The Role of Staff when Prompting and Reinforcing Social Connection Behaviours of Persons with Disabilities

by

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Abstract

Individuals with intellectual and developmental disabilities (IDDs) are at an increased risk to experiencing limited social network size, dependency on paid support staff and family members, as well as behavioural deficits and excesses that serve as barriers to social inclusion (Bigby & Knox, 2009). Research has identified staff behaviours that facilitate and maintain social inclusion in the lives of individuals with IDDs, but few studies have analyzed repeated observation of actual staff behaviours shortly after support was provided. The purpose of this research was to learn from staff what they do to support social interactions by analyzing repeated self-observations of staff behaviour when supporting clients towards social inclusion. This study analyzed anonymized service data where 136 staff indicated whether they prompted, reinforced, or provided other support during social interactions of 58 clients. Data was obtained from St.Amant, a community-based service provider, and was analyzed descriptively and qualitatively to determine the prevalence, frequency, and types of various staff and client behaviours. Staff reported providing three main types of prompts in 23% of records, six main types of support in 25% of records, and three main types of reinforcement in 9% of records. Staff described clients responding to promote social connection in 74% of records. This study furthered our knowledge of the role of staff when promoting social inclusion of individuals they support by analyzing repeated self-observations made by staff to determine relevant frequencies of staff behaviour, the specific kinds of supportive behaviours performed, as well as the types of relevant behaviours clients engage in to promote social connection.

Keywords: intellectual and developmental disabilities, staff behaviour, social connections, social inclusion, thematic analysis

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Social isolation occurs when there is a deficiency in a person's social network as a result of a lack of meaningful social interaction and engagement. Persistent social isolation may have serious impacts including declines in mental health (Hawkley et al., 2005) and physical health (Masi et al., 2011). These impacts are even more prevalent in individuals diagnosed with intellectual and developmental disabilities (IDDs). In addition, the IDD population is at an increased risk of experiencing social isolation (Bigby & Knox, 2009). Networks are generally limited to paid support professionals or family members, meaning that the opportunity for voluntary meaningful connections is diminished (Reinders, 2002).

Barriers to social inclusion include deficits in social skills and awareness, as well as the accessibility of, and opportunities for, social interaction. From a behaviour analytic standpoint, it is helpful to consider social isolation as a product of behavioural deficits and excesses that contribute to a lack of social inclusion. Interventions that include a staff support component have been shown to be successful when client target behaviours are focused on initiating and maintaining social interactions (van Asselt-Goverts et al., 2014). Further, research has shown that it is beneficial to identify specific staff supportive behaviours when developing social inclusion programs (Bigby & Wiesel, 2015; Meys, Hermans & Maes, 2021; Overmars-Marx, Thomese & Meininger, 2017). While previous research has identified behaviours that can be characterized as supporting clients by helping them change their own behaviour, there has been no repeated observation of staff behaviours soon after they occurred. This study analyzed self-observations made by staff as they supported clients to be more social.

Social Inclusion

Social inclusion can be defined as the level of integration in socially supportive communities and relationships and may be measured by participation in social and economic structures (Forrester-Jones et al., 2006). A lack of social inclusion may result in feelings of loneliness, which can be defined as a disparity between one's ideal and actual social inclusion and relationships (Masi, et al., 2011). Therefore, if the quantity and quality of someone's social relationships doesn't meet their expectations, the person is more likely to experience feelings of loneliness. It is estimated that approximately 5–7% of middle-aged adults report feeling lonely, while 32% of adults aged 55 and older report feeling lonely (Masi, et al., 2011).

Not only is loneliness associated with declines in mental health including isolation, disconnectedness, and exclusion (Hawkley et al., 2005), but it is also associated with numerous effects on physical health (Masi et al., 2011). Such effects include elevated systolic blood pressure (Hawkley et al., 2010b), increased vascular resistance (Hawkley et al., 2003), increased hypothalamic pituitary adrenocortical (HPA) activity (Adam et al., 2006), number of white blood cells (Cole, 2008), negative impacts on quality of sleep (Hawkley et al., 2010a), and decreased immunity (Pressman et al., 2005). Conversely, social inclusion and the presence of meaningful social relationships have positive influences on mental and physical health. Examples include happiness (Chadsey & Beyer, 2001), engagement in leisure activities (Forrester-Jones, 2001), as well benefits to self-esteem and confidence (Srivastava, 2001).

Persons with Intellectual and Developmental Disabilities

Approximately 315,500 (or 0.84%) Canadians aged 15 or older are diagnosed with a developmental disability, (Government of Canada, 2020). IDD "refers to various life-long limitations in intellectual functioning and conceptual, social, and practical skills that emerge in

persons before the age of 18 years" (Sullivan et al., 2018, p. 254). IDD is a general term that includes intellectual disabilities, developmental disabilities, learning disabilities, and autism spectrum disorder.

In a study conducted by the Government of Canada (2020), it was determined that 74% of individuals with IDDs currently receive help in at least one daily activity, with most common activities being personal finances (61%), personal appointments and errands (61%), and meal preparation (53%) (Government of Canada, 2020). Further supports include behavioural interventions, self-care support, transportation, education, employment, and facilitation of social interactions and relationships (Mirenda, 2014). It is therefore quite likely that individuals living with a disability will heavily depend on supports provided by caregivers, direct support staff, and health care professionals.

IDDs and Social Inclusion

People with IDDs are at a greater risk of experiencing social isolation compared to individuals found in the general population (Petroutsou et al., 2018). In fact, research has shown that individuals living with a disability have an average of 3.1 people in their social networks (Verdonschot et al., 2009), compared to members of the typically functioning population who have an average of 125 people in their social networks (Hill & Dunbar, 2003). This means that individuals with IDDs who experience social isolation may not be getting their social and emotional needs met. For these individuals who are already increasingly vulnerable to mental health concerns, loneliness may serve to further exacerbate feelings of depression (Heiman, 2001) and suicidal ideation (Lunsky, 2004).

Social interactions and relationships for persons with IDDs are typically restricted to care professionals, peers with disabilities, and family members, as opposed to individuals who are in

their lives voluntarily. This means that notwithstanding having access to valuable support structures, individuals with IDD may experience decreased senses of belonging, inclusion, and membership (Amado et al., 2013). Therefore, the development of unpaid, meaningful connections outside the bounds of support professionals is required (Reinders, 2002).

Overmars-Marx, Thomese, and Meininger (2017) examined how social inclusion related to staff perceptions and expectations of their role in supporting individuals with mild to moderate Intellectual Disabilities (IDs). The researchers delivered group interviews to staff, and structured discussions to learn more about a) staff's perceived role in supporting social inclusion, b) staff's expectations of the role of institutions in supporting social inclusion, and their experience with the degree of support provided by such environments. Content analysis of interview transcripts indicated the prevalence of five major themes; 1) perceptions and experiences (both positive and negative) of the neighbourhood connections of group home residents, 2) perceptions of group home resident's abilities and needs as they pertain to social skills, 3) perceptions of the community and its members, 4) perceived role of staff when supporting social inclusion within the community, and 5) staff's perceived role of the service provider when supporting social inclusion within the community.

Overall, results indicated that staff's perceived ability to support their clients in social inclusion is directly impacted by encouragement, opportunities, and training to do so by their employer. Staff perceptions of group home residents, the community, as well as their own supportive abilities were directly associated with barriers to social inclusion in the community. Overmars-Marx, Thomese, and Meininger (2017) recommended that staff be supported by their employer to promote social inclusion for the people they provide care for, by creating a professional role identity around this task. It was recommended that support be provided on an

institutional level, meaning that these skills should be incorporated into role responsibilities and workplace culture. Professional skill development was also emphasized, and authors recommended that staff training be provided to foster the skills required to support residents in social interactions. With regards to learning more about specific staff target behaviours when promoting social inclusion, results were limited.

The Role of Staff in Promoting Social Connections

Staff have an important role in expanding the social networks of individuals with IDs. When asked to rate work-related tasks in a matter of priority, staff working in supported living environments rate tasks related to promoting social inclusion higher than staff in other program areas, such as day programs and group homes (McConkey & Collins, 2010). The authors investigated the contribution of support staff in promoting social inclusion in the lives of supported individuals diagnosed with IDs by asking 245 paid support staff to rate tasks, based on priority, related to facilitating social connections. While priorities differed by service setting, 16 tasks related to the fostering of social connections were identified, and related to promoting choice opportunities, exploring social opportunities, familiarity with opportunities and facilities, visitation, community involvement, work placements, increasing social skills and independence, identification of reinforcing activities, and communication. However, this study was limited by the fact that the specific staff behaviours involved in the tasks that facilitate social connections were not operationally defined.

In order to learn from staff what they do to expand and strengthen the social networks of clients with mild ID, van Asselt-Goverts et al. (2014) surveyed 27 paid support professionals who were employed at six organizations that supported young adults with IDs. Semi-structured group interviews were held across the organizations, where interviewees were asked about their

current efforts in promoting and increasing the social networks of the people they supported. The researchers created categories of common quotations by coding and analyzing the transcripts. 62 codes were created and applied to the quotations obtained during the semi-structured interviews. Codes were then aggregated into four general categories, which included 1) efforts to establish/strengthen social networks, 2) efforts to broaden/enlarge social networks, 3) factors that interfere with these efforts, and 4) factors that aid in these efforts. I discuss below the findings related to the first two categories.

Interview data from van Asselt-Goverts et al. (2014) indicated that in order to strengthen existing social networks, interventions should target maintaining regular communication, transparent discussions, and "mentioning positive things" (van Asselt-Goverts et al., 2014, p. 116). To expand social networks, interventions may be targeted at engagement within social activities, broadening social opportunities, and identifying potential social contacts. While this study provided an overview of strategies that serve to facilitate the maintenance and expansion of social networks, the authors called for systematic evaluations of staff interventions when targeting social inclusion and suggested that evaluations incorporate responsibilities at the organizational level.

van Asselt-Goverts et al. (2014) had several methodological limitations that should be addressed in subsequent research. First, the interval of time between the staff interviews and the behaviours on which they reported is unknown. It is plausible that staff were unable to provide accurate accounts of their supportive behaviours that relate to fostering social inclusion, given the lapse in time between engagement in the target behaviour and the interview. The second limitation relates to the analysis of interview quotations. Prevalent themes were derived from

how frequently supportive behaviours were mentioned, rather than how frequently supportive behaviours were engaged in by staff.

When analyzing the tasks involved in supporting social inclusion in lives of individuals with IDDs, it is important to consider the perspectives of all people who are involved in the individual's circle of care, including the person themselves. To learn more about the various stakeholder perspectives on the role of support staff when promoting social inclusion, Meys, Hermans and Maes (2021) delivered 51 semi-structured interviews to various groups including 14 individuals with IDs, 14 staff members, and 23 members of social networks. The interview for individuals with a disability was comprised of general questions pertaining to their social network, the role of their support staff in facilitating social inclusion using an ecogram, and calibrating satisfaction indicators such as aspirations, expectations, and fulfillment using the Maastricht Social Network Analysis for people with intellectual disabilities (MSNA-VB). The interview for staff and network members was comprised of the same items but were presented in the context of service provision and reciprocal connection, respectively. Inductive thematic analysis was employed to analyze interview results. Following this procedure, several rounds of coding were used to identify prevalent categories and themes.

Results yielded nine practices and four influencing factors that are relevant when staff promote social inclusion of individuals they support. The nine practices ranged from facilitating the maintenance of existing social connections, developing new social connections, navigating and facilitating opportunities for social interactions, building rapport with the supported individual, providing individualized supports, to protection. Further, the influencing factors were separated by stakeholder group, including the supportive individual, other staff members, network members, and the community at large. Factors relating to the supported individuals

included learning history, abilities, and characteristics. Factors relating to staff included expertise, trustworthiness, rapport, and motivation. Factors relating to network members included interest, relationship with other stakeholders, and needs. Finally, factors relating to the community at large included budgetary elements and policies (p. 154). However, roles of support staff were outlined descriptively, and relied on self-report. Actual frequencies of staff target behaviour were not reported due to methodological limitations of self-report interview data, as well as a lack of direct and repeated observation of target behaviour. Therefore, similar to van Asselt-Goverts et al. (2014), this study provided little detail about how staff directly promote social interactions of the people they support.

Bigby and Wiesel (2015) observed the behaviours of support staff when promoting the initiation of interactions between individuals with IDs and strangers. The study was designed to learn what staff behaviours made an encounter with a stranger successful versus unsuccessful. The main form of data collection was unstructured observations of 26 individuals with IDs accompanied by their support staff in the community. After the observations were conducted, interviews and focus groups with support staff and managers were delivered as a secondary form of data collection. Results from both methods of data collection were coded thematically, and the study summarized 207 records which were coded under "support". These records were further subdivided into three subthemes: "initiation of an encounter, facilitation of encounter, and prevention or obstruction of encounter" (p. 310). I discuss below the findings related to the first two of these subthemes.

Initiating encounters included social situations where support staff started a social interaction between a person with an ID and a stranger. Prompts included more obvious initiations such as introductions, as well as more subtle initiations such as gestures. Prompts may

be provided to signal strangers to interact with the person with an ID or vice versa, or to include the supported individual in an interaction was already underway. If the individual did not wish to engage in the interaction, such prompts were not always successful. However, staff supportive behaviour was still tracked even if it was simply an attempt.

Facilitating encounters ranged from direct active support to indirect passive support during ongoing interactions (i.e., interactions that had started prior to staff intervention). Passive support included monitoring interactions and providing reassurance to strangers who were hesitant to initiate interactions. Active support included intervening to serve as an interpreter or facilitator during interactions. In addition to active and passive supports, "educational interventions" (p. 312) were also included under facilitating encounters. These included staff attempts to modify the behaviours of individuals involved in encounters. Examples included reminding a community member to behave respectfully and shaping desirable behaviours including eye contact, attention, and physical proximity.

While this study remedied a methodological limitation of van Asselt-Goverts (2014) and Meys, Hermans and Maes (2021) by conducting observations of staff supportive behaviours, it did not provide an account of what the staff themselves did to increase the likelihood of encounters, or how frequently the staff engaged in these behaviours. In addition, the authors called for future efforts to contextualize the role of support staff within a broader range of contexts, including supported individuals in residential programs from countries outside Northern Ireland.

Self-Observation of Staff Behaviour

The actions that staff take to help individuals to improve their social networks are likely to occur in private settings and may occur at nearly any time of the day or week. These

circumstances make it challenging to observe the effects of staff interventions on their supportive behaviours. The staff themselves may therefore be best positioned to observe and record their own behaviour (Foster, 1999). Self-observation of target behaviour can offer a cost- and time-efficient method of data collection that requires few additional resources (Korotitsch & Nelson-Gray, 1999).

Self-observation has the additional benefit that it often improves the observed behaviour (Olson & Winchester, 2008). For example, self-observation has been shown to be an important, and sometimes sufficient, component of training to improve behaviour intervention treatment fidelity among support staff (Mouzakitis et al., 2015). In a study relevant to the present topic, self-observation was a useful, though not always sufficient, method for increasing the use of response prompts among staff providing communication training to persons with severe ID (van Vonderen et al., 2011).

Statement of the Problem

To design training interventions for staff, it would be useful to know what behaviours staff think are helpful for promoting social connections, and what they currently report doing in that regard. Previous research has identified various supportive staff behaviours but has primarily relied upon semi-structured interviews. To date, there has been no repeated observation of actual staff supportive behaviours shortly after they occurred. The purpose of this study is to analyze self-observations made by staff as they supported clients towards social inclusion.

The project also responds to a specific knowledge need articulated by St.Amant, a community-based service provider in Winnipeg, Manitoba. St.Amant has undertaken a Meaningful Connections project with the goal of increasing social inclusion for all the people it supports. The knowledge gained from the outcomes of this study may ultimately increase the

quality of life of individuals supported by St.Amant and will inform the goals and design of staff interventions to promote social connections. Research findings may also provide valuable information for similar endeavours that utilize staff self-observation for service delivery.

Method

Participants and Setting

Participants

Participants were approximately 136 adult support staff and 58 adult individuals with IDDs (the *Procedure* section below describes how counts of each participant group were obtained). Participants in both groups were either employed (staff) or supported (persons with IDD) by the Community Residential Program (CRP) run by St.Amant in Winnipeg, Manitoba (see *Setting*, below). Since the data was anonymized prior to receipt, I was unable to determine specific demographic information about the staff who recorded observations, nor information about the individuals who these staff supported. Some general information about the two groups follows.

CRP Support Workers deliver support services to individuals with IDDs in either personal or St.Amant-owned homes within the community. Support Workers facilitate daily living activities and assist with the overall care and needs of individuals supported by the program. Staff have a minimum of a grade 12 diploma or General Education Diploma (GED) and possess certification in cardiopulmonary resuscitation (CPR) and emergency first aid. Staff must pass an adequate criminal record, child abuse registry check, adult abuse registry check, and prior contact check. Staff must also possess a Manitoba driver's licence with an acceptable driver's abstract. CRP Support Workers work in various homes across Winnipeg, Manitoba. In 2021 the average age of staff was 39.3 years of age and ranged from 18 years of age to 77 years

of age. Approximately 379 staff identified as male and 538 staff identified as female. Average length of service was 4.89 years and ranged from less than a year to 35 years (P. Duff, personal communication, October 29, 2021).

In order to qualify for services under CRP, individuals must meet eligibility criteria under the province of Manitoba's Community Living disABILITY Services (Government of Manitoba, n.d.). To be eligible for services, individuals must be 18 years of age or older, and had to have been diagnosed with "significantly impaired intellectual functioning with impaired adaptive behaviour, existing prior to the age of 18" (Government of Manitoba, n.d.). Overall, in 2021, 103 individuals supported by CRP identified as male, and 65 individuals identified as female. The age of people supported ranged from 19 years of age to 87 years of age (P. Duff, personal communication, October 29, 2021).

Setting

St.Amant is a not-for-profit community organization that provides a range of services to individuals with IDDs living in Manitoba, Canada. Services include behavioural, community stabilization, dietetic, occupational therapy, physiotherapy, psychological, social work, speech language pathology, community living, education, and childcare services. In its most recent strategic plan (spanning from 2019–2024), St.Amant pledged to increase the meaningful connections for each individual supported by the organization. Meaningful connections were defined as unpaid relationships that extend beyond the scope of the individual's paid support staff, volunteer support network, and family members. St.Amant's goal is to increase each consenting individual's social network by two meaningful connections (St.Amant, 2019).

To achieve this target, St.Amant has developed a staff training program, with the goal of equipping staff with the knowledge and instruction they need in order to facilitate the individuals

they support in making meaningful social connections. St.Amant's Meaningful Connections training program started in 2019, by beginning to train staff on how to promote social inclusion in the lives of the individuals they support. St.Amant's Meaningful Connections training program is highlighted here as an important contextual factor in this study, but the program was not directly evaluated as a treatment variable in this study. Rather, I evaluated self-observation data collected by staff members as part of this strategic plan.

Self-observation data was requested from St.Amant's Community Residential Program. This program supports children and adults with IDDs with living and participating in the greater community, with the goal of immersing the individual in an independent and supportive living environment.

Observation Instrument and Dependent Variables

Since January 2021, St.Amant staff have been collecting data on what they do to support social connections in the lives of the people they support. Staff were instructed by their supervisors to use a Meaningful Connections Log (MCL; Appendix A), where they record information pertaining to social interactions including what the supported individual did during the interaction, whether the interaction was with a new or existing connection, and what the staff did before, during, and after the interaction. Staff were expected to complete their logging in the MCL before leaving their shift. Therefore, most records were created the same day as the events they described.

Additional instructions were provided to staff in the preamble to the MCL itself (see Appendix A). The word "prompt" was not used, but the instruction to staff for the "Before" field included, "Did you do anything before the person took their step, to encourage it or make it easier?" which is a lay-friendly definition of "prompt" in the behaviour analytic sense. Similarly,

the instruction to staff for the "After" field included, "Did you do anything after the person took their step, by way of acknowledgement or congratulations?" which is a lay-friendly definition of "reinforcer." For the "During" field, the instructions provided examples of behaviours the staff might perform if the person supported could not (e.g., looking up a phone number, or helping transport the person to a meeting).

The primary behaviours of interest for this study were those self-recorded by staff as occurring before, during, and after social connection behaviours performed by a person supported. I will refer to these as prompting, supporting, and reinforcing, respectively, as explained above. For each record, I also analyzed relevant client behaviours that may have promoted social connection. I analyzed the frequency and types of these target behaviours, as described under Data Analysis.

Procedure

St.Amant administrative staff entered and anonymized data from the MCL sheets and saved them to an Excel file on St.Amant's secure computer network. I requested access to the MCL database and the file was kept on a password protected St.Amant computer network at all times. Physical and electronic datasheets were not requested. The database included a total of 1368 records. Records with missing or incomplete dates (n = 16) were omitted from all analyses, bringing the sample to 1352 records. The earliest date for which data was collected was March 29, 2021, and the latest date was November 2, 2021, for a total of 218 days. Fields within the original database included 11 columns which captured the CRP home code; person supported code; staff code; date of the record if the staff member had taken St.Amant's Meaningful Connections training (captured as "yes/no"; this column was not relevant for the purposes of this project); client behaviour (labeled "What the Person Did"); whether the social interaction

involved a new connection (captured as “yes/no”); what staff did before, during, and after the connection step (presented as three separate columns, but collapsed under a header column labeled “What the Staff Did”); and “notes”.

Anonymization

The original database, developed by St.Amant CRP administrative staff, contained the initials of clients and staff members, as well as the names of specific CRP homes. Not all records included this information: client, staff, and home information were included in 94%, 48%, and 42% of records, respectively. For those records where these details were included, a St.Amant staff member who was not a member of the research team anonymized the data before I accessed it. To remove CRP home information, a complete list of the homes was written in random order and each home was assigned a sequential number (e.g., CRP001). All instances of home names were replaced with the assigned number.

To anonymize the personal information (i.e., initials and names) of St.Amant clients and CRP staff, each letter of the English alphabet was assigned a random number from 1 to 26. All instances of names and initials were then replaced with a 4-digit code, consisting of 2-digit number for the first initial and a 2-digit number for the last initial. For example, if J were assigned 09 and M were assigned 21, any client or staff with the initials JM would be given the code S0921 (or PS0921, with PS standing for *person supported*, synonymously used with *client* for the purpose of this write-up).

Record Inclusion/Exclusion

As mentioned, the raw database contained 1368 records. Figure 1 summarizes a series of record exclusions to arrive at a final dataset for analysis. I first excluded records that had missing or incomplete dates (n = 16). I then had to address two problems in analyzing the database: some

home, staff, and/or client codes were missing, and staff and client codes were not uniquely identifying. To begin addressing the first problem, I removed records with missing client codes from the dataset (n = 73). To increase the number of included records, I devised a process to infer missing home codes. CRP staff confirmed that during the period of data collection there was not more than one client in any given home with the same initials (A. Campbell, personal communication, November 29, 2021). Therefore, all records with the same client-home code pair (e.g., CRP001-PS0921) must refer to the same individual.

For records where the client code was present, but the home code was not (n = 740), it was possible to infer the home code based on content similarity (i.e., content and style of record, date of record, and staff code captured within and across records) to records where both client and home code were included (n = 539). At this point, I filtered the database on a per-client basis, to display sets of records that had a client code, but where the home code was missing from one or more records (n = 856). Based upon the similarity (or dissimilarity) of the content within the set of records, I proceeded to infer home codes by assigning the record to an existing home code (if the content was similar to record(s) with existing home code(s)), or by creating a new home code (if the content was dissimilar to the record(s) with existing home code(s), or did not have an existing home code).

Judgements made during this task were compared to judgements made by an additional observer. Judgements were compared for all records that were subject to the home code inference task (i.e., in sets of records that had a client code, but where the home code was missing for one or more records; n = 856). The instructions used for this task can be found in Appendix B. Original agreement for the data inclusion task was 88% and included 104 disagreements. Following a meeting where the research assistant (RA) and I discussed our

disagreements, we reached consensus agreement for an additional 78 records, bringing agreement to 97%. The remaining 26 records for which a consensus was not reached were excluded from the remaining analyses. Any remaining records with a client code but no home code (n = 21) were also excluded from the analysis. The total number of attributable records (i.e., a record that could be attributed to an individual client) was brought to N = 1232.

Finally, to address the problem of staff and client codes being non-uniquely identifying, I decided to analyze only records that had all three pieces of information (i.e., a home code, a client code, and a staff code). While this decision decreased the dataset, it provided the highest possible level of confidence that records were attributable to a particular client or staff. Following this process, I determined that for the 622 records, there were 136 unique staff and 58 unique clients represented in the data. See Figure 1 for a detailed overview of this process.

Research Assistant

The RA for this study was recruited through the St.Amant Research Center and had obtained their honour's degree in psychology from the University of Manitoba. The RA had previously completed undergraduate course work in behaviour modification and was familiar with the behaviour analytic terminology used throughout the course of the study. For each of the interobserver agreement (IOA) tasks, I met with the RA via Zoom (https://zoom.us/) to deliver training materials, specific instructions, and modeling for how to complete the task. Each Zoom meeting lasted between 15 and 60 minutes.

Data Analysis

Research Questions

I descriptively analyzed the MCL database contents to answer seven research questions based on staff self-report.

1) How frequently did staff engage in prompting, supporting, and reinforcing behaviours? Although the data was anonymized, I was able to associate records of staff behaviour with non-identifying codes for unique staff. To compute frequencies, I identified each staff's first and last record in the dataset and determine their interval of data collection. I then counted all instances of each behaviour type and expressed the result as instances per day. I descriptively analyzed measures of central tendency and variability for each behaviour category across staff.
2) How frequently did clients respond to promote social connection? As for staff, I was able to associate records with non-identifying codes for unique clients. To compute frequencies, I identified the interval of data collection in which a given client was included (see Question 1), counted all instances of "Step Taken" (See Appendix A) attributed to that client, and expressed the result as frequency. I descriptively analyzed measures of central tendency and variability across clients.
3) What proportion of client responses were prompted, supported, and/or reinforced? I calculated proportions for each client using the results of Question 2 as denominator. I descriptively analyzed measures of central tendency and variability for each proportion value across clients.
4) What types of prompts did staff provide?
5) What types of supporting behaviours did staff perform?
6) What types of reinforcement did staff provide?
7) What types of client behaviours did staff identify that they prompted and/or supported and/or reinforced?

Qualitative Analysis. For questions 4 through 7 I analyzed the content of records using NVivo (Release 1.6.1), a qualitative analysis computer software package, to determine prevalent themes in the information solicited from staff. Thematic analysis, a qualitative analysis method, was chosen for this study. Thematic analysis is a research method used to classify, analyze, and describe prevalent themes within a dataset, where a theme is defined as a valuable piece of information in the dataset that is relevant to the research question (Braun & Clarke, 2006). I took two different approaches to the thematic analysis, depending on the research question, as per the recommendations of Braun and Clarke (2006).

For research questions 4 through 6 (the types of prompts, support, and reinforcement that staff provided), I took a *theoretical/deductive* (or top down) approach, which involved coding according to the record's relevance to the research question. To do so, I extracted information obtained through question 1 and imported the data into NVivo (Release 1.6.1). This analysis was executed three times, for each type of staff behaviours (i.e., prompt, support, and reinforcement), with a separate analysis completed for each type of behaviour. For question 4, I coded according to the presence of prompting behaviour, defined as anything the staff did *before* the person took their connection step, to encourage it or make it easier. For question 5, I coded according to the presence of supportive behaviour, defined as behaviours that the staff might perform if the person supported could not, that help the connection step to occur. For question 6, I coded according to the presence of reinforcement, defined as anything the staff did *after* the person made their connection step, to encourage the future occurrence of the step that was just performed.

For question 7 (the types of client social connection behaviours that staff identified), I took an *inductive* (or bottom up) approach, which involves "a process of coding the data without

trying to fit it into a pre-existing coding frame, or the researcher's analytic preconceptions" (Braun & Clarke, 2006, p. 12). I took this approach because, unlike questions 4–7 which looked only at specific types of staff behaviour, I was not coding according to a predetermined coding criterion (i.e., coding according to the presence of staff prompting, supportive, and/or reinforcing behaviour). Rather, all types of client behaviour that promoted social connection were analyzed.

To conduct the thematic analysis, I followed the outline provided by Braun and Clarke (2006), which is summarized below. This outline includes six phases of qualitative analysis, and I will summarize the relevance of each phase to my analysis.

Phase 1: Familiarization with the Data. The first step involved becoming familiar with the dataset and becoming an expert in its contents. This can be done through reading the contents of the dataset multiple times while searching for prevalent themes and patterns. Braun and Clarke (2006) recommend that this process is completed at least once, though this process was completed many more times throughout the course of this study. Each step of the study leading up to these analyses (i.e., record inclusion/exclusion, analysis process for research questions 1–3) required that I read through the dataset multiple times per step. I estimate that by the time I reached the thematic analysis phase of the study, I had read through the dataset 20 times (averaging five read-throughs per step).

Phase 2: Creation of Initial Codes. This step involved developing an initial broad set of codes according to relevant themes in the data. This process depended on the approach outlined above, and followed recommendations set forth by Braun and Clarke (2006). For the theory driven theoretical approach that was relevant to the types of staff behaviour, I analyzed the data according to the specific type of staff behaviour of interest. For the data driven inductive approach that was relevant to client behaviour, relevant themes depended on the data itself. For

both approaches, I carefully read through each record, and created relevant code names. While on each record, I tagged relevant selections of text and coded them under the relevant code names. As recommended by Braun and Clarke (2006), I was as specific as possible with the initial phase of coding, knowing that I could likely collapse codes later. This enabled me to capture as much information as possible, in the event that I decided that a theme (or set of themes) was of interest in later steps. I also coded selections of data inclusively, meaning that I included surrounding data in the coding process (e.g., words or a sentence before and after the relevant data). This enabled me to maintain the context of the record and assisted in later phases of the coding process. Finally, I refrained from restricting data selections to a single code and rather assigned selections to as many code names that were relevant. This meant that some data selections were coded only once, and some were coded more than once.

Phase 3: Theme Searching. This phase involved "sorting the different codes into potential themes and collating all the relevant coded data extracts within the identified themes" (Braun & Clarke, 2006, p. 19). The goal of this phase is to consider how groupings of initials codes may fit together under overall themes. To do so, I created broader themes that encompassed prevalent patterns and clicked-and-dragged codes underneath them.

Phase 4: Theme Review. Following the recommendations of Braun and Clarke (2006), this phase involved two levels. Level one involved revisiting each of the extracts coded in phase 2 and confirming that they fit within the assigned theme(s). Once I determined that the data extracts were reflected under the correct themes, I began level two. This involved determining if the themes reflected the nature of the raw dataset. Therefore, phase 4 involved the process of re-coding if a data selection did not sufficiently fit under a theme, as well as determining if any data records were missed throughout the coding process. Braun and Clarke (2006) refer to this phase

of coding as an "organic process" (p. 21), as it involved refining the thematic coding framework until I was satisfied with the level of specificity of the thematic framework.

Phase 5: Naming and Defining Themes. Braun and Clarke (2006) recommend using this phase to ". . . define and refine . . . [by] identifying the 'essence' of what each theme is about (as well as the themes overall), and determining what aspect of the data each theme captures" (p. 22). During this phase I reviewed each theme to ensure that it captured what it was intended to capture. I also used this phase to refine the naming of themes if I found that their names did not capture the essence of its contents. Finally, I used this phase to determine if themes had any relevant sub-themes, which helped capture the hierarchical nature of the thematic coding process.

Phase 6: Writing the Results. For this phase, Braun and Clarke (2006) recommend that the write-up provide a detailed overview of the information captured within and across themes and include data extracts to facilitate the reader's understanding of the content. This phase is explained in further detail in the results section, below.

Results

Descriptive Analysis

Research Question 1: Prevalence of Staff Prompting, Support, and Reinforcement

Across all records (N = 622), a total of 142 (23%) records contained one or more prompts, 155 (25%) records contained one or more supportive behaviours, and 59 (9%) records contained one or more instances of reinforcement. Across all staff, the mean percentage of records containing prompts, supportive behaviours, and reinforcement were 29% (SD = 40%), 36% (SD = 43%), and 15% (SD = 31%), respectively. See Table 1 for individual data on staff behaviour.

Mean number of records per day was 0.75 (*SD* = 0.59). Out of the 136 staff, 43% (*n* = 58) had a single record during the data assessment period (see Figure 2), thus positively skewing the calculation of the rate of records per day. To adjust for this phenomenon, I calculated mean record rates using only those staff who contributed two or more records. Among these staff (*n* = 78) mean number of records per day was 0.56 (*SD* = 0.72), and mean percentage of records containing prompts, supportive behaviours, and reinforcement were 30% (*SD* =36%), 36% (*SD* = 39%), and 14% (*SD* = 25%), respectively.

I also calculated mean record rates using only the top 25% of staff (*n* = 34) who had the greatest number of days for which data was collected. For this group of staff, the minimum number of days with data was 4, and the maximum number of days with data was 31. For the top 25% of staff, the mean number of records per day was 0.36 (*SD* = 0.35). Mean percentage of records containing prompts, support, and reinforcement were 25% (*SD* = 29%), 30% (*SD* = 37%), and 13% (*SD* = 23%), respectively.

IOA. A random 20% of records (*n* = 126) were subject to IOA. For this task, the research assistant was instructed to make judgements on the presence or absence of prompts, supportive behaviour, and reinforcement for the sample of records. Percentage of agreement was 90%, 80%, and 92% for the presence of prompts, supportive behaviour, and reinforcement, respectively. Instructions used for this task can be found in Appendix C.

Research Question 2: Prevalence of Client Social Connection Behaviours

In 462 (74%) of the 622 records, staff described clients (*n* = 58) responding to promote social connection. Across all clients, the mean number of records with at least one client behaviour reported was 7.97 (*SD* = 14.76). See Table 2 for individual data on client behaviour.

Across all behaviours reported during the data assessment period (N = 462), a total of 41 (M = 0.71, SD = 1.14) connections occurred with a friend or acquaintance, 209 (M = 3.60, SD = 8.47) occurred with a family member, 36 (M = 0.62, SD = 1.60) occurred with a paid staff member, and 5 (M = 0.09, SD = 0.28) occurred with a roommate (see Figure 3). I was unable to determine who the connection step was made with in 171 records (M = 2.94, SD = 7.82), as the information was lost during the anonymization phase. Mean percentage across clients (n = 58) of records specifying interactions with friends/acquaintances, family members, paid staff, and roommates were 12% (SD = 21%), 50% (SD = 41%), 7% (SD = 15%), 2% (SD = 8%), respectively. A total of 25 (M = 0.43, SD = 0.92) new connections were made across all clients during the data analysis period. See Table 3 for detailed information on proportions of social connections.

IOA. A random 15% of records were subject to IOA. The task included RA judgements on whether a record contained a client behaviour that promoted social inclusion, and who the connection step was made with. I also collected IOA on where the client behaviour was located in the record, as this information informs the robustness of decisions regarding the occurrence vs. non-occurrence of client social connection behaviour in the record itself. Instructions used for this task can be found in Appendix D. Percentage agreement for the occurrence and non-occurrence of client social connection behaviours was 86%. Percentage agreement on who the connection was with was 95%, and the percentage agreement for where in the record the client behaviour was located was 82%.

Research Question 3: Proportion of Prompted, Supported, and Reinforced Client Behaviours

Table 4 reports the proportions of records with client responses (n = 462) that were prompted, supported, and reinforced. Total proportions of client behaviours that were prompted,

supported, and reinforced were 142 (31%), 156 (34%), and 59 (13%), respectively. Mean percentage of client behaviours that were reported by staff to be prompted, supported, and reinforced were 31% (*SD* = 46%), 34% (*SD* = 23%), and 13% (*SD* = 12%), respectively. IOA was not collected for this research question, as the analysis did not require me to make judgements about the data itself.

Qualitative Analysis

Research Question 4: Types of Staff Prompting Behaviour

I found three main themes in the records that described one or more staff prompting behaviours (*n* = 142): prompting virtual interactions (*n* = 66), prompting in-person interactions (*n* = 61), and interaction planning (*n* = 32). A detailed overview of the thematic analysis of staff prompting behaviour can be found in Figure 4.

Prompting Virtual Interactions. Virtual interactions were defined as prompted interactions that did not involve face-to-face contact. Captured broadly, this included prompting calls and text messages. More specifically, staff prompted virtual interactions by suggesting that the client make a phone call (e.g., “asked if he wanted to call grandma”, “reminded to call parents”, and “staff reminded [client] to call him to make arrangements for their upcoming zoo date”), notifying the client that they received a phone call (e.g., “let [client] know she had a phone call”, “staff reminded [client] that he missed call from sister”, and “. . . passed on message/suggested [client] calls back”), or suggesting a video call (e.g., “asked [client] if he wanted to facetime dad”, “reminded [client] to facetime parents”, and “asked [client] if she was interested in Facetime with [connection]. . .”). Staff reported to assist clients with sending messages to connections as well (e.g., “staff asked [client] to reply to mom. . .”, and “said he hasn’t texted mom in awhile”).

Prompting In-Person Interactions. In-person interactions were defined as prompted interactions that involved face-to-face contact. This included prompting the client to go on outings, such as walks or appointments (e.g., "prompted to walk with roommate"), notifying the client of a visitor (e.g., "[client] was notified that [connection] was visiting", "reminded [client] of [connection] coming", and "prior to grandma's visitation, staff notified [client] and [client appeared excited"), suggesting that the client visit a connection (e.g., "staff asked [client] if she will go visit [connection]"), and prompting the client to engage in conversation (e.g., "encouraged [client] to great dad (welcome and goodbye)", and "prompted to say hello").

Interaction Planning. Staff reported prompting clients to plan interactions, which included the interaction specified in the record (e.g., "staff helped [client] set up the virtual dance party with friends", and "helped [client] set the table and prepare the iPad"), future interactions (e.g., "staff encouraged [client] to make plans with [connection]", and "encouraged [client] to surprise her mom on her birthday and made plans"), as well as presenting an opportunity to a client and soliciting their interest (e.g., "asked him if he wants to come with me to buy some supplies", and "staff presented several opportunities").

IOA. A random 20% of records were subject to IOA. The task involved the RA tagging the record with one or more main themes (i.e., prompting virtual interactions, prompting in-person interactions, and/or interaction planning) that I identified through the thematic analysis. Instructions used for this task can be found in Appendix E. Percentage agreement for the tagging of types of staff prompting behaviour was 87%.

Research Question 5: Types of Staff Supportive Behaviour

For records that contained one or more supportive behaviours (n = 155), staff reported to engage in various supportive behaviours, ranging from helping clients use communicative

devices (*n* = 117), facilitating conversations (*n* = 31), transporting clients to and from social connection opportunities (*n* = 26), helping prepare for interactions (*n* = 9), assisting ambulation (*n* = 6), and attending interactions with the person they were supporting (*n* = 4). A detailed overview of the thematic analysis of staff supportive behaviour can be found in Figure 5.

Support with Communication Equipment. Most of the staff supportive behaviour involved supporting clients with using communication equipment and software. This included dialling phone calls (e.g., "staff dialed phone", "helped her dial the phone", and "dialed the phone and stayed with him"), handing clients the phone (e.g., "staff gave [client] the phone to call", "staff gave the phone to [client] when asked", and "staff gave phone to [client], asked if she had the phone number), holding the device for the client if they were unable (e.g., "held iPad for him", and "held phone for [client] while mom spoke with him and asked how was his day"), answering calls (e.g., "staff answered ([client] occupied)", and "staff . . . answered the phone"), setting up laptops or tablets and logging into video-conferencing software (e.g., "set up [client's] iPad for the program", "staff assisted [client] to set up the laptop", and ""set up GoToMeeting on the computer"), sending messages (e.g., "asked [client] that he needs to reply to mom [staff] helped [client] to type his goodnight", "helped take + send picture to mom", and "asked [client] if I could send her picture to mom"), and putting devices away after an interaction (e.g., "put the phone away", "packed the iPad and charger", and "put back the phone").

Preparing for Interactions. While preparing for interactions, staff reported helping clients get ready for the interaction (e.g., "staff was assisting removing his plain shirt so he could see mom", and "helped pick out gifts and get ready and drive her down to parents") and provided support with completing daily schedules (e.g., "supported [client] to complete DAS [Daily Activity Schedule]").

Facilitating Conversation. Staff reported facilitating conversation during interactions, including at the start of an interaction (e.g., "helped [client] start a welcome chat with dad"), during an interaction (e.g., "helped make conversation", "interpreted [client's] language for gentlemen so they could understand", and "assisted in conversation, encouraged [client] to participate"), and at the end of an interaction (e.g., "helped say goodbye and plan new date").

Attending Interactions with Clients and Assisting with Ambulation. Staff also indicated that they attended social interactions alongside the person they were supporting (e.g., "stayed by his side" and "stayed to monitor"), and assisted with ambulation (e.g., "helped walk around zoo", "staff assisted [client] for a walk with [connection]", and "help move around, enjoyed the music").

Transportation. Another prevalent theme that emerged was staff reporting that they transported people they supported to and from social interactions, including to family member's homes (e.g., "staff dropped off [client] at mom's apartment"), outings (e.g., "drove him to Costco" and "drove [client] to bank"), and events (e.g., "helped get ready and drove her down to the venue").

IOA. A random 20% of records were subject to IOA. The task involved the RA tagging the record with one or more main themes (i.e., support with communication equipment, facilitating conversation, transportation, preparing for interactions, assisting ambulation, and/or attending interaction with client) that I identified through the thematic analysis. Instructions used for this task can be found in Appendix E. Percentage agreement for the tagging of types of staff prompting behaviour was 73%.

Research Question 6: Types of Staff Reinforcement

For records where one or more instances of reinforcement was identified (n = 59), three main themes were identified through thematic analysis, including verbal reinforcement (n = 35), promoting future interactions (n = 18), and physical reinforcement (n = 5). An overview of the thematic analysis of reinforcement provided by staff can be found in Figure 6.

Verbal Reinforcement. Verbal reinforcement was classified as staff verbal behaviour that served to acknowledge or congratulate the client for making the connection step. Two types of verbal reinforcement were provided, including descriptive praise (i.e., rewarding statements that specified the client's desirable behaviour during their connection step), and non-descriptive praise (i.e., general statements of praise that did not specify the client's desirable behaviour during their connection step, but was likely rewarding nonetheless). Examples of descriptive praise included "staff acknowledged [client] for being nice to mom", "praised [client] for keeping a distance and speaking at normal volume, suggested further visits in the future", "praised for being polite" and "praised for singing along with [connection]". Examples of non-descriptive praise included "praised the phone call", "great job [client]", and "praised on wonderful visit".

Physical Reinforcement. Physical reinforcement was classified as staff motor behaviour that served to acknowledge or congratulate the client for making the connection step (e.g., "high five with [client]", and "good job said to [client] and high five").

Promoting Future Interactions. This type of reinforcement was classified as instances of staff presenting instructions or rules that relate to the client making the connection step again in the future. Staff reported doing so by promoting another in-person visit (e.g., "made plans to go for dinner next month", "agreed to hang out again soon", and "staff made plans to visit

[connection] with [client]"), planning another virtual visit (e.g., "reminded [client] to call her again", "staff suggested calling later", and 'staff said '[client] should call back soon"), and putting a future social interaction in a day planner (e.g., "staff helped in documenting a planned date on Friday", and "wrote plan in day planner – too early to post on [client's] calendar").

IOA. A random 20% of records were subject to IOA. The task involved the RA tagging the record with one or more main themes (i.e., verbal reinforcement, promoting future interactions, and/or physical reinforcement) that I identified through the thematic analysis. Instructions used for this task can be found in Appendix E. Percentage agreement for the tagging of types of staff prompting behaviour was 92%.

Research Question 7: Types of Client Social Connection Behaviours

For records that contained one or more client responses that served to promote social connection (n = 462), three main themes emerged through the thematic analysis, including virtual interactions (n = 303), in-person interactions (n = 173), and interaction planning (n = 37). A detailed overview of the thematic analysis of client social connection behaviours can be found in Figure 7.

Virtual Interactions. Virtual interactions were defined as social connections that did not involve face-to-face contact. Eight subthemes emerged through thematic analysis, including phone calls, video calls, asking a staff member to set-up a call, sending a text message, attending a class via videoconferencing, writing a letter, sending an email, and talking with a connection online.

Phone Calls. A total of 211 records were coded under this theme, and specified instances where clients had social interactions over the phone. Various subthemes emerged and were collapsed under this theme, including making a call (e.g., "[client] called his mum on the phone",

"self initiated own phone call . . .", and "[client] called pen pal. . ."), receiving a call (e.g., [client] answered the phone independently", "[client] answered call", and "[client] had a call from [connection]"), and returning calls (e.g., "[client] returned [connection's] call").

Video Calls. A total of 55 records were coded under this theme, and specified instances where clients had social interactions over video. Numerous subthemes emerged and were collapsed under this theme. Subthemes pertained to the mode of video calls and were Facetime (e.g., "client Facetimed mom [client] said good night", "Facetime call via [unspecified person's] phone", and "Facetimed sister"), Skype (e.g., "Skype with mom" and "attempted Skype with [connection]"), Zoom (e.g., "connected with Zoom meeting", "[client] had a Zoom meeting with his day program", and "Zoom with friends"), and videocalls via an unspecified application (e.g., "video call with sister").

Asking Staff to Set-up the Call. A total of 21 records were coded under this theme, and specified instances when clients requested support from staff to set-up a phone or video call. Numerous subthemes emerged and were collapsed under this theme including asking the staff to make the call for them (e.g., "asked staff to dial; called her mom", and "[client] told staff to call [connection]"), asking staff to set-up a video call (e.g., "asked to set up the Go To Meeting", and "asked to connect with Go To Meeting with old work friend"), asking the staff for the phone (e.g., "[client] asked staff for phone so she could call her aunt"), and asking staff to speak with a connection (e.g., "asked to speak to his sister").

Class via Videoconferencing. In addition to video-calls with connections, clients were also reported to have joined virtual classes in four records. These included paint lessons (e.g., [client] took interest in the painting program and left after a few minutes"), music lessons (e.g.,

"guitar lesson with [connection]"), and unspecified classes (e.g., ". . . going through the Zoom class with the instructor").

Talking Online and Sending Text Messages, Letters, and Emails. A combined total of 12 records, collapsed into four separate subthemes, discussed clients talking online with a connection (e.g., "talked online to [connection]"), as well as sending text messages (e.g., "texted mom to say 'hi'"), letters (e.g., "made [connection] a card to invite her to [location] beach"), and emails (e.g., "[client] and [connection] email back and forth").

In-Person Interactions. In-person interactions were defined as social interactions that involved face-to-face contact. Nine subthemes emerged through thematic analysis, including going for a walk with a connection, outings, having company, visiting a connection's home, initiating an interaction, talking to a neighbour, giving gifts or donations, and dancing with a connection.

Walk with Connection. Eighty-one records were coded under this theme and examples included "plans to walk with roommates and staff", "walk to McDonald's with staff & [connection]", and "went mall walking with [connection]".

Outings. 31 records were coded under this theme which were further coded under 10 subthemes that reflected the location of the outing. Outings included going to restaurants (e.g., "[client] went on lunch date with [connection] at Popeyes", and "went out for lunch with [connection]"), swimming (e.g., "made plans with housemates to go to the beach", and "swimming with mom"), the bank (e.g., "met new bank teller and visited and met several other staff there", and "bank w/ [connection]"), the carnival (e.g., "all-day outing with friend to Red River Ex, [client] and me made a new friend [connection]", and "day outing with her friends to Red River Ex fun fair"), the park (e.g., "went [to the park] with staff", and "walk in the park"),

the zoo (e.g., “Assiniboine Zoo and lunch with [connection]”, and “went to zoo with [connection]”), shopping (e.g., “lots of conversations with staff and checkout at Dollarama and Walmart”), spiritual gatherings (e.g., “attended the [location] as knowledge keeper”), appointments (e.g., “went to massage with [connection]”), and the cinema (e.g., “[client] went to cinema to watch “free guy” movie with staff”). Some records were coded under outings but did not specify a particular location of the outing. Examples of such unspecified meetups included “spent time with both parents”, and “[client] hung out with [connection]”.

Hosting Company. Clients were reported to have hosted company in 14 records, which included examples such as “had [connection] over (helped prepare dinner) for outside meal and visit”, “[client’s] friend came over for a visit”, and “visited with [connection] and roommate on patio”.

Visiting Connection’s Homes. Clients were also reported to have visited connections homes. 12 records were coded under this theme and included examples such as “went to [connection’s] for a visit”, “visited a friend”, and “sleepover at mom’s”.

Initiating Interaction. Nine records related to instances where clients initiated an interaction when connecting with someone face-to-face. Examples included “now calling out good morning/afternoon. How are they? What is their name?”, and “greeted people along the way”.

Talking to a Neighbour. Three records mentioned instances where clients interacted with their neighbours. Examples included “talked to neighbor” and “[client] heard neighbor outside and came out to talk”.

Giving Gifts and Donations. Two records reflected instances where clients gave a gift or donation to a connection (e.g., "helped deliver her gift and make conversation, [client] was smiling at parents").

Dancing with Connection. One record described an instance where a client danced with a connection, which stated "dance with [connection] and [connection]".

Interaction Planning. Interaction planning was defined as any client behaviour that facilitated the future occurrence of a connection. Seven subthemes emerged including making plans (e.g., "made plans with housemates to go to the beach", and "[client] made plans with staff to see [connection] on Wednesday"), confirming plans (e.g., "[client] confirmed plans for later", and "confirmed up plans for the zoo"), invitations (e.g., "called [connection] – invite for dinner Thursday", and "[client] asked staff to play board games"), connecting again in the future (e.g., "agreed to stay connected via email / letter / Zoom", and "agreed to hang again soon"), indicating interest in an interaction (e.g., "[client] wanted to go out"), and rescheduling plans (e.g., "[client] told mom they need to reschedule").

IOA. A random 20% of records were subject to IOA. The task involved the RA tagging the record with one or more main themes (i.e., in-person interactions, virtual interactions, and/or interaction planning) that I identified through the thematic analysis. Instructions used for this task can be found in Appendix E. Percentage agreement for the tagging of types of staff prompting behaviour was 80%.

Discussion

I analyzed repeated self-observations made by staff of their prompting, supportive, and reinforcing behaviours. Staff reported providing one or more prompts in 23% of records. Within these records, three main types of prompting behaviour were reported, including prompting

virtual interactions, prompting in-person interactions, and interaction planning. Staff reported providing one or more types of support in 25% of records. Within these records, six main types of supportive behaviour were reported, including support with communication equipment, facilitating conversations, transportation, preparing for interactions, assisting with ambulation, and attending interactions alongside clients. Finally, staff reported providing one or more instances of reinforcement in 9% of records. Within these records, three main types of reinforcement were reported, which included verbal reinforcement, physical reinforcement, and promoting future interactions.

Staff described clients' responding to promote social connection in 74% of records. Results indicated that the total proportions of client behaviours that were prompted, supported, and reinforced were 31%, 34%, and 13%, respectively. Three main types of client behaviour were reported, and pertained to virtual interactions, in-person interactions, and interaction planning.

This study extended previous research by analyzing repeated self-observations made by staff to determine relevant frequencies of staff behaviour, as well as to determine the specific kinds of supportive behaviours performed. Van Asselt Goverts et al. (2014) analyzed staff behaviour, however the period between the behaviour and the self-report process was unknown and relative frequencies of behaviours were not available. Bigby and Wiesel (2015) conducted thematic coding of various staff supportive behaviours but did not provide an account of what the staff themselves did to increase the likelihood of encounters, or how frequently the staff engaged in these behaviours. Similarly, Overmars-Marx et al. (2017) conducted a content analysis of interview transcripts structured around staff's perceived roles in and expectations when supporting social inclusion but did not identify specific staff target behaviours related to

promoting social inclusion. Meys et al. (2021) employed a similar process of coding semi-structured interviews to determine prevalent themes in stakeholder perspectives on the role of staff when promoting social inclusion. Results articulated specific practices that are relevant to staff target behaviour when promoting social inclusion, but actual frequencies of staff target behaviour were not reported and provided little detail about how staff systematically support people with IDDs be more social.

This research demonstrated that, when instructed to self-report on support provided to clients to promote social inclusion, staff indicate providing three main types of social interaction facilitation: prompting, support, and reinforcement. In addition, staff also reported on the occurrence of specific client behaviours that promoted social connection; a finding that was not addressed in previous literature.

Descriptive Analysis

When promoting social connection behaviours of clients, the most frequently reported staff behaviour were behaviours which were supportive in nature, followed by staff prompting behaviour. The least frequent of the reported staff behaviour types was reinforcement. When determining how frequently staff reported engaging in prompting, supportive, and reinforcing behaviours, it is important to note that staff were not provided with explicit instructions to classify their behaviours as such, but rather this information was extracted a posteriori. Further, it was found that the "before", "during", and "after" columns on the MCL did not always represent the *antecedent*, *behaviour*, and *consequence* sequence typically articulated in behaviour analytic frameworks, as both staff and client behaviours were captured, unpredictably, throughout the record. It is possible that the frequency of staff behaviour types was underrepresented in the

results of this study, and future endeavours should consider providing staff with more explicitly and carefully defined definitions a priori.

When considering the rate of staff prompting, supportive, and reinforcing behaviours, it was impossible to differentiate the true rate of staff behaviour types from the rate at which staff recorded engaging in behaviour simply to satisfy the task expectation of their job requirement. In other words, staff may have created records that did not reflect actual events, and relevant events may have occurred that staff did not record. For practical reasons, including restrictions imposed by the COVID-19 pandemic, this study did not involve in-person observations of relevant staff behaviour to verify the accuracy of the data collection process. I recommend that future studies include direct observation to increase confidence of the true rate of relevant staff behaviours.

As mentioned, reinforcement was the least frequently reported staff behaviour type in the dataset; approximately 9% of records contained one or more instances of reinforcement. While staff were not explicitly instructed to provide reinforcement, the goal of the Meaningful Connections program is to encourage clients to build more social connections. Staff should therefore be trained to use positive reinforcement to increase relevant social connection behaviours.

Approximately 45% of client social connections occurred with family members, 8% occurred with staff, and 1% occurred with roommates. This meant that over half of the reported social connections occurred with people who were related to the client, lived with the client, or were paid to support them. Approximately 9% of social connections were reported to occur with a friend or acquaintance. This finding supports the claims of Reinders (2002) who observed that "civic friendships" (p. 3), that is, social relationships that are established independent of members of the person's social network who obligated to be involved (such as paid support staff

and family members), tend to be lacking in the lives of individuals with IDDs. Of the 462 records that described client social connection behaviours, only 25 of them specified that the client made a new connection. Therefore, these results also support Amado et al. (2013) who reported that individuals with IDDs are more likely to experience lower levels of belonging, inclusion, and community membership. Given that a goal of St.Amant's Meaningful Connections training program is to increase the social network of the person supported by two unpaid, non-family connections, future endeavours should focus on promoting interactions with new, non-staff and non-family connections.

It is important to note that, due to the nature of the data and anonymization process, I was unable to determine who the social connection was made with for 37% of the records. As part of the anonymization process, all names and initials were removed from the dataset, and were replaced with "xxx". While this maintained confidentiality and protected the release of personal health information, it made it difficult to infer who the connection was made with. It is recommended that future endeavours instruct staff to indicate if the connection was made with a friend, family member, staff, or roommate, rather than using names and initials to do so.

Qualitative Analysis

Various themes emerged in the data through use of thematic analysis, depending on the dependent variable I was analyzing. Prompting virtual connections was the most frequent theme, which was appropriate given social gathering restrictions during the COVID-19 pandemic. This research took place during multiple periods of high COVID-19 case counts, which brought restrictions on social gatherings outside of the immediate household. An important finding of this research was that staff made efforts to maintain regular social connection for the people they supported during prolonged periods of social isolation.

The most prevalent theme of staff supportive behaviour was assistance using communication technology. While this is another relevant finding given the COVID-19 pandemic, it also informs an area of skill acquisition for people supported by social connection initiatives. Such initiatives should aim at fostering the independent use of communication technology, thus providing individuals with greater autonomy when staying connected with members of their social network. Similar to findings of Bigby and Wiesel (2015), another prevalent theme of staff supportive behaviour was attending social situations with the individual they were supporting in order to facilitate the connection, including interpreting communication styles and monitoring interactions.

As reported earlier, staff did not often report providing reinforcement following client connection responses, and when it occurred it was often (over one third of records with reinforcement) non-descriptive praise. As mentioned earlier, this identifies a priority area for future staff training. Staff should be trained not only on the importance of providing reinforcement following target client behaviour, but on describing the behaviour in such a way that the client knows exactly what behaviour will lead to reinforcement in the future (thus increasing the likelihood that the target behaviour will happen again).

Client behaviours that supported social connections were reported in 74% of the analyzed records. Staff reported that clients engaged in three main types of social connection behaviours, including virtual interactions, in-person interactions, and interaction planning. To my knowledge this was the first study to report on the types of behaviours clients perform to promote social connection.

An interesting pattern emerged through the coding process, which was that the thematic analysis of prevalent staff prompting behaviour and client behaviours produced nearly identical

themes (i.e., virtual interactions, in-person interactions, and interaction planning). This may reflect the nature of the task, in that staff *prompted* the behaviour that the client ultimately engaged in to promote social connection. Similar to staff prompting behaviour, the most prevalent theme of reported client behaviour was virtual connections which again, is understandable given the restrictions on social gatherings during the COVID-19 pandemic.

Limitations

An important limitation of the present study was that the database did not identify clients or staff uniquely. While I employed several measures to remedy this limitation, such as applying a rigorous IOA process for all records (for which the final agreement score was 97%, and ultimately excluded the remaining records where a consensus was not reached), and including only records that contained all three pieces of attributable information (i.e., codes for CRP homes, clients, and staff), it is still possible that the number of staff (n = 136) and clients (n = 58) do not accurately reflect the true number of staff and clients represented in the database.

Another limitation of this study is that the findings rely on self-report data with no direct observation of target behaviours by an independent observer. While appropriate during the COVID-19 pandemic when in-person research activities were restricted, this methodology diminishes confidence that the reported behaviours are an accurate account of what took place.

Relating to the fact that there were no independent observations of staff and client target behaviours, is another limitation found in the framework used to articulate and analyze staff prompting, supportive, and reinforcing behaviours. As there were no observations of staff target behaviour, I could only analyze these behaviour types using a circumstantial definition of the behaviours (i.e., based on when they occurred) and speculate on the relative effect on client behaviour. Therefore, I did not know the actual effect that the staff behaviour types had on client

behaviour, and thus could not analyze staff nor client behaviours in a truly behaviour analytic fashion (i.e., observing effects of the environment on target behaviour). For example, when analyzing staff verbal descriptive praise, I had to assume that the staff's behaviour was reinforcing in a functional sense, though I did not actually know whether the client found it be reinforcing.

Future Directions

In addition to the future directions already articulated, there are several areas for future endeavours that would expand the findings of this study. First, I recommend that staff training focus on providing staff with explicit instructions on how to effectively collect data on the MCL (or similar). Throughout the course of this study, several barriers to accurate data interpretation emerged due to ambiguities in the data collection process. I recommend that training be focused on ensuring that the different types of information (e.g., date, stakeholders, client behaviours, and staff behaviour types) be captured in the intended section of the datasheet. This includes instructing staff to provide information on all prompted areas of the datasheet, thus avoiding the tendency to leave sections of the database blank (e.g., client initials, staff initials, date, etc.).

Future research may also analyze the effect of staff behaviour types on client behaviour outcomes. For example, it would be helpful to determine whether staff "reinforcement" behaviours truly increased the likelihood of client target behaviours happening again in the future, or if staff "prompting" behaviours helped to ensure that a client target behaviour took place. Doing so would allow for an applied behaviour analytic approach to analyzing relevant staff and client target behaviours that relate to the promotion of social connections. Future research should also examine whether social connections serves as a positive reinforcer for the person supported.

Finally, a major contextual factor and limitation of this study was that it analyzed data collected during the COVID-19 pandemic, and particularly during several waves of high case-count numbers and restrictions preventing in-person social gatherings. While this undoubtedly influenced the frequency and nature of social interactions captured in this study, it was appropriate given the public safety measures in effect. Future research should consider analyzing direct and repeated observations of staff and client target behaviour outside of public health orders restricting social gatherings.

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Table 1

Proportions of Records with Staff Prompting, Supportive, and Reinforcing Behaviours

				Staff Behaviour		
Staff	Count of Records	Data Collection Interval (Days)	Records per Day	Percent Prompt Occurrence	Percent Support Occurrence	Percent Reinforcement Occurrence
S118	31	57	0.54	6%	0%	0%
S15	30	90	0.33	17%	13%	0%
S71	24	27	0.89	17%	13%	4%
S103	24	50	0.48	0%	0%	0%
S86	23	85	0.27	9%	0%	0%
S119	19	57	0.33	32%	5%	0%
S105	17	60	0.28	76%	0%	0%
S59	16	68	0.24	0%	6%	0%
S104	16	58	0.28	19%	13%	0%
S114	16	31	0.52	6%	100%	38%
S58	15	49	0.31	40%	13%	0%
S126	15	28	0.54	0%	0%	0%
S28	13	40	0.33	54%	46%	23%
S81	13	74	0.18	85%	0%	0%
S80	11	71	0.15	0%	0%	0%
S115	10	93	0.11	60%	90%	70%
S124	10	26	0.38	50%	40%	0%
S30	9	60	0.15	22%	100%	11%
S79	9	75	0.12	0%	0%	0%
S36	7	61	0.11	0%	71%	71%
S47	6	57	0.11	50%	83%	50%
S64	6	17	0.35	50%	17%	50%
S67	6	31	0.19	17%	17%	0%
S111	6	87	0.07	17%	83%	17%
S25	5	6	0.83	0%	0%	0%

S26	5	12	0.42	0%	40%	0%
S110	5	20	0.25	40%	20%	0%
S117	5	12	0.42	0%	0%	0%
S1	4	33	0.12	0%	25%	0%
S6	4	72	0.06	100%	100%	75%
S7	4	2	2.00	0%	0%	0%
S38	4	9	0.44	75%	25%	25%
S52	4	18	0.22	0%	100%	0%
S60	4	14	0.29	0%	0%	0%
S82	4	73	0.05	25%	25%	25%
S95	4	52	0.08	25%	75%	25%
S101	4	29	0.14	0%	100%	0%
S116	4	18	0.22	0%	50%	0%
S22	3	93	0.03	67%	67%	33%
S27	3	13	0.23	33%	33%	33%
S34	3	10	0.30	0%	33%	0%
S37	3	130	0.02	0%	0%	0%
S42	3	22	0.14	0%	100%	0%
S50	3	1	3.00	0%	0%	0%
S89	3	11	0.27	100%	0%	0%
S93	3	14	0.21	0%	0%	0%
S99	3	17	0.18	67%	67%	0%
S107	3	2	1.50	100%	0%	0%
S109	3	11	0.27	0%	33%	0%
S112	3	56	0.05	0%	0%	0%
S123	3	8	0.38	33%	67%	0%
S128	3	29	0.10	67%	100%	33%
S131	3	1	3.00	0%	0%	0%
S133	3	52	0.06	100%	67%	33%
S5	2	1	2.00	0%	0%	0%
S12	2	4	0.50	50%	0%	0%
S13	2	21	0.10	100%	100%	0%
S14	2	22	0.09	50%	100%	0%

S17	2	6	0.33	0%	100%	50%
S23	2	13	0.15	100%	50%	50%
S31	2	1	2.00	0%	0%	100%
S40	2	38	0.05	100%	0%	0%
S54	2	3	0.67	0%	50%	0%
S55	2	18	0.11	0%	0%	0%
S66	2	1	2.00	50%	100%	50%
S69	2	2	1.00	100%	0%	0%
S74	2	25	0.08	0%	100%	0%
S76	2	22	0.09	0%	0%	0%
S78	2	15	0.13	0%	50%	50%
S84	2	1	2.00	100%	100%	0%
S90	2	4	0.50	0%	0%	0%
S94	2	1	2.00	0%	50%	100%
S97	2	2	1.00	0%	0%	0%
S102	2	1	2.00	50%	100%	50%
S108	2	19	0.11	100%	50%	0%
S113	2	21	0.10	0%	0%	0%
S122	2	1	2.00	50%	50%	0%
S134	2	1	2.00	0%	0%	0%
S2	1	1	1.00	0%	0%	0%
S3	1	1	1.00	0%	0%	0%
S4	1	1	1.00	0%	0%	0%
S8	1	1	1.00	0%	0%	0%
S9	1	1	1.00	0%	0%	0%
S10	1	1	1.00	0%	0%	0%
S11	1	1	1.00	0%	0%	0%
S16	1	1	1.00	100%	0%	100%
S18	1	1	1.00	0%	0%	0%
S19	1	1	1.00	0%	100%	100%
S20	1	1	1.00	0%	100%	0%
S21	1	1	1.00	0%	100%	0%
S24	1	1	1.00	0%	100%	0%

S29	1	1	1.00	0%	100%	0%
S32	1	1	1.00	0%	100%	0%
S33	1	1	1.00	0%	0%	0%
S35	1	1	1.00	100%	0%	100%
S39	1	1	1.00	100%	100%	100%
S41	1	1	1.00	0%	0%	0%
S43	1	1	1.00	0%	0%	100%
S44	1	1	1.00	0%	100%	100%
S45	1	1	1.00	100%	100%	0%
S46	1	1	1.00	0%	0%	0%
S48	1	1	1.00	0%	0%	0%
S49	1	1	1.00	0%	0%	0%
S51	1	1	1.00	0%	100%	0%
S53	1	1	1.00	0%	100%	0%
S56	1	1	1.00	0%	100%	100%
S57	1	1	1.00	100%	100%	100%
S61	1	1	1.00	0%	0%	0%
S62	1	1	1.00	0%	0%	0%
S63	1	1	1.00	0%	0%	0%
S65	1	1	1.00	0%	100%	0%
S68	1	1	1.00	0%	100%	100%
S70	1	1	1.00	100%	100%	0%
S72	1	1	1.00	100%	0%	0%
S73	1	1	1.00	100%	0%	0%
S75	1	1	1.00	0%	100%	0%
S77	1	1	1.00	100%	0%	0%
S83	1	1	1.00	0%	0%	0%
S85	1	1	1.00	0%	0%	0%
S87	1	1	1.00	0%	0%	0%
S88	1	1	1.00	100%	0%	0%
S91	1	1	1.00	0%	0%	0%
S92	1	1	1.00	0%	0%	0%
S96	1	1	1.00	0%	100%	0%

S98	1	1	1.00	0%	0%	0%
S100	1	1	1.00	100%	0%	0%
S106	1	1	1.00	0%	0%	0%
S120	1	1	1.00	100%	0%	0%
S121	1	1	1.00	100%	0%	0%
S125	1	1	1.00	0%	0%	0%
S127	1	1	1.00	100%	0%	0%
S129	1	1	1.00	100%	0%	0%
S130	1	1	1.00	0%	100%	0%
S132	1	1	1.00	0%	100%	100%
S135	1	1	1.00	0%	100%	0%
S136	1	1	1.00	100%	0%	0%

Note. Table is sorted by most to least numbers of records per day.

Table 2

Proportions of Records with Client Behaviours

			Client Behaviour	
Client	Count of Records	Data Collection Interval (Days)	Number of Client Behaviours Specified in Records	Percent of Client Behaviour Specified in Record
C32	93	90	91	98%
C7	77	73	51	66%
C54	77	91	51	66%
C46	61	74	3	5%
C23	41	21	27	66%
C21	21	30	20	95%
C19	18	155	17	94%
C51	15	25	4	27%
C20	13	26	13	100%
C47	11	70	11	100%
C18	10	25	7	70%
C50	9	56	8	89%
C25	8	40	8	100%
C31	8	32	8	100%
C48	8	62	8	100%
C58	8	53	8	100%
C3	7	59	6	86%
C5	7	47	7	100%
C28	7	84	6	86%
C8	6	30	5	83%
C2	5	33	5	100%
C9	5	17	5	100%
C12	5	42	5	100%
C13	5	24	5	100%

C14	5	80	5	100%
C34	5	22	4	80%
C35	5	56	4	80%
C43	5	11	5	100%
C57	5	92	5	100%
C11	4	124	3	75%
C22	4	26	4	100%
C30	4	46	3	75%
C37	4	28	4	100%
C49	4	17	1	25%
C10	3	7	3	100%
C15	3	24	3	100%
C26	3	28	3	100%
C39	3	17	3	100%
C40	3	25	2	67%
C41	3	55	2	67%
C44	3	1	3	100%
C53	3	86	3	100%
C55	3	20	3	100%
C56	3	19	3	100%
C1	2	1	1	50%
C4	2	12	2	100%
C6	2	18	2	100%
C16	2	1	2	100%
C17	2	12	1	50%
C24	2	1	1	50%
C36	2	20	0	0%
C45	2	13	2	100%
C27	1	1	1	100%
C29	1	1	1	100%
C33	1	1	1	100%
C38	1	1	1	100%
C42	1	1	1	100%

C52	1	1	1	100%

Note. Table is sorted by most to least numbers of records per day.

Table 3

Proportions of Social Connections

	Social Connections							
Client	Number of Client Behaviours Specified in Records	Percent of Connections Made with Friends or Acquittances	Percent of Connections Made with Family	Percent of Connections Made with Paid Staff	Percent of Connections Made with Roommates	Percent of Connections Unable to Tell	Number of New Connections	Percent of New Connections
C32	91	2%	67%	0%	0%	31%	0	0%
C7	51	0%	2%	16%	2%	80%	2	4%
C54	51	4%	31%	16%	2%	47%	1	2%
C23	27	11%	0%	0%	0%	89%	0	0%
C21	20	5%	0%	10%	0%	85%	2	10%
C19	17	0%	100%	0%	0%	0%	0	0%
C20	13	0%	100%	0%	0%	0%	0	0%
C47	11	0%	91%	9%	0%	0%	0	0%
C50	8	50%	13%	0%	0%	38%	0	0%
C25	8	38%	63%	0%	0%	0%	0	0%
C31	8	25%	38%	0%	0%	38%	0	0%
C48	8	63%	25%	0%	0%	13%	3	38%
C58	8	13%	75%	13%	0%	0%	1	13%
C18	7	43%	43%	14%	0%	0%	0	0%
C5	7	29%	0%	0%	14%	57%	1	14%
C3	6	0%	100%	0%	0%	0%	0	0%
C28	6	17%	0%	50%	0%	33%	5	83%
C8	5	0%	80%	0%	0%	20%	0	0%
C2	5	0%	100%	0%	0%	0%	0	0%
C9	5	0%	60%	0%	0%	40%	0	0%
C12	5	0%	80%	20%	0%	0%	0	0%
C13	5	20%	0%	20%	0%	60%	1	20%

C14	5	20%	60%	0%	0%	20%	1	20%
C43	5	0%	60%	20%	0%	20%	1	20%
C57	5	40%	0%	60%	0%	0%	1	20%
C51	4	0%	0%	75%	0%	25%	0	0%
C34	4	50%	50%	0%	0%	0%	0	0%
C35	4	0%	75%	25%	0%	0%	0	0%
C22	4	25%	75%	0%	0%	0%	0	0%
C37	4	0%	0%	25%	0%	75%	0	0%
C46	3	0%	100%	0%	0%	0%	0	0%
C11	3	0%	67%	0%	0%	33%	0	0%
C30	3	0%	100%	0%	0%	0%	0	0%
C10	3	33%	67%	0%	0%	0%	0	0%
C15	3	0%	100%	0%	0%	0%	0	0%
C26	3	0%	100%	0%	0%	0%	0	0%
C39	3	0%	100%	0%	0%	0%	0	0%
C44	3	0%	33%	33%	0%	33%	0	0%
C53	3	33%	67%	0%	0%	0%	1	33%
C55	3	0%	100%	0%	0%	0%	0	0%
C56	3	0%	67%	0%	33%	0%	2	67%
C40	2	0%	0%	0%	0%	100%	1	50%
C41	2	50%	50%	0%	0%	0%	0	0%
C4	2	0%	0%	0%	0%	100%	0	0%
C6	2	50%	50%	0%	0%	0%	0	0%
C16	2	0%	100%	0%	0%	0%	0	0%
C45	2	0%	0%	0%	50%	50%	0	0%
C49	1	100%	0%	0%	0%	0%	2	100%
C1	1	0%	100%	0%	0%	0%	0	0%
C17	1	0%	0%	0%	0%	100%	0	0%
C24	1	0%	0%	0%	0%	100%	0	0%
C27	1	0%	0%	0%	0%	100%	0	0%
C29	1	0%	100%	0%	0%	0%	0	0%
C33	1	0%	0%	0%	0%	100%	0	0%
C38	1	0%	100%	0%	0%	0%	0	0%

C42	1	0%	100%	0%	0%	0%	0	0%
C52	1	0%	0%	0%	0%	100%	0	0%
C36	0	0%	0%	0%	0%	0%	0	0%

Note. Table is sorted by most to least numbers of client behaviours specified in the record.

Table 4

Proportions of Client Behaviours That Were Prompted, Supported, and Reinforced

		Type of Staff Behaviour		
Client	Number of Client Behaviours Specified in Records	Percentage of Prompted Behaviour	Percentage of Supported Behaviour	Supportive of Reinforced Behaviour
C32	91	13%	8%	1%
C7	51	98%	6%	0%
C54	51	10%	6%	0%
C23	27	0%	4%	0%
C21	20	5%	105%[a]	35%
C19	17	0%	59%	41%
C20	13	77%	31%	31%
C47	11	36%	82%	27%
C25	8	13%	0%	13%
C31	8	13%	0%	25%
C48	8	0%	50%	0%
C50	8	63%	50%	0%
C58	8	88%	75%	88%
C5	7	71%	86%	43%
C18	7	71%	57%	0%
C3	6	33%	100%	17%
C28	6	17%	33%	17%
C2	5	80%	100%	20%
C8	5	20%	20%	0%
C9	5	40%	20%	40%
C12	5	60%	80%	20%
C13	5	40%	60%	40%
C14	5	20%	80%	40%

C43	5	0%	40%	0%
C57	5	20%	60%	0%
C22	4	0%	75%	0%
C34	4	25%	0%	0%
C35	4	25%	50%	50%
C37	4	0%	100%	0%
C51	4	0%	0%	0%
C10	3	33%	67%	0%
C11	3	100%	67%	67%
C15	3	0%	100%	0%
C26	3	67%	67%	0%
C30	3	0%	133%[a]	0%
C39	3	33%	0%	0%
C44	3	33%	33%	33%
C46	3	0%	0%	0%
C53	3	33%	100%	33%
C55	3	0%	0%	0%
C56	3	0%	33%	100%
C4	2	50%	50%	50%
C6	2	100%	50%	0%
C16	2	0%	50%	0%
C40	2	0%	50%	0%
C41	2	0%	0%	0%
C45	2	0%	0%	50%
C1	1	100%	200%[a]	100%
C17	1	200%[a]	100%	100%
C24	1	100%	100%	0%
C27	1	0%	100%	100%
C29	1	0%	100%	0%
C33	1	0%	100%	0%
C38	1	100%	100%	0%
C42	1	0%	0%	0%
C49	1	0%	400%[a]	0%

C52	1	0%	0%	0%
C36	0	0%	0%	0%

Note. Table is sorted by most to least numbers of client behaviours specified in the record.

[a] More than one staff behaviour type could be emitted for a given client behaviour (thus making it possible for the percentage of staff behaviour to be > 100%.

Figure 1

Database Record Exclusion Process

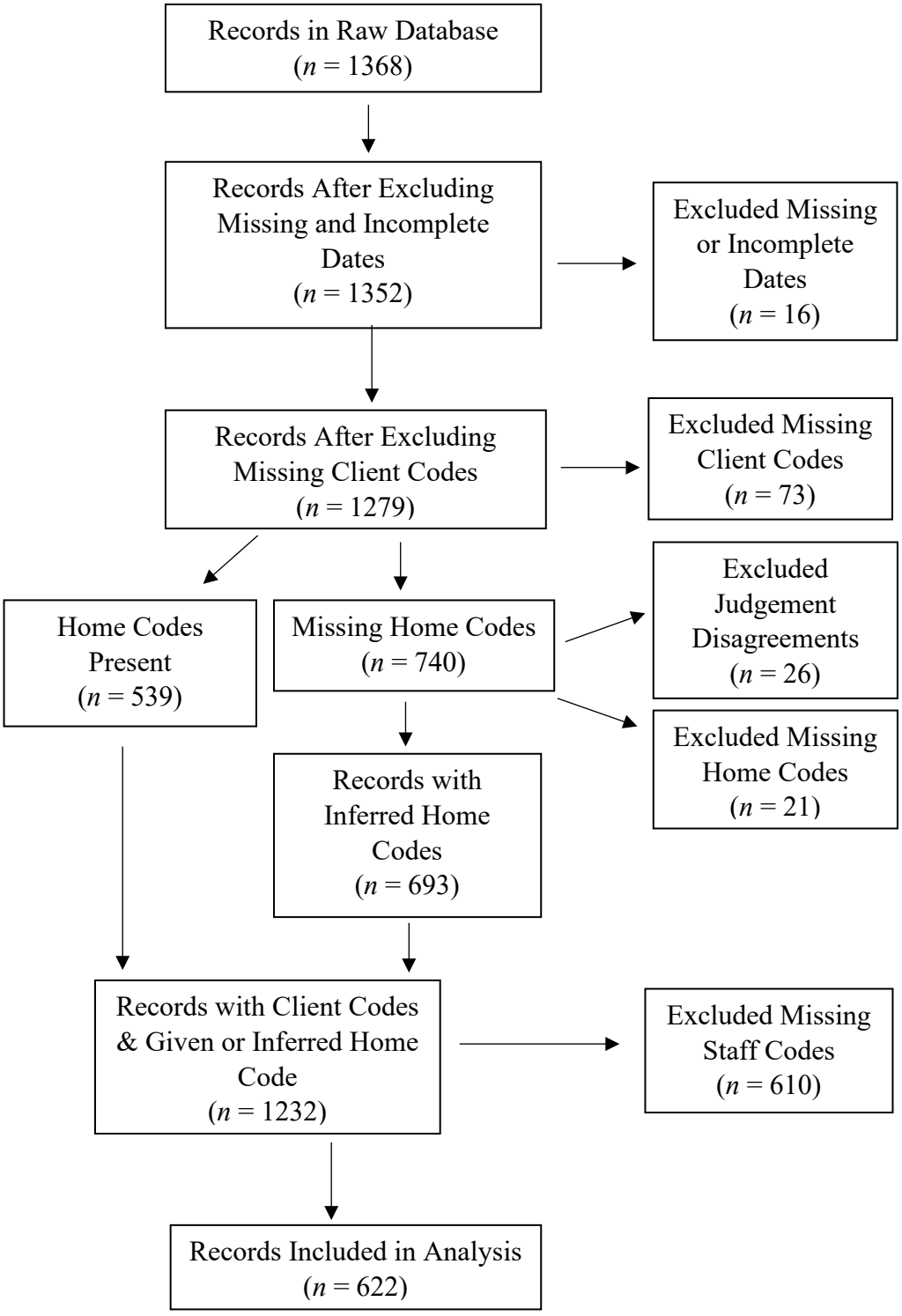
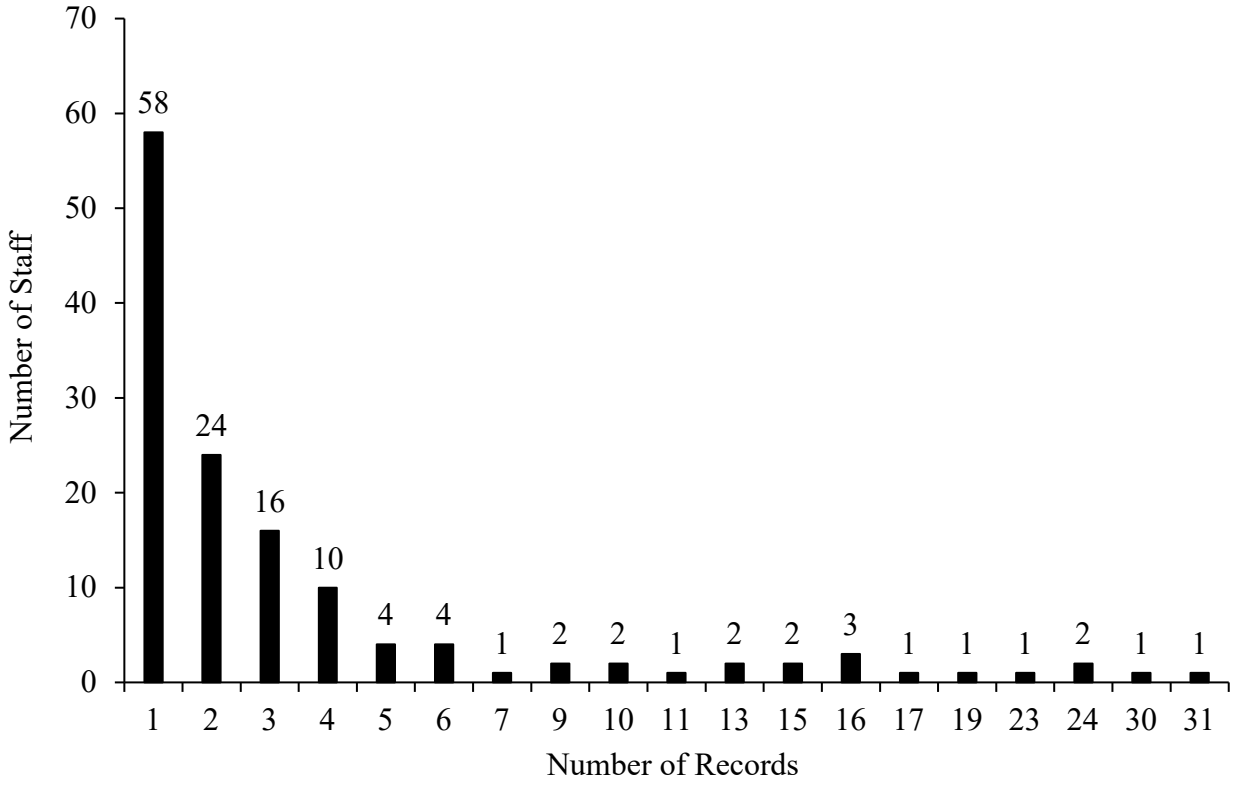


Figure 2

Frequency Distribution of Records by Staff (N = 136)



Note. x-axis of figure does not include values where staff count was zero.

Figure 3

Mean Percentage Across Clients (n = 58) of Records Specifying Each Connection Type

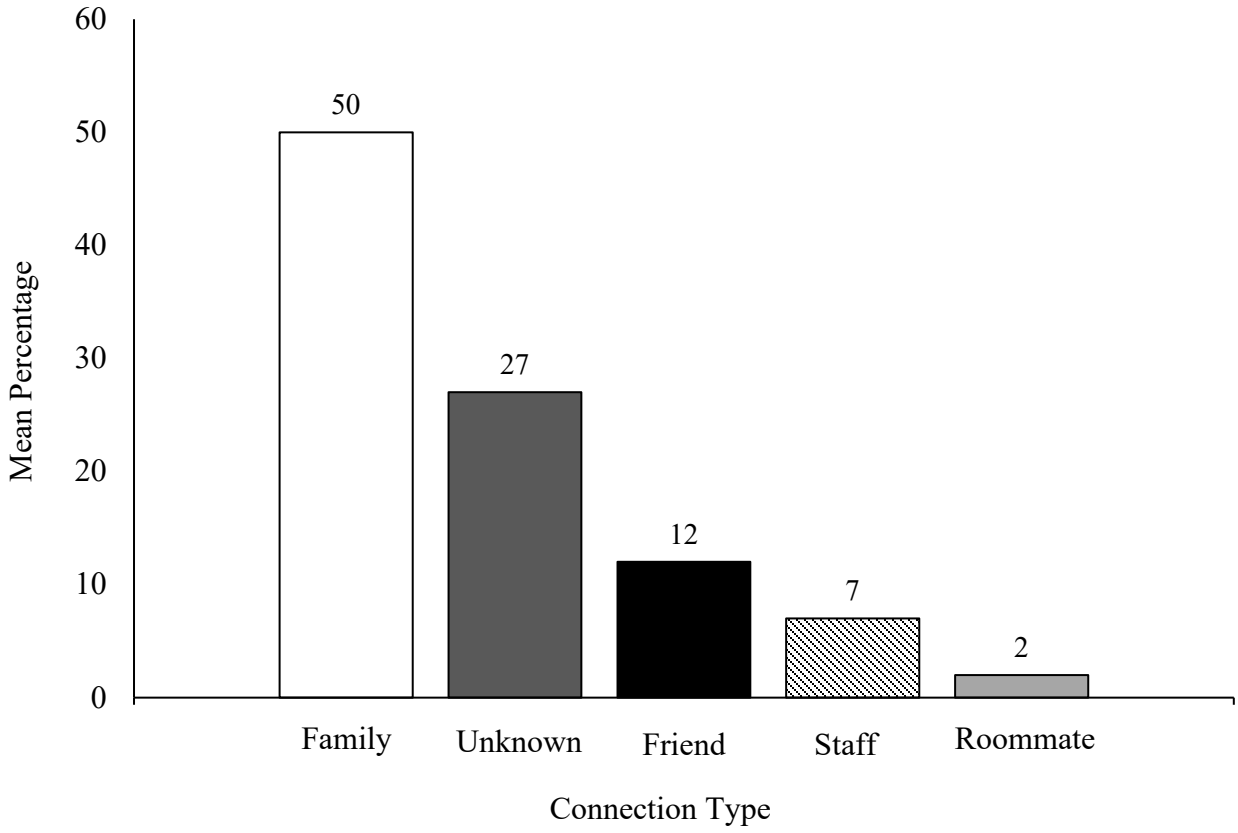


Figure 4

Thematic Analysis of Staff Prompting Behaviours (n = 142)

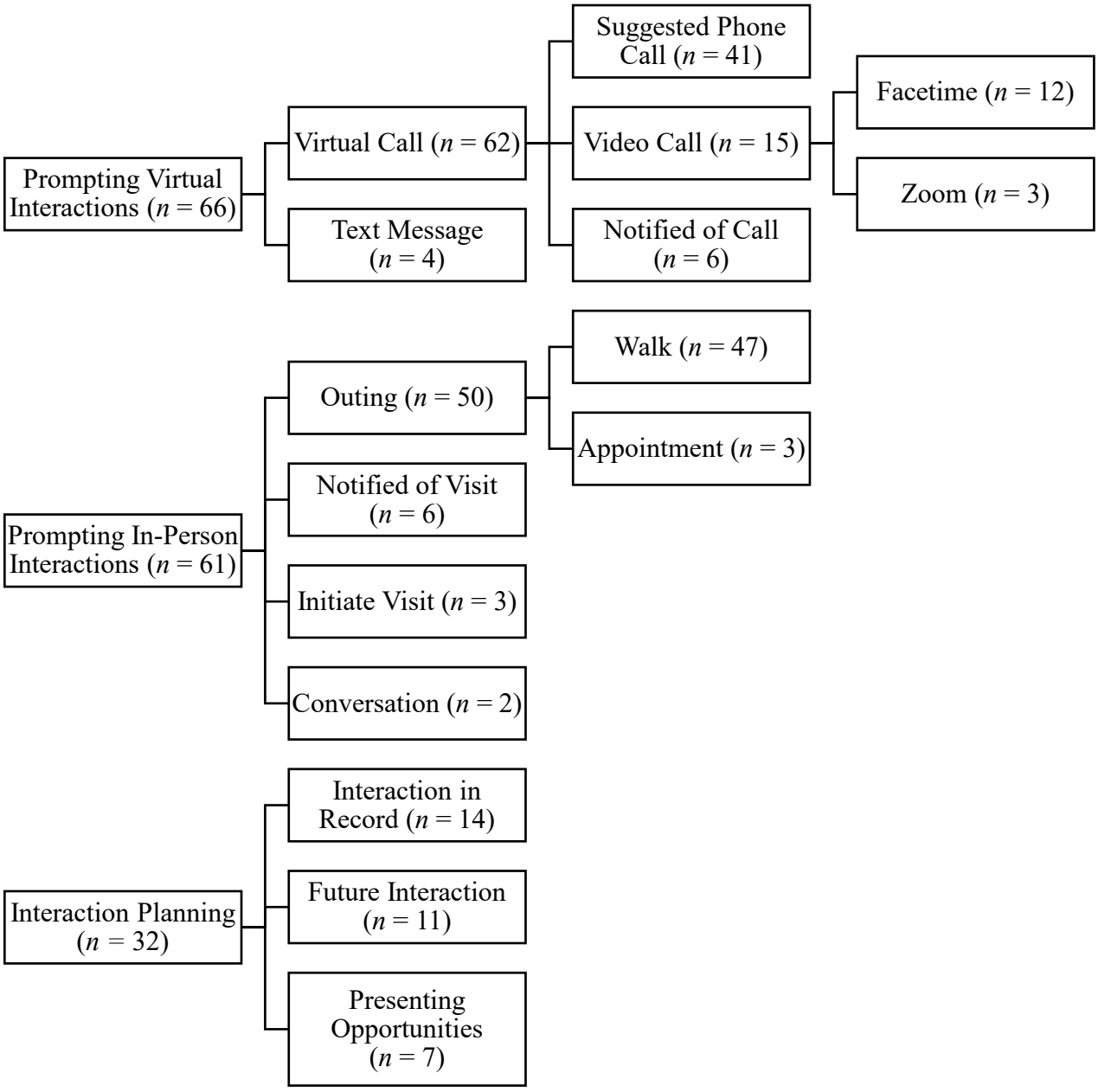
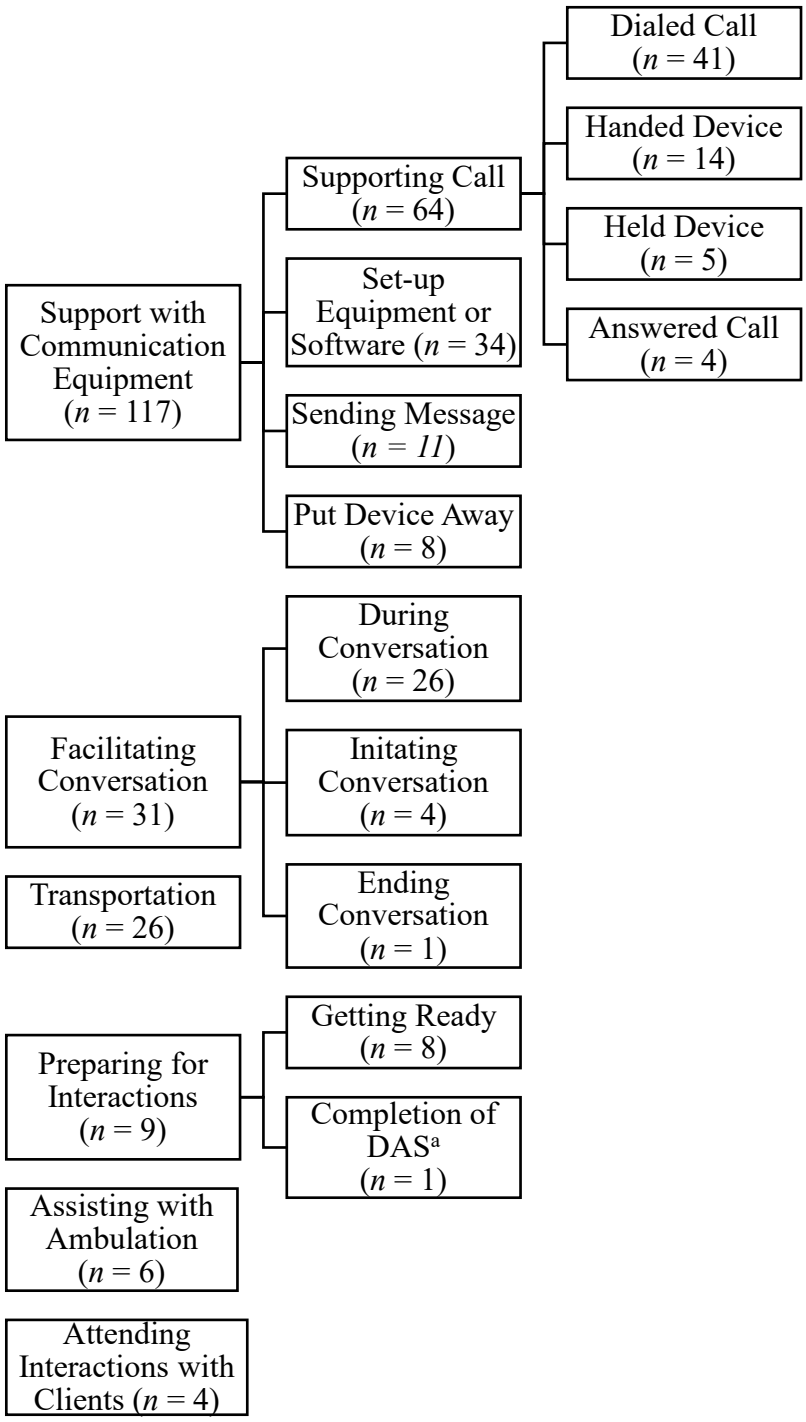


Figure 5

Thematic Analysis of Staff Supportive Behaviours (n = 155)



Note. [a] DAS stands for Daily Activity Schedule.

Figure 6

Thematic Analysis of Staff Reinforcement Behaviours (n = 59)

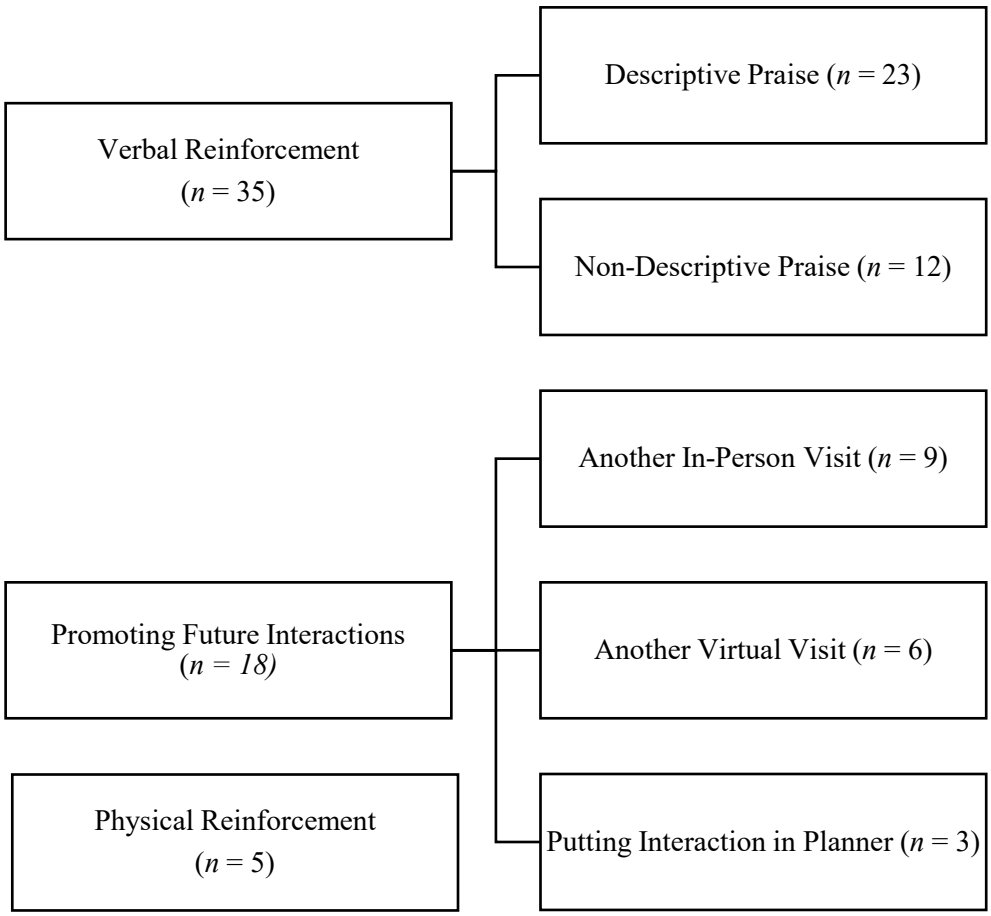


Figure 7

Thematic Analysis of Client Social Connection Behaviours (n = 462)

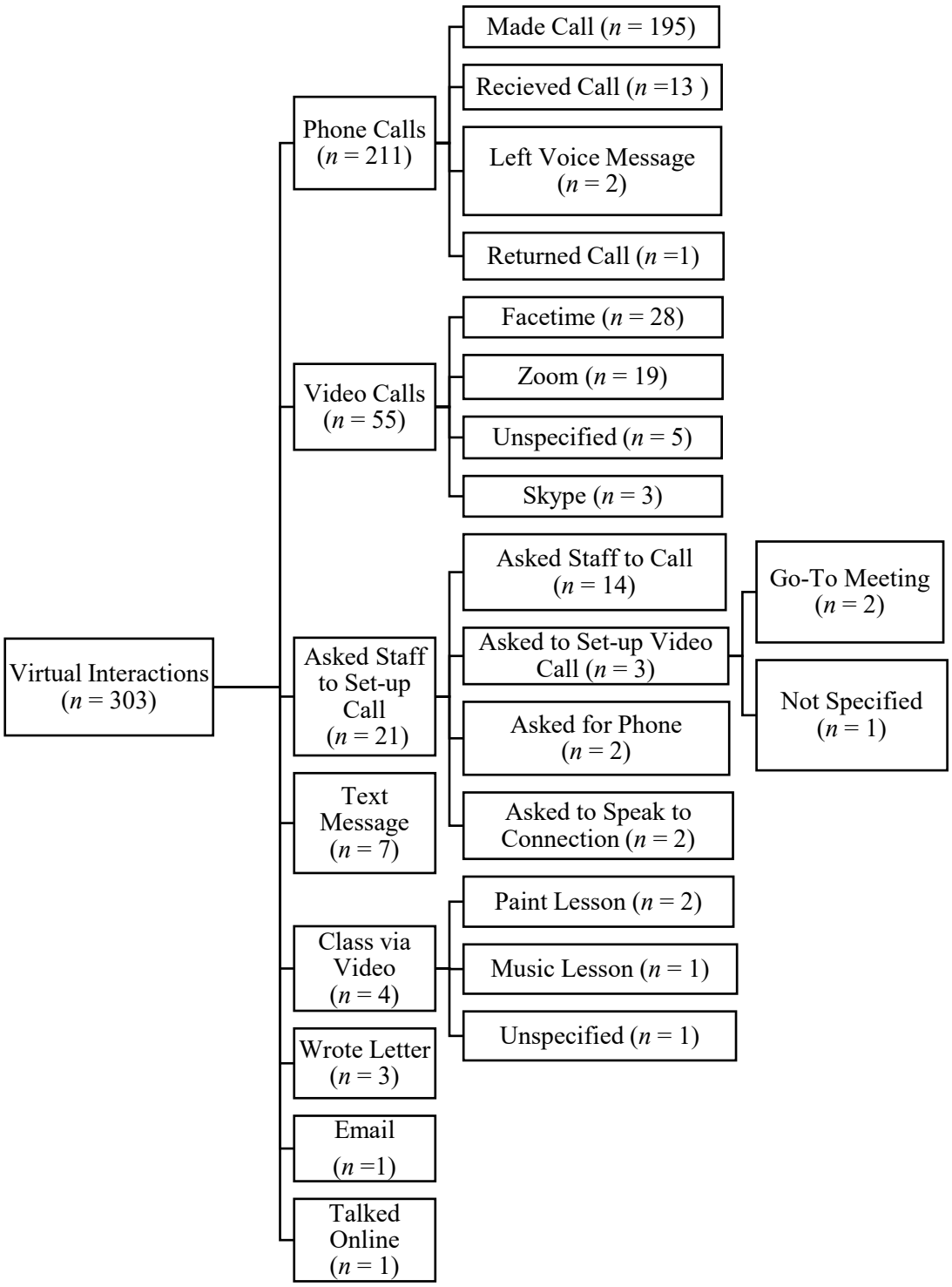


Figure 7 (continued)

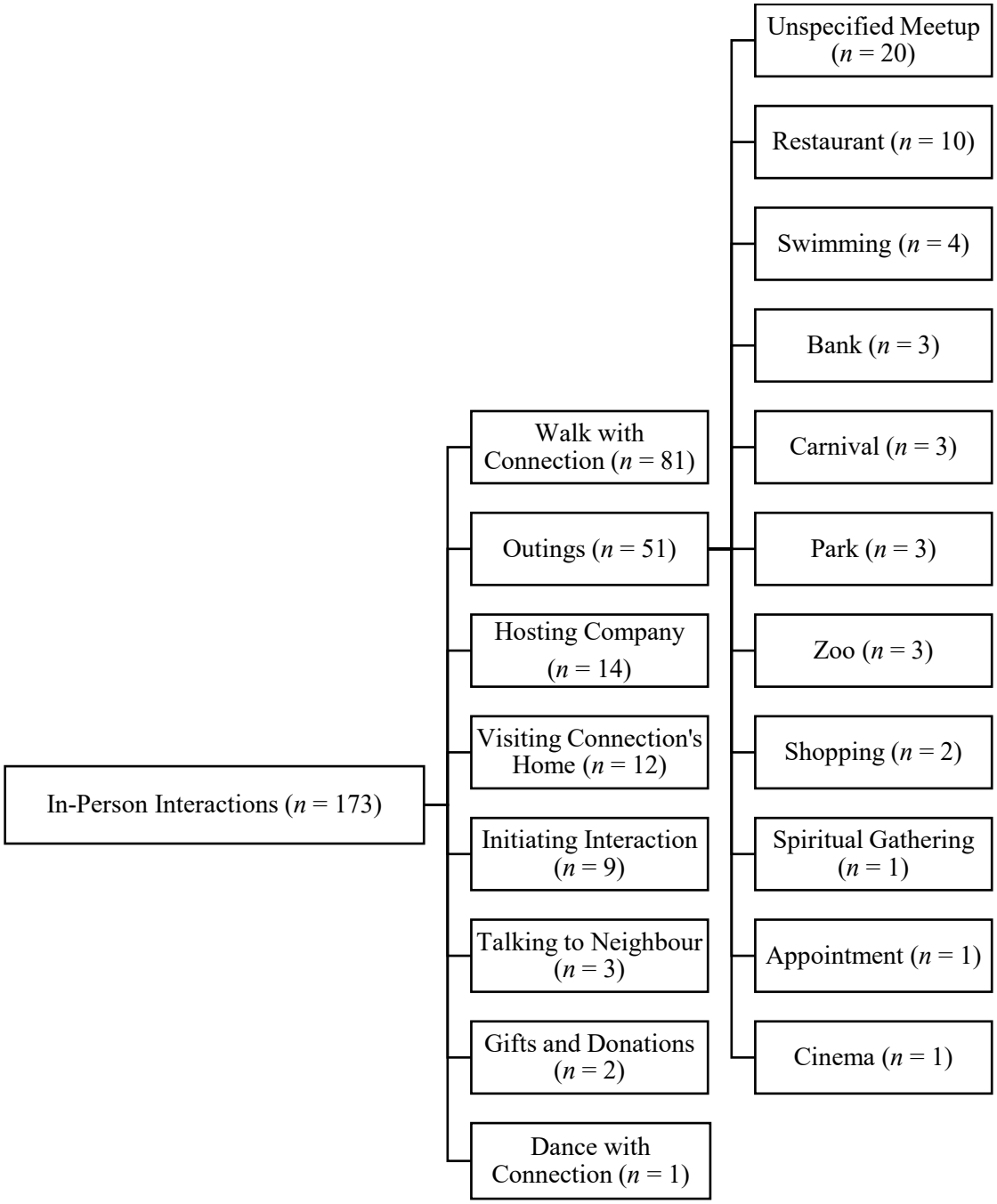
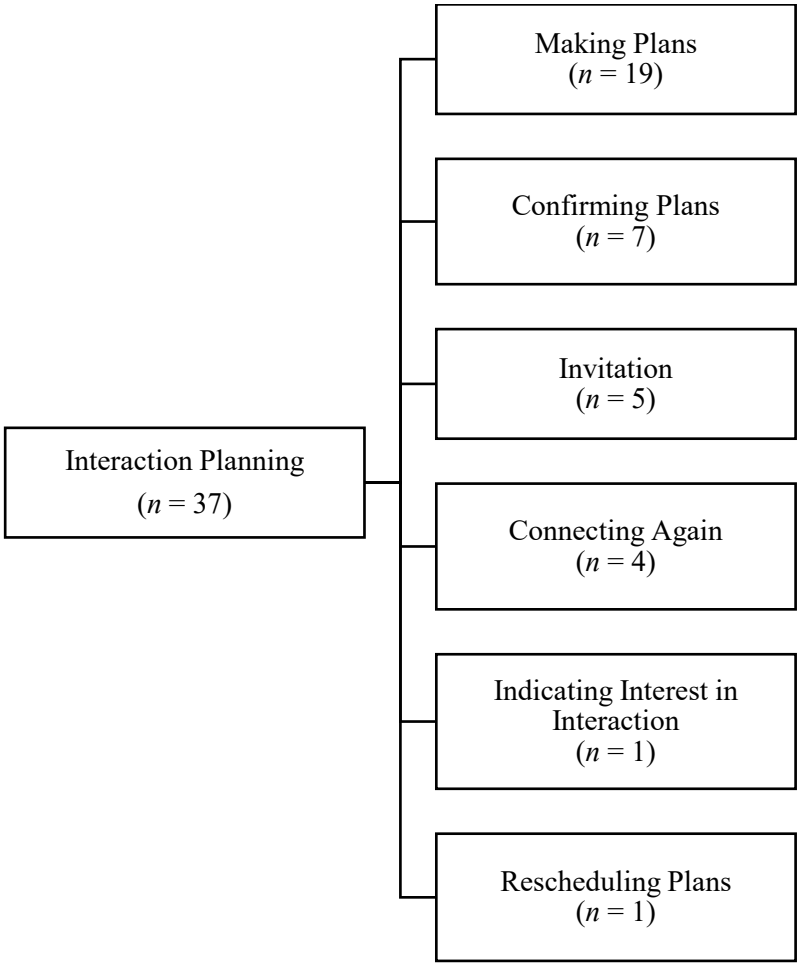


Figure 7 (continued)



Appendix A – Meaningful Connections Log

About this Log

St.Amant seeks to promote meaningful connections for the people it supports. Meaningful connections are unpaid relationships that enrich a person's natural supports. Each person will have their own goals—some people may not want new connections, and that's fine.

But for those who would like more meaningful connections, they won't simply happen. Each person must do things to help create, develop, and maintain their connections. Support staff have a role too, to help the person take those steps.

To consider how staff can help, suppose that you've decided to get more exercise. The decision is yours, and you are the one who must work out. But it's wise to recruit your friends and family to help you do it! They might invite you to go to the gym or suggest biking instead of driving. They'll congratulate you for a good workout and cheer you on as you become fitter or slimmer. Here, the friends and family are playing a role like the one staff can play in supporting connections.

This log records the things done to promote connections. In the weeks and months to come, staff will receive training designed to help them at this. The log will help show whether and how things change after training.

Definitions and Examples

- *Step Taken* – Any action taken by the person that promotes creating, developing, or maintaining a meaningful connection. e.g., sign up for a Zumba class at the YMCA, help a neighbour shovel snow, start volunteering at a pet shelter, host a virtual musical instrument jam session
- *New/Existing*
    - *New* – are the step(s) taken to build a new connection with a person or people not already known to the individual?
    - *Existing* – are the step(s) taken to develop or maintain a connection with someone the person already knows?
- *What Staff Did*
    - *Before* – Did you do anything before the person took their step, to encourage it or make it easier? e.g., ask who the person would like to invite to join them at the movies, ask whether the person would like to sign up for a leisure guide activity, let the person know the neighbours are unpacking their car and it looks like they could use some help
        - **Important!** You should use this space to record anything you do to promote a connection step, even if it doesn't happen.
    - *During* - What did you do to facilitate the person's step? e.g., looked up Susan's telephone number and helped to dial, drove the person and their friend to the movie theatre

- *After* - Did you do anything after the person took their step, by way of acknowledgement or congratulations? e.g., gave a high five after the musical jam session, complimented their guitar playing, and suggest scheduling another session next month, praise a job well-done after talking with staff at the coffee shop, suggest trying to call Sally again tomorrow after there was no answer on the telephone.

Meaningful Connections Log Initials of Person Supported:_____				
What the Person Did				
Date & Staff Initials	Step Taken	New or existing connection?	What the Staff Did	Notes
			Before:	
			During:	
			After:	
			Before:	
			During:	
			After:	
			Before:	
			During:	
			After:	
			Before:	
			During:	

Appendix B

IOA Instructions for Home Code Inference Task

Context: The purpose of this study is to learn from staff what they do to support social connections, by analyzing self-observations of staff behaviour when supporting clients towards social inclusion. St.Amant has provided the research team with a database that contains anonymized data collected by St.Amant's Community Residential Program (CRP) staff members. The database includes fields to record information about the person supported, the home where they reside, and the staff involved. Staff who generated the records did not reliably use all of these fields however, and some or all of them may be blank in any given record.

The original records contained staff and client initials, and the names of specific CRP homes. A staff who is not a member of the research team performed the following steps to anonymize the data:

1. A complete list of CRP homes was written in random order and each home was assigned a sequential number (e.g. CRP001). All instances of home names were replaced with the assigned number.
2. Each letter of the English alphabet was assigned a random number from 1 to 26. All instances of initials were then replaced with a 4-digit code comprising a number for the first initial and a number for the last initial. For example, if J were assigned 09 and M were assigned 21, a staff with the initials JM would be given the code S0921.

Staff and client codes therefore do not necessarily refer to a unique individual, since there may be two or more people with the same set of initials. However, CRP staff confirmed that there is not more than one client in any given home with the same initials. Therefore all records with the same client & home code pair (e.g. CRP001 and P0102) must refer to the same unique individual.

Client codes were included in 95% of all records, but home codes were included in only 42% of records. Where the client code was present but the home code was not, it may be possible to infer the home code based on content similarity to records where both codes were included.

Task: The purpose of this task is to determine, for data entries where a CRP home was not identified, whether a record is for the same or a different client. Included with this document is an excel spreadsheet, which contains a list of all unique client codes, corresponding staff and home codes (if they exist), and a record which outlines the particulars of the interaction or outing. You will use the following criteria to judge whether entries can be attributed to the same vs. different individual(s):

- Date of the entry: Entries that share close dates may be grouped together with greater confidence than entries with dissimilar dates
- Content and style of record: Entries that share similar content (e.g., similar activities, contacts, pronouns, etc.) and style (e.g., wording) may be grouped together with greater

confidence than entries with dissimilar content (e.g., differing pronouns, different activities) and style (e.g., inconsistent wording).

- Same staff code as previously identified "client-staff-home" pairing

Outcome: Once you have completed the task identified above, your judgements will be compared to those of the principal investigator, for the purpose of obtaining Inter-Observer Agreement (IOA). This information will be used to reach judgements on how to group entries with missing home codes.

Appendix C

IOA Instructions for Staff Behaviour Task (Question 1)

Context: The purpose of this study is to learn from staff what they do to support social connections, by analyzing sustained self-observations of staff behaviour when supporting clients towards social inclusion. St.Amant has provided the research team with a database that contains anonymized data collected by St.Amant's Community Residential Program (CRP) staff members. One of the research questions for this project involves determining how frequently staff engaged in prompting, supporting, and reinforcing behaviours.

Task: If used properly, staff were to indicate their behaviours under the "before", "during", and "after" columns on the datasheet (which correspond with the same columns in the database). This task involves making a judgement, for each record, on the occurrence of each behaviour type (prompt vs. reinforce vs. support). Its important to note that these behaviours may be indicated anywhere in the record. You will indicate whether each behaviour type occurred in the corresponding columns labeled "prompt", "reinforcement", and "support". Under each behaviour type column, you will indicate a "1" if the behaviour type occurred anywhere in the record, and a "0" if the behaviour type did not occur in the record (or if you can't tell if the behaviour type occurred). Please use the following definitions when making your judgements:

- Prompt: Did the staff do anything **before** the person took their connection step, to encourage it or to make it easier?
    - Behaviour analytic definition: A supplemental antecedent stimulus provided to increase the likelihood that a desired behaviour will occur[1]

- Reinforcement: Did the staff do anything **after** the person took made their connection step, to encourage the future occurrence of the step that was just performed? This may be by way of acknowledgement or congratulations or may be an instruction or a rule that relates to making that connection step again in the future.
    - **Important:** if a client does not engage in a behaviour (in other words, no step is taken), reinforcement can't occur in the functional sense. If there is no evidence of a client behaviour, there is no behaviour to reinforce.

- Support: behaviours the staff might perform if the person supported could not, that help the connection step to occur (e.g., looking up a phone number, dialing the phone, transportation, holding an iPad during a video call, getting dressed for a social interaction, etc.)

[1] Martin, G. & Pear, J. (2019). *Behaviour Modification: What it is and How to do it* (11th ed.). Routledge.

Appendix D

IOA for Client Behaviour Tasks (Questions 2)

Context: The purpose of this study is to learn from staff what they do to support social connections, by analyzing sustained self-observations of staff behaviour when supporting clients towards social inclusion. St.Amant has provided the research team with a database that contains anonymized data collected by St.Amant's Community Residential Program (CRP) staff members. One of the research questions for this project involves determining how frequently clients responded to staff support to promote social connection.

Task: Staff were instructed to report on client behaviour under the "What the person did" column, but this was not always the case. Therefore, in order to effectively analyze the data that pertains to this research question, the following tasks were determined:

1a) **Does the record describe at least one action by the client to promote social connection?** Look at each record individually and determine if a client behaviour that promotes social connection was captured. The behaviour can be indicated across any of the columns, and you'll indicate "1" for yes, and "0" for no, under the "was client behaviour specified" column.

1b) **If client behaviour was captured in the record, was it captured in the "What the person did" column, or somewhere else?** Indicate where in the record the client behaviour was captured. You will indicate "1" if the client behaviour was captured in the "step taken" column, and "0" if the client behaviour was captured elsewhere in the record (e.g., in the staff behaviour columns, in the notes columns, or somewhere else). For this task, you will refer to the cell that contained the behaviour identified in item 1a, above.

a. **You don't need to complete this task if the record was labeled as "0" in Task #1a, above. If this is the case, the cell remains blank.**

2) **Who was the social connection made with?** Indicate a 1 for friend/acquittance, 2 for family, 3 for staff or paid professional, 4 for a roommate, and 0 if you can't tell who the connection step was made with. If there is a case where a staff member *and* an additional connection member are identified, indicate who the *additional member* was. This is because we will assume that the staff was there to support the client during the social connection and therefore won't count them as the primary connection.

a. **You don't need to complete this task if the record was labeled as "0" in Task #1a, above. If this is the case, the cell remains blank.**

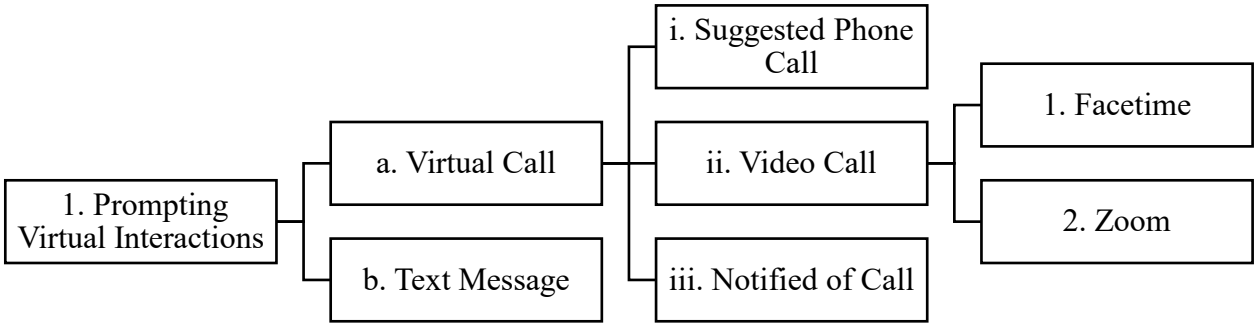
Appendix E

IOA for Thematic Analysis Task (Questions 4-7)

Context: The purpose of this study is to learn from staff what they do to support social connections, by analyzing repeated self-observations of staff behaviour when supporting clients towards social inclusion. St.Amant has provided the research team with a database that contains anonymized data collected by St.Amant's Community Residential Program (CRP) staff members. Several of the research questions for this project involves determining the *types* of prompts, support, and reinforcement that staff provide to clients during social connections. Another research question is to determine the *types* of client social connection behaviours that staff identified.

In order to determine the types of staff and client behaviours that are captured in the data, the principal investigator performed thematic analysis. Thematic analysis is a method used to classify, analyze, and describe prevalent themes within a dataset. A theme is defined as a valuable piece of information in the dataset that is relevant to the research question.[2]

Task: This task involves judging which theme(s) the record should be assigned to. For each record, you will determine the appropriate theme for which to classify it, using the attached thematic tree. An example of a thematic tree is provided below.



For example, if you are analyzing a record that includes a staff member prompting a client to make a Zoom call, you would classify the record as "1.a.ii.2". You will then enter this value under the "assigned values" column in the Excel database. It is important to note that records may be assigned to more than one code, and therefore may have more than one value. In the example provided above, it is possible that the staff member also prompted the client to send a text message prior to the zoom call. In this case, you will enter both values in the column, separated by a semicolon (e.g., 1.a.ii.2; 1.b).

---

[2] Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. doi: 10.1191/1478088706qp063oa

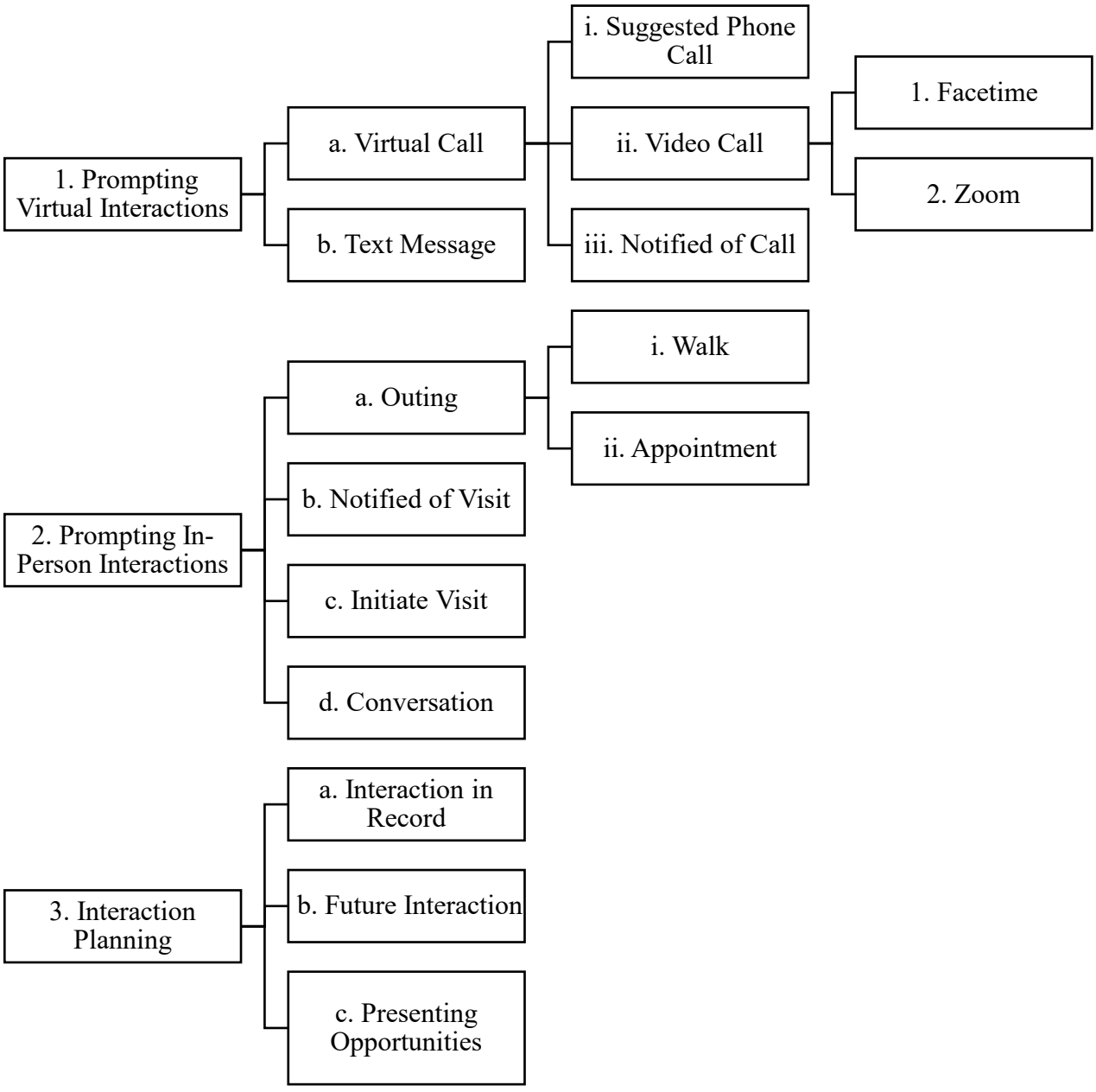
You will complete this task for 4 different research questions, as follows. When considering each question, I suggest viewing the corresponding thematic tree figure side-by-side with the database record being considered.

1. What types of *prompts* did staff provide when promoting social connection? (Question 4)
    a. Definition of a prompt: Did the staff do anything **before** the person took their connection step, to encourage it or to make it easier?
2. What types of *support* did staff provide when promoting social connection? (Question 5)
    a. Definition of support: behaviours the staff might perform if the person supported could not, that help the connection step to occur (e.g., looking up a phone number, dialing the phone, transportation, holding an iPad during a video call, getting dressed for a social interaction, etc.)
3. What types of *reinforcement* did staff provide when promoting social connection? (Question 6)
    a. Definition of reinforcement: Did the staff do anything **after** the person took made their connection step, to encourage the future occurrence of the step that was just performed? This may be by way of acknowledgement or congratulations or may be an instruction or a rule that relates to making that connection step again in the future.
4. What types of client social connection behaviour did staff report? (Question 7)

Each research question will have its own worksheet in the Excel database (Titled Q4, Q5, Q6, Q7), and its own thematic tree, also labeled by the research question number.

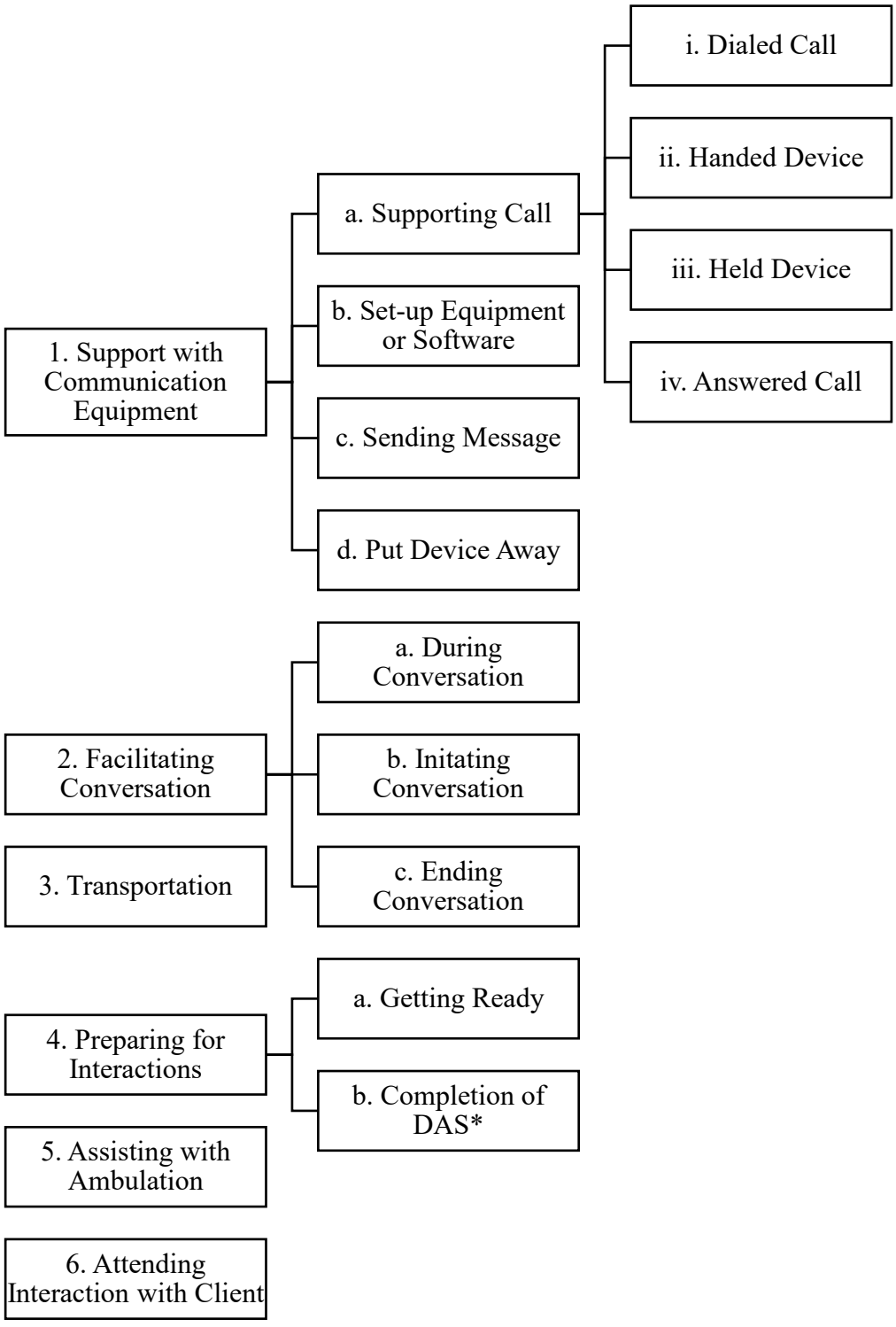
Question 4

Thematic Analysis of Staff Prompting Behaviours



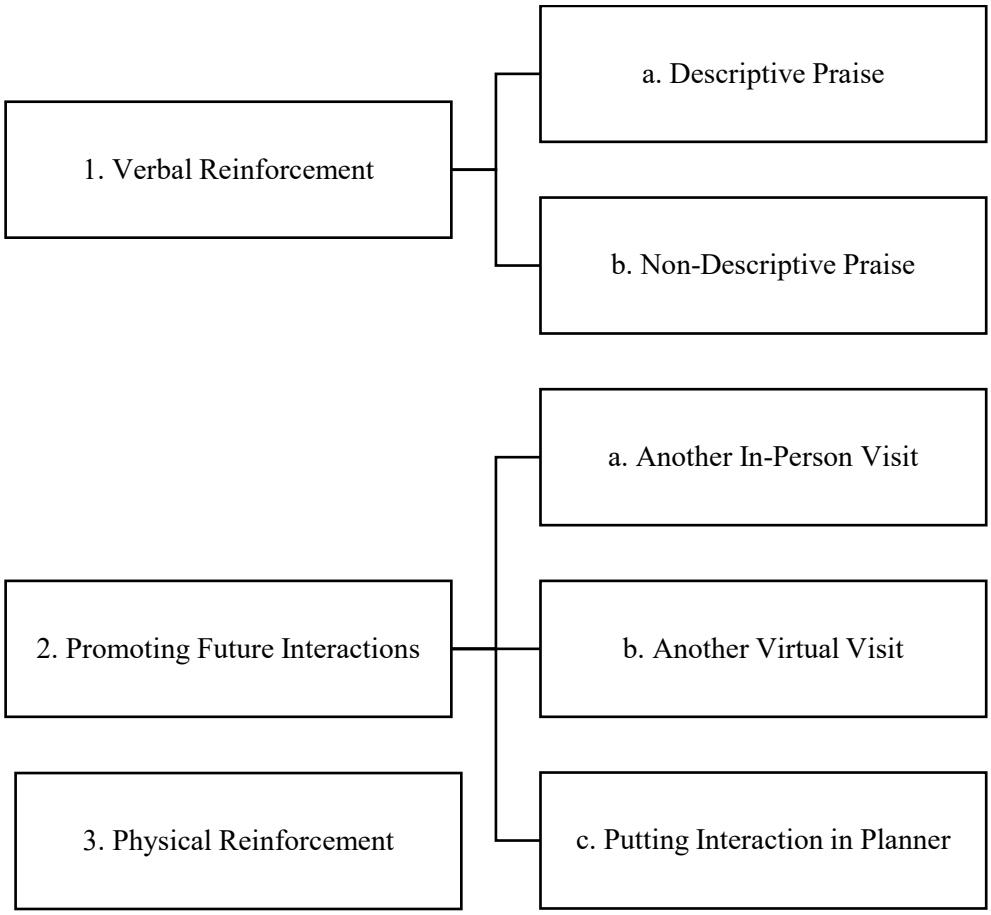
Question 5

Thematic Analysis of Staff Supportive Behaviours



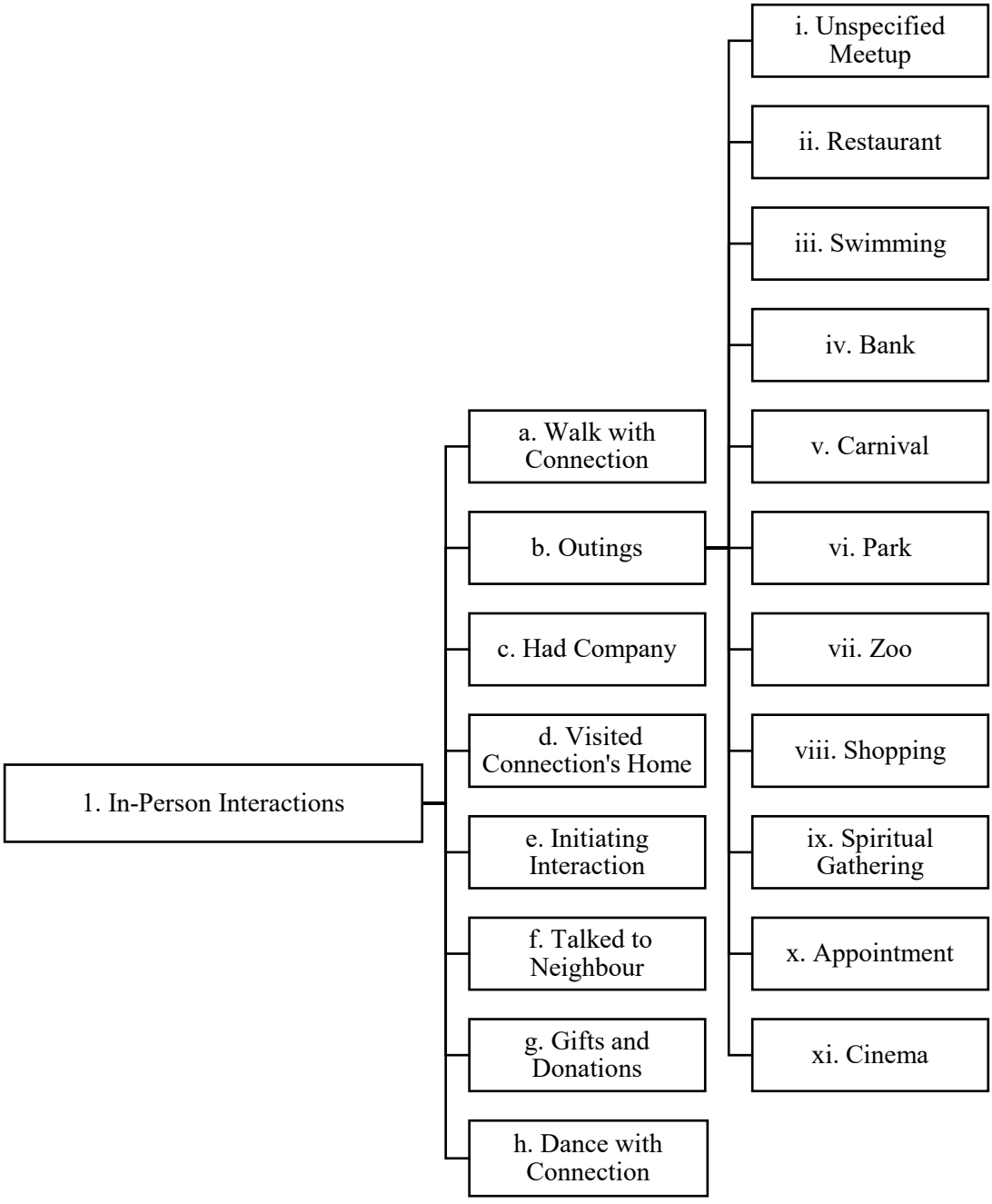
Question 6

Thematic Analysis of Staff Reinforcement Behaviours

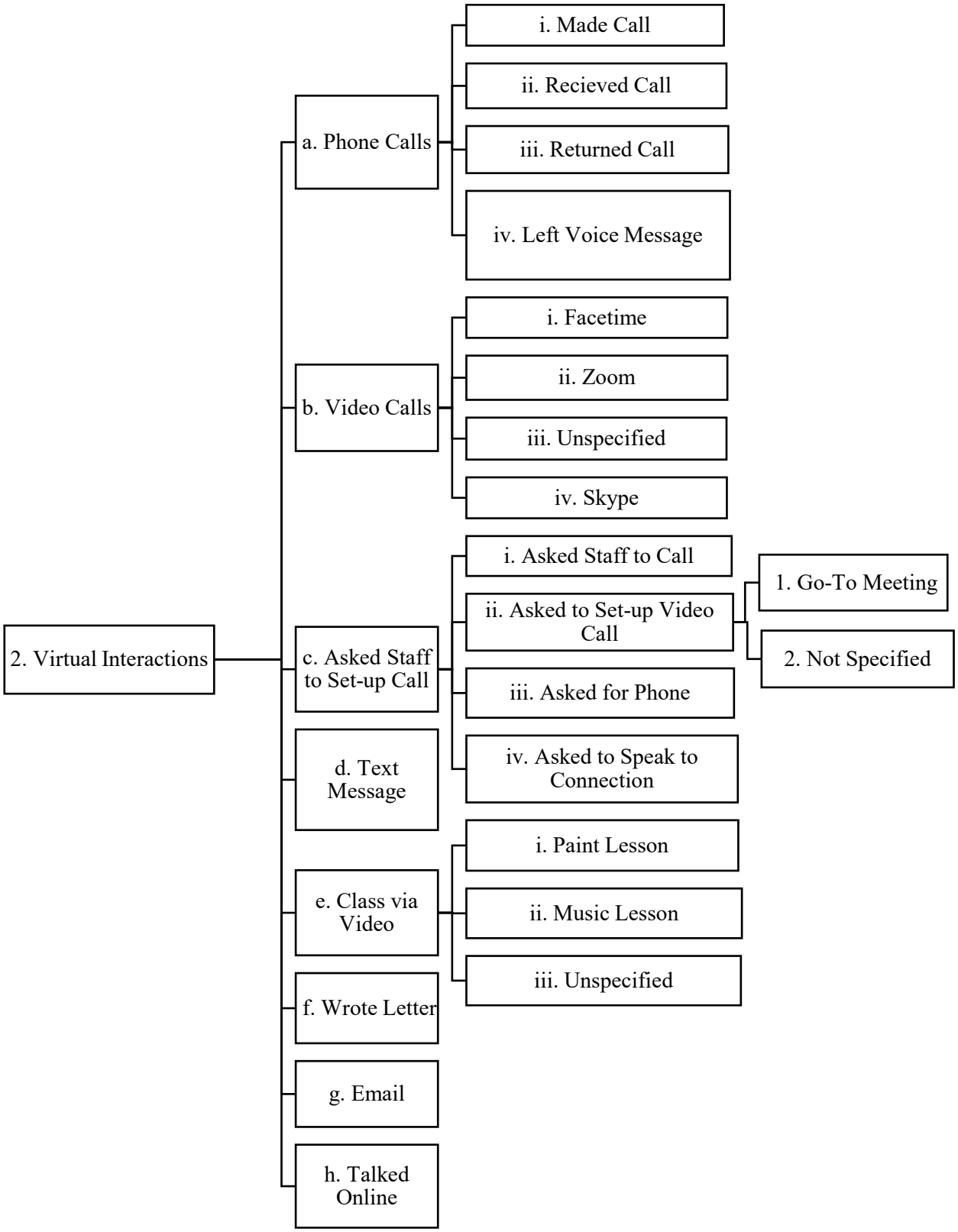


Question 7

Thematic Analysis of Client Social Connection Behaviours



Question 7 (continued)



Question 7 (continued)