is an important aspect of having a good quality of life (Seligman,

2018), which is an underpinning component of Positive Behavioural Support (Carr et al, 2002; Gore et al, 2013) and Active Support (Mansell and Beadle-Brown, 2012, p.52). Baker *et al.* (2017, p.181) considered staff training in Active Support and noted that '[while] quality of the relationship between people with intellectual disabilities and their caregivers is increasingly being recognised as an important variable, there has been surprisingly little focus on how to quantify or improve it'.

While clearly of more general relevance, rapport has been seen as having particular significance in the lives of people whose behaviour is described as challenging. For example, McGill *et al* (2018, 2020) stressed the need to support individuals to develop and maintain positive relationships including those with support staff as an aspect of providing a capable environment associated with reduced frequency and/or severity of challenging behaviour. Thus, improving rapport may be a key aspect within a PBS Framework intervention model. Carr (1994) first suggested that rapport was an important underpinning of more technical methods (such as functional communication training) used in interventions with such behaviour. Carr (1994, p.114) went on to suggest some of the recognisable signs of a developing rapport:

> *'The person will become more responsive to you. He or she will look at you more often, stay close to you, and continue to interact with you, not walk away once you have approached him or her. He or she will seem happy to see you and smile, laugh, or, if verbal, talk to you when you are around and ask for you when you are not around'.*

Despite rapport's importance, studies indicate that people with ID may interact little with support staff, often appearing disconnected (Bunning, 1998; Zeedyk et al, 2009; Jones et al, 1999). They may avoid care staff and seem unhappy about interaction (Carr et al, 1980; Singer et al, 1987; Mace et al, 1988). These initial findings highlight the possibility that the behaviour of people with ID may be indicative of the quality of the relationships they have with those supporting them.

In previous research, experiences of rapport were examined in focus groups (Guthrie and Beadle-Brown, 2006). People with ID, staff and professionals discussed influences on and implications of rapport. Participants more often described characteristics and personal experiences of poor than good rapport. When asked how those with whom they had poor rapport act towards them, most contributions referred to 'control or dominance' behaviour (Guthrie and Beadle-Brown, 2006, p.25-27). All participants were able to describe characteristics of others that would build, maintain, or conversely damage, rapport. For example, being a good listener and doing things together would build rapport; being rude, disrespectful or lacking warmth would damage rapport.

Rapport building, with consequent reduction in challenging behaviour, was demonstrated by McLaughlin and Carr (2005) with three participants with ID. Three methods of measuring rapport were developed: self-ratings by staff of their rapport with each participant; staff ratings of their colleagues' rapport with each participant; and preference testing sessions in which each participant was asked to choose staff to support them. Staff identified as having poor rapport were coached to improve the quality of their relationships with participants. Following this intervention, activities

were completed successfully by staff with previously poor rapport, without challenging behaviour occurring.

The measures used by McLaughlin and Carr (2005) relied on support staff opinions, or the preferences of participants with ID. Such measures have limitations, the former being subjective, and the latter potentially difficult to use with people with more severe ID. A measurement tool based on direct observation of the behaviour of people with ID would address both these limitations. Since no existing observational tool could be identified, the aim of the current study was to develop and pilot an observational tool to measure rapport based on the behaviour of people with ID. Given the focus of much previous research, it was decided to focus this study on people who presented challenging behaviour and who had limited verbal communication. An observational measure of rapport might then be of use in PBS-based assessment and intervention.

Method

Setting and Participants

Intellectually disabled participants (IDP) lived in a residential service in England. Inclusion criteria were threefold: a diagnosis of ID; limited verbal communication i.e. people who have no verbal communication or communicate using brief word combinations or signs /augmentative communication; and that the individual's behaviour was defined as challenging by services.

Data on challenging behaviour were identified using the ***Behaviour Problems Inventory*** (BPI) (Rojahn *et al*, 2001) The BPI is an informant-based assessment which collects information on three subscales of behaviour – Stereotyped, Self-injurious and Aggressive/Destructive. Bernie (all names have been changed) was male, 41 years old and had diagnoses of severe ID and Autism. Bernie presented high frequency and severity stereotyped behaviour and low frequency and severity self-injury and aggressive/destructive behaviour. Alanis was female, 43 years old and had a diagnosis of ID. Alanis presented high frequency and severity aggressive/destructive behaviour. Ajay was male, 47 years old and had diagnoses of ID and Autism. Ajay presented high frequency and severity stereotyped behaviour and low frequency and severity aggressive/destructive behaviour.

Information was collected about the adaptive skills of the three IDP using the ***Vineland II Adaptive Behaviour Scale*** (VABS) (Sparrow *et al*, 2005). For Bernie age equivalent scores across Vineland subdomains ranged from 3 months to 6 years, 6 months. For Alanis scores ranged from 1 year 10 months to 8 years and for Ajay the range was 7 months to 4 years 7 months.

Staff participants (SP) included six males and three females with an average age of 48 years (range: 26-58 years). One female participant was withdrawn from the study at a later point. All had worked in the setting for at least six months and had extensive experience of working with people with ID (average: 16 years, range: 3-30 years). One had a nursing qualification, six had NVQ's at level 2/3 and one no qualifications.

Measures

Indicators of Rapport Measure (IRM)

Behavioural indicators of rapport were drawn from a range of literature sources (Green and Reid, 1996; Carr et al, 1994; Leaning and Watson, 2006; Favell et al, 1996) and operational definitions developed. The final IRM measure included the following categories of behaviours:

- actions,
- positive facial expression,
- vocal sounds / speech,
- physical contact,
- gestures,
- eye gaze.

Between them, the categories contained twenty-four behaviour codes as shown in Table 1.

(Table 1)

Using pre-existing film, the measure was piloted by the first author to clarify definitions and increase the reliability of coding prior to the study commencing.

McLaughlin and Carr Measures

The three rapport measures developed by McLaughlin and Carr (2005) were used, hereafter referred to as McLaughlin and Carr (M&C) measures. Efforts were made to conduct these measures in a manner consistent with their original use, including by contacting the first author of the original paper. Their use is outlined here, full details being available in McLaughlin and Carr (2005).

1. **Staff Self-rating of Rapport**

This is a single question on a Likert scale ranging from 0-5:

0 = The majority of my interactions with this person are awkward, unpleasant, and stressful. I do not feel particularly close to this person and oftentimes, it is difficult for us to find any "common ground."

5= The majority of my interactions with this person are enjoyable, satisfying and interesting. Together we share a warm, open, balanced relationship. I find that we have a lot in common and enjoy each other's company.

2. **Staff Rating of Other Staff Rapport**

SP are given a list of their colleagues' names and asked to write a 1 next to the name of the staff member they view as having the best relationship with each IDP, 2 next to the SP they view as having the second-best relationship etc., until all staff have been rank ordered.

3. **Preference Testing**

This is a process of systematically presenting each IDP with two staff members at a time, and asking "who would you like to help you today?" Each member of staff is compared against each colleague, with the IDP's choice always being honoured.

Each IDP could indicate their choice in any way consistent with their communication abilities including verbally, gesturally or through their actions.

Procedure

IRM

The three IDP were filmed in half-hour periods by the first author. Times of no structured activities were selected so that participants were unrestricted in moving between and seeking out staff. Data collection was continued until each of the eight SP had been present for 150 minutes of filming of each IDP. IDP were not filmed in bathrooms or bedrooms. Rapport behaviour directed towards the observer, who had no history of relationship with any of the IDP, was low for all IDP.

M&C Measures

Over the period of filming, SP completed Staff Rating of Other Staff Rapport and Staff Self-rating of Rapport measures and preference testing in relation to each IDP. Advice and modelling of all procedures was given by the lead researcher. All M&C measures were administered, checked and collated independently of the lead researcher by an administrative colleague otherwise not involved in the research.

Ethics

Ethical approval was obtained from the National Research Ethics Service. All IDP were assessed as lacking capacity to consent to participate in the research. Consultee advice was obtained for all three IDP in line with the Mental Capacity Act (2008). In two cases this came from their closest relative, in one from their social services care manager.

Data processing and reliability

Coding was completed from film using a thirty-second partial interval recording. While partial interval recording was likely to overestimate the occurrence of some behaviours this was considered less significant than the risk of completely "missing" many behaviours through the recording procedure.

Prior to inputting into SPSS, IRM data were summarised across each filmed observation, to show the frequency of intervals that each code was recorded for each SP. Additionally, the number of times IDP asked for SP when they were absent from the service/not on duty was recorded. Twenty-five percent of films were viewed by the first author and a second observer. Cohen's Kappa scores across all participants and IRM categories averaged 0.95 (range: 0.60 – 1.00). Exact agreement on presence / absence of SPs ranged from 91-100% (mean = 98%).

Staff were fully informed about the purpose of the research as this was considered the most ethical approach. At the start of the study, they were advised not to alter their usual interaction style with IDP. During filming one SP (Beth, not her real name) consistently increased her interactions with the IDP who was being observed. After this had happened a number of times (with no exceptions when changing from observing one IDP to the next), Beth was advised not to alter her interactions in this manner. However, this pattern continued and the observer concluded that data on IDP interactions with Beth would not represent what typically happened when

observations were not being conducted. Consequently, further analysis of the IRM excluded data from Beth.

Due to shift patterns, some staff were available more frequently during observations and there was more overall footage of some SP than others. To keep the time equal for all SP, 'Asking for staff when absent' was only coded until the full 150 minutes of each SP observation was completed. For some SP it took seven rather than five observation sessions to reach 150 minutes. To allow comparability between sessions and participants, all data were prorated to a 30-minute session length.

To aid comparability with the M&C measures, SPs were rank ordered on the basis of their IRM score with the four highest classified as Good rapport and the four lowest as Poor rapport. This process was repeated for each IDP.

Results

Stability of IRM scores

There was wide variation between observation sessions. Staff scoring highly overall on the IRM did not have high scores in all observations. However, staff scoring poorly overall tended to score poorly on all observations. Total scores for each IRM category for all SP and each IDP are shown in Table 2.

Table 2

Table 2 shows that Bernie directed more rapport behaviour at SPs Sim and Carl, especially in respect of Actions, Positive Facial Expression, Vocal-sounds / Speech

and Eye Gaze. In contrast, Bernie directed consistently lower levels of rapport behaviour at Helen, Ron and Tom. Similar varations can be seen in Table 2 for Alanis and Ajay.

Figure 1 shows total scores on the IRM for each SP across all IDP. For some SP, high levels of rapport behaviour were directed towards them by one IDP and low levels by another. For example, Helen had a high level of rapport indicators directed towards her by Alanis and low levels of rapport indicators from Bernie and Ajay. The opposite picture is true for SP Sim. Matt and Tom had fairly low levels of rapport behaviour directed at them by all IDP.

Figure 1

Staff gender and keyworker status

Female IDP showed more indicators of rapport towards female SP and male IDP more towards male SP. The mean score for staff of the same gender was 203.4 (range 8-402) and of the opposite gender 100.1 (range 12-199). Means were not significantly different ($t=1.78$, $p>0.05$). Keyworkers (indicated in Table 2) consistently scored highly for the individuals they keyworked.

McLaughlin and Carr measures

Preference testing scores in the current study were mostly within a narrower mid-range than those reported by McLaughlin and Carr (2005). SP were grouped into good and poor/ neutral rapport, based on their percentage score relative to their colleagues. The good rapport group encompassed percentage scores between 57%

and 100%, the poor/neutral group scores from 0-57%. With respect to staff self-rating, McLaughlin and Carr counted SP as having a good rapport if they had self-ratings of 4-5. SP in the poor rapport group had self-ratings of 0–3. This methodology was applied in the current study. McLaughlin and Carr classified SP as 'good rapport' if they were consistently rated by fellow staff members as at or above the median relative to other staff. SP consistently ranked below the median were classified as 'poor rapport', this methodology was applied to the current study.

M&C measures and IRM

For each IDP, IRM total scores were compared with each M&C measure. SP classified as good from preference testing had higher IRM scores than poor/neutral rapport SP (223.5 vs 115.2, U = 54.500, p = .186, Cohen's d = 0.67). SP self-rated as good rapport had higher IRM scores than those self-rated as poor rapport (172.4 vs 136.2, U = 57.000 p = .349, Cohen's d = 0.22). SP rated as good rapport by other SP had higher IRM scores than SP rated as poor rapport (212.9 vs 112.8, U = 43.000, p = .510, Cohen's d = 0.65.

Discussion

This paper has sought to take some initial steps towards the development of valid and reliable tools for the measurement and investigation of rapport between people with intellectual disabilities and their support staff. It proved possible to develop and use the IRM as an observational measure in which potential indicators of rapport with their support staff were coded from the behaviour of three IDP. This process

allowed the identification of a total score on the IRM for each IDP-SP pairing, providing a potential measure of the rapport (or quality of relationship) of each pairing. Analysis of the data gathered led to two main findings. First, IRM data showed meaningful patterning. Second, those staff with good rapport scores on M&C measures had higher scores on the IRM. Both findings suggest that the IRM may provide a valid measure of rapport.

Meaningful patterning of IRM data reflected variations across IDP, SP keyworker status and gender. Some SP had an IRM total that was high for one IDP and low for another. Such differentiation suggests that the measure was identifying differences in rapport rather than just the interaction style or skills of specific SP. Had the latter been the case then SP would be likely to have high IRM scores in respect of all IDP rather than the differentiated pattern found. The keyworkers of all IDP fell into the good rapport group for IRM total score. Keyworkers are often assigned to activities that might be expected to build rapport, such as supporting people with personal shopping, or on holiday. Of course, it may also be the case that staff are allocated to keyworking duties because of the apparent quality of their pre-existing relationships with IDPs. Although statistical significance was not reached, SP were also more likely to have higher scores on the IRM for IDP of the same gender. However, some male staff did not score highly on the IRM with IDP of either gender.

Regarding the second main finding, average IRM scores for SP in the good rapport groups for each of the M&C measures were consistently higher than those of staff in the related poor rapport groups. That is, for each IDP, staff with whom they were

identified by the IRM as having good rapport were more likely to be similarly identified by the M&C measures. These differences in IRM scores between those staff identified as good vs poor rapport represented medium effect sizes in two of the M&C measures but none were statistically significant, reflecting variable and overlapping distributions between the groups.

The current study had a number of strengths and limitations. Notable strengths included the development of an original approach to the measurement of rapport, a topic that has often been seen as important within PBS but little researched. The approach used was detailed and rigorous, identifying clear and meaningful variations in the behaviour of intellectually disabled participants towards the staff supporting them. Notably, the study focused on the behaviour of people with severe intellectual disabilities and limited verbal communication skills, a group sometimes ignored in research because of the difficulties around consent and the usually more time-consuming nature of data collection.

Inevitably, however, the study also had measurement and design limitations. Originally, it was hoped to code videos using continuous event and duration recording. However, this proved too time-consuming leading to the use of partial interval recording. While likely to overestimate total duration of behaviours coded and underestimate high frequency behaviours, this is very unlikely to have materially affected the reported findings which are based on comparisons between IDP-SP pairings rather than absolute levels of the behaviours coded. Even this approach,

however, was time-consuming which could discourage the IRM's further use in research or practice. Potential alternatives are discussed below.

SP were fully aware of the purpose of the study (but not of the specific behaviours being recorded), and it is possible that this could have resulted in alterations in SP behaviour towards IDP. Such reactivity is always an important consideration in observational studies and led to the observer paying careful attention to any sign of its occurrence. When this was identified with one member of staff, their IRM data were not further analysed. Matters here occurred as planned but it is acknowledged that there was a subjective element to the process of excluding the data and future research should identify objective, data-based criteria for such exclusions.

Some SP struggled to complete M&C measures fully and increased training would have been useful, particularly in respect of staff ratings of other staff. SP did not appear to have the very clearly good or poor rapport described by McLaughlin and Carr (2005) so that differences in rapport were less clear-cut. Alternative ways of grouping SP following preference testing were needed as the current study did not find the same consistent variation in preferences. It remains unclear whether the differences found between the studies in use of M&C measures reflect problems of implementing McLaughlin & Carr's methodology, the need to adapt preference testing to allow use with more severely disabled IDP or reflect other issues, perhaps differing cultural and institutional contexts. It should be noted, however, that McLaughlin and Carr did not provide raw data on their use of the measures and selected IDP for whom there was already evidence of variation in their preferences

across staff. This may have contributed to the differences in results between the studies.

The lack of significant differences between IRM scores of staff in good or poor rapport groups for the M&C measures coupled with (in two of the three comparisons) medium effect sizes suggests that the current study was under-powered. Based on the average effect size found, the power of the current study was 0.24, substantially less than the 0.8 typically recommended. The n (number of IDP-SP pairings) needed would be 100 to achieve this compared to the actual figure of 24. An underpowered study is, of course, more likely to accept the null hypothesis when it is false i.e. make a type two error.

The study reported here carries a number of potential implications for further research. The complexity of use of the IRM might be addressed in a number of ways. A simplified observational measure, for example, might aim to capture indicators of rapport in real time without the use of film. Such a measure could include only those IRM codes most frequently used such as movement, vocalisation and eye gaze and could also take account of neurodiverse or other individual differences in rapport behaviours. Or it might prove possible to develop a valid and reliable rating scale. The IRM itself could be substantially shortened with less periods of observation for each IDP-SP pairing should research support the validity of such a briefer procedure.

More substantively, the preliminary findings from the current study with respect to keyworkers and staff of the same gender clearly need further investigation using a larger sample. It would also be very interesting to use the IRM, or derived instruments, to investigate possible fluctuations in rapport over time. Might increases in rapport reflect staff spending positive time with individuals or decrements result from poor management of challenging behaviour? Such investigations might usefully be combined with qualitative accounts from staff and service users regarding changes in their relationships.

In conclusion, rapport between paid staff and people with ID has been described as important. A focus on the quality of relationships people with ID have with staff might contribute to significant quality of life improvements, improve social contact and promote reductions in levels of challenging behaviour, thus acting as a helpful intervention within the PBS Framework model. Further, the reliable and valid assessment of the quality of such relationships could prove invaluable to those managing, inspecting and monitoring services, training staff, or supporting individuals and their families.

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Category	Codes
Actions	• Approach stationary carer • Maintain close proximity to stationary carer • Follow moving carer • None of the above
Positive facial expression	• Smiling, giggling or laughing • None of the above
Vocal sounds / speech	• Word approximations • Vocalisations while smiling • Singing, joking • Asking for an absent carer or calling a carer by name • None of the above
Physical contact	• Cuddle/hug • Kissing • Touching • Lightly tapping • Stroking • Hand holding • High five • Leading carer • None of the above
Gestures	• Beckon • Pointing • Mimicking • Thumbs up • Sign language or attempts • Nodding head • None of the above
Eye gaze	• Tracking a moving carer /moving eyes or head • Looking at a stationary carer • None of the above

Table 1 IRM categories and individual codes

Table 2 ID participants and rapport behaviour in IRM categories across staff

	Actions			**Positive Facial Expression**			**Vocal-Sounds / Speech**			**Physical Contact**			**Gestures**			**Eye gaze**			**Total (* indicates keyworker)**		
	Bernie	Alanis	Ajay	Bernie	Alanis	Ajay	Bernie	Alanis	Ajay	Bernie	Alanis	Ajay	Bernie	Alanis	Ajay	Bernie	Alanis	Ajay	Bernie	Alanis	Ajay
Ava	16	171	27	9	28	1	6	132	22	0	17	0	0	45	1	13	189	44	44	582*	95
Ron	2	51	8	2	7	0	2	48	22	0	0	0	0	7	2	5	64	32	11	177	64
Matt	11	4	42	5	0	2	1	10	23	0	0	0	1	4	5	18	12	51	36	30	123
Sim	17	1	86	26	0	5	42	4	51	1	0	7	2	1	9	93	6	83	181*	12	241
Carl	30	21	69	17	4	10	41	54	59	1	0	2	16	18	22	58	84	109	163	181	271*
Ed	17	32	128	10	8	8	8	50	109	0	0	16	6	22	11	65	87	130	106	199	402
Helen	2	147	58	5	23	1	5	152	47	0	44	2	1	35	8	11	205	48	24	606	164
Tom	2	7	11	0	7	6	0	19	14	0	0	2	0	7	1	6	35	19	8	75	53

Mean category code total	12	54	54	9	10	4	13	59	43	0.25	8	4	3	17	7	34	85	59	72	233	177
Range	2-30	1-171	8-128	0-26	0-28	0-10	0-42	4-152	14-109	0-1	0-44	0-16	0-16	1-45	1-22	5-93	6-205	2-130	8-181	12-606	53-402
Median	13.5	26.5	50	7	7	4.5	5.5	49	35	0	0	2	1	12.5	6.5	15.5	84.5	55	40	179	143.5

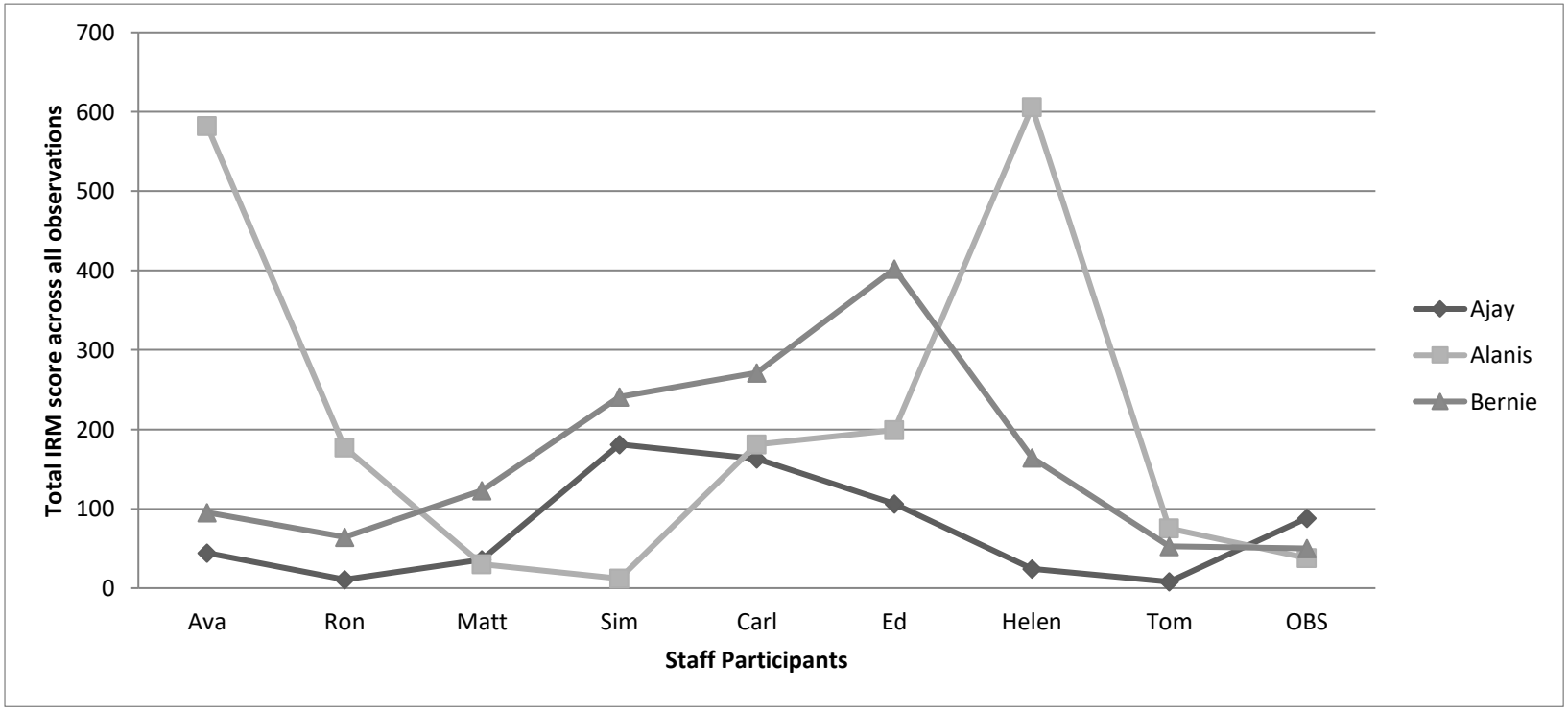

Figure 1

Comparison of IRM totals for SP across ID Participants

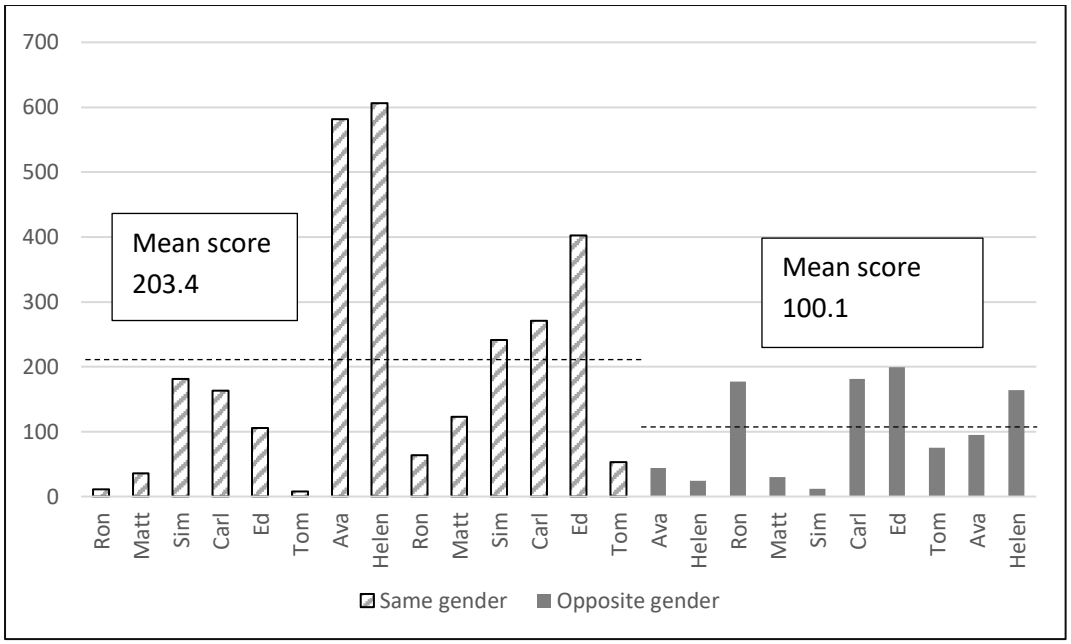

Figure 2 IRM total score for staff of the same/opposite gender to IDP

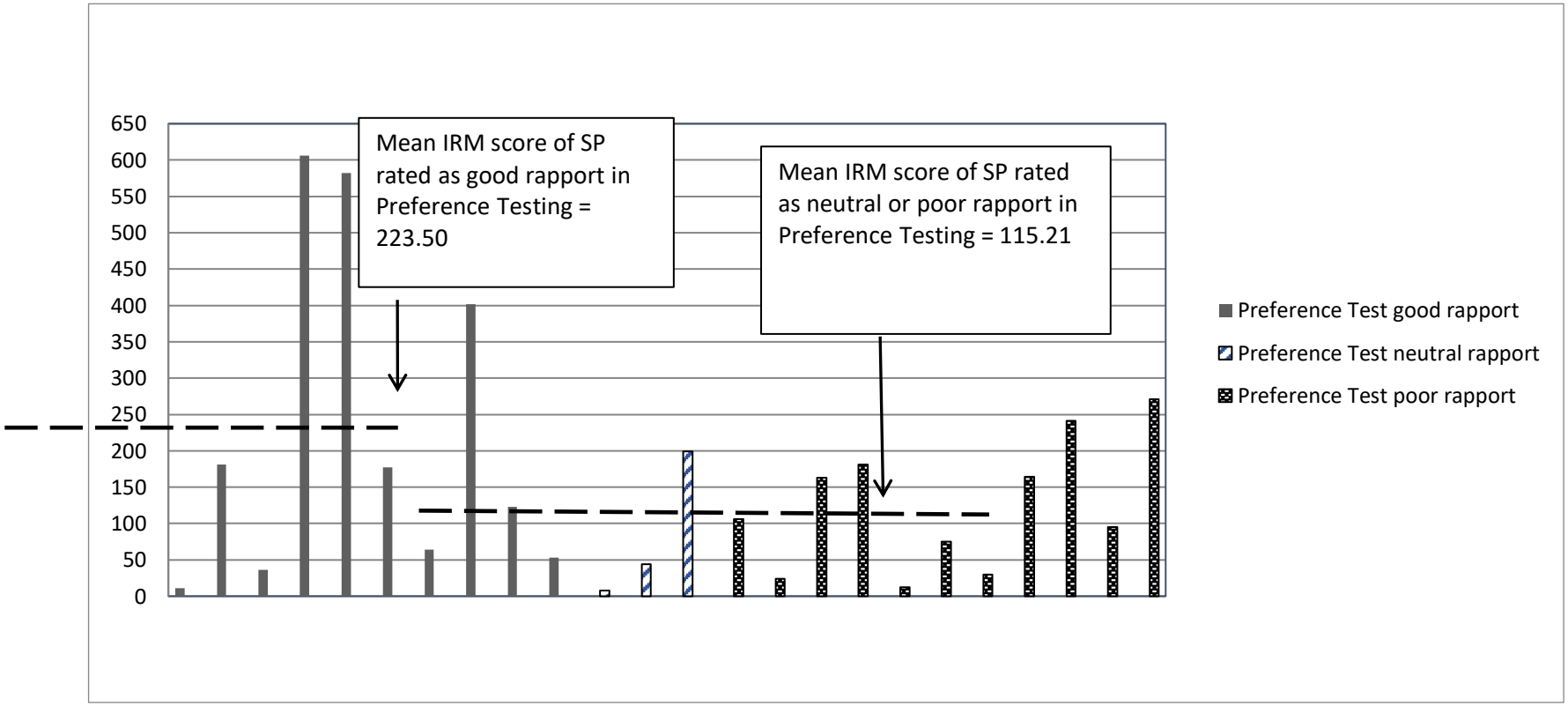

Figure 3: IRM scores of good vs neutral/poor rapport SP in preference testing

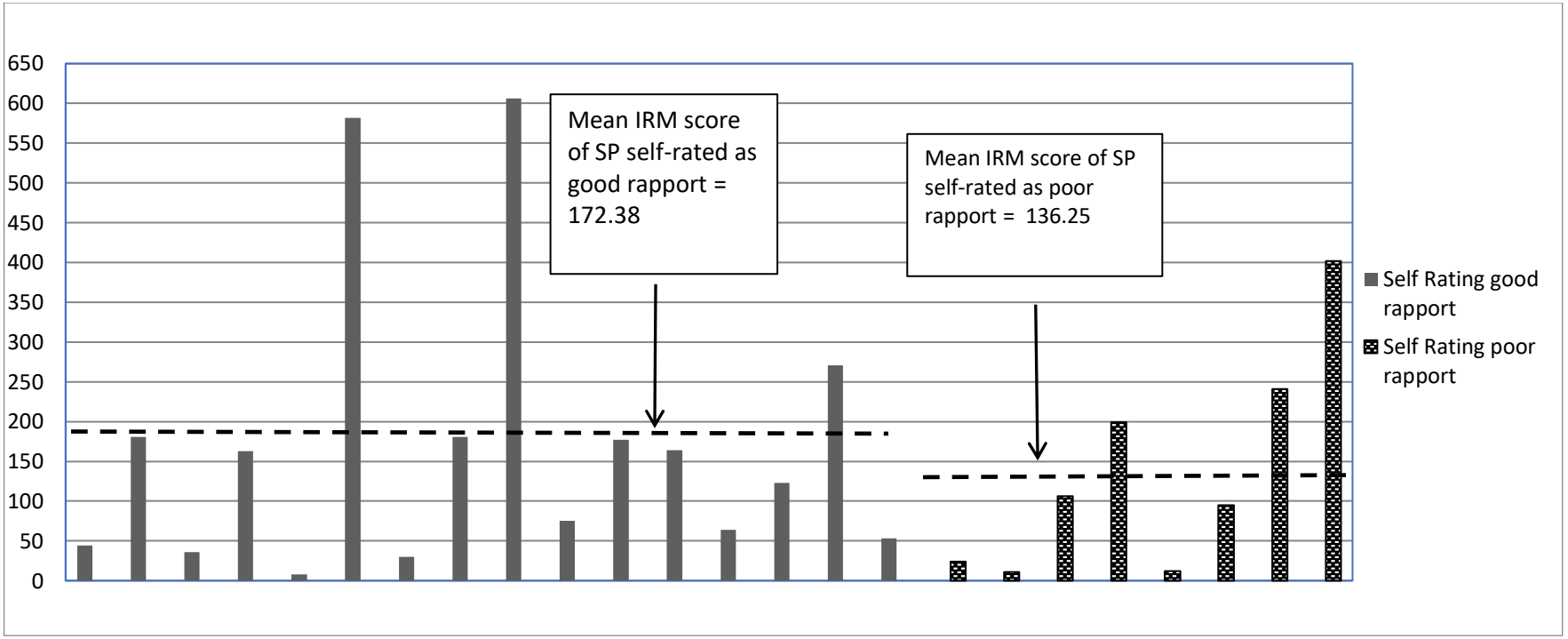

Figure 4: IRM scores of self-rated good vs poor rapport SP

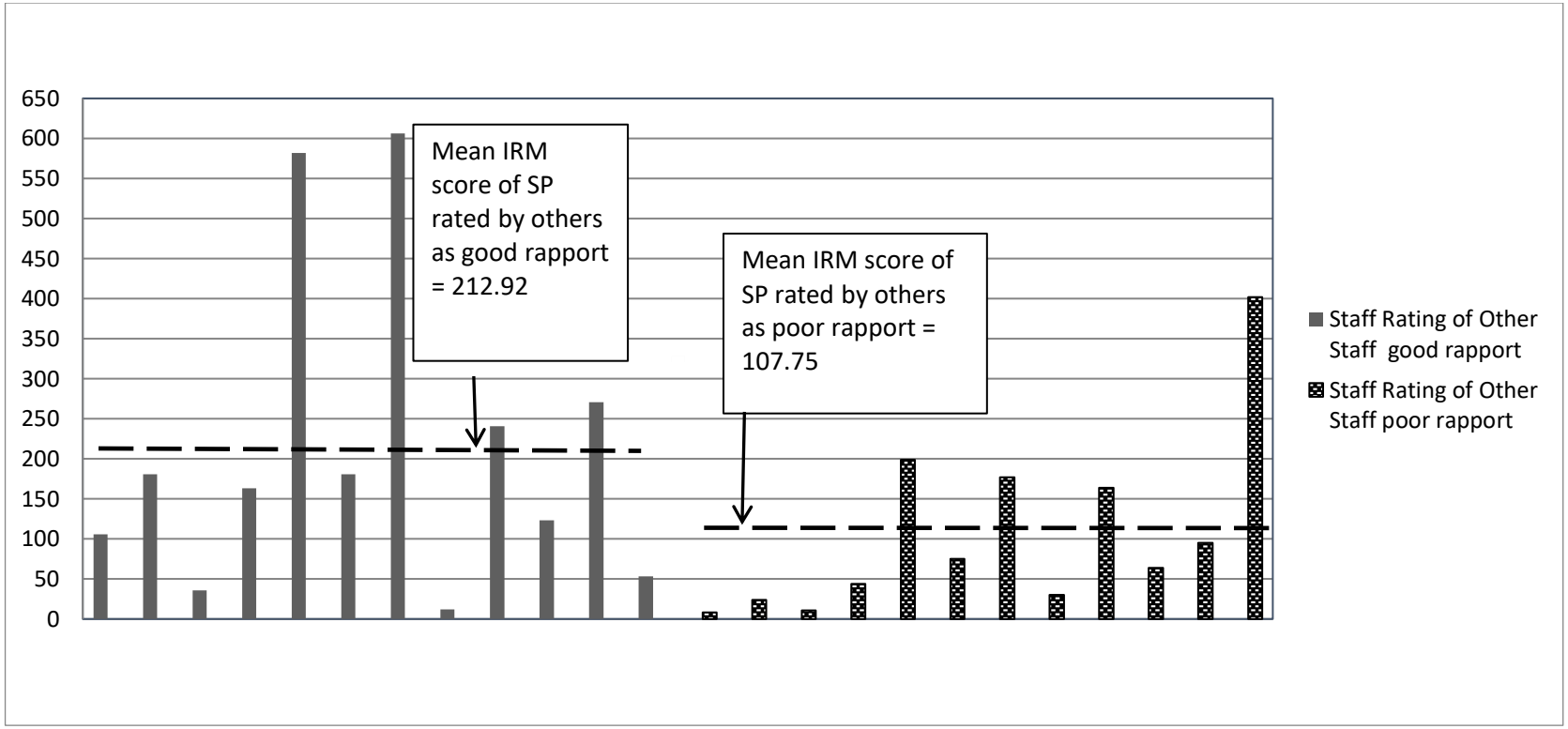

Figure 5: IRM scores of SP rated good vs poor rapport by other staff