Communication between therapists and nurses working in inpatient interprofessional teams: Systematic review and meta-ethnography

Purpose: The aim of the synthesis was to develop new understanding about the influences on communication in interprofessional teams from therapist and nurse perspectives. Methods: Six electronic databases were searched, combined with citation tracking and hand searching, yielding 3994 papers. Three researchers were involved in screening and quality appraisal, resulting in 18 papers for synthesis, using the process of meta-ethnography. Concepts were identified, compared and translated under five category headings. Two researchers mapped interpretative summaries and a line of argument was created. Results: The line of argument is that four inter-related contingences underpin effective communication between therapists and nurses. Effective communication depends on there being a genuine need to give and receive information for patient care, the capacity to attend to, hold, and use information, and opportunities to share space to enable communication to occur. The fourth contingency is good quality relationships and this is the glue that holds the contingencies together. Conclusion: This synthesis has provided an opportunity to illuminate how therapists and nurses accomplish interprofessional work through communication. The contingencies of need, capacity, opportunity and quality of relationships create a new structure for understanding what underpins communication between these two groups.

Keywords: communication; relationships; interprofessional; therapist; nursing

Implications for Rehabilitation

- Need, capacity and opportunity should be understood as contingencies that underpin effective communication about patients, strongly centred on the fourth contingency, quality of relationships between professionals.
- Therapists and nurses should examine what information they genuinely need from each other to effectively conduct integrated care, from the perspective of both giving and receiving information.
- Consideration should be given to whether a culture of reciprocity might expand the capacity of professionals to attend to, hold and use the information they share about patients.
- Therapists and nurses should examine how the way they share space on the ward creates or limits their opportunities to communicate about patients and develop relationships.

Background

There is strong support amongst professionals for the importance and value of interprofessional teamwork [1,2]. The term interprofessional was preferred over others such as multidisciplinary or interdisciplinary. This follows a definition which classifies interprofessional teams as those that share a team identity and work in both integrated and independent ways, in order to solve problems and deliver services [3]. It is recognised that the teams reviewed in the literature did not necessarily operate at this level of integration, however it is the lens through which teams are discussed in this synthesis. There is evidence that organising specialist health care in an integrated way is associated with improved outcomes, in certain conditions. This includes, for example reduced morbidity and increased independence in stroke care [4], and improved activity and participation for people with Multiple Sclerosis [5]. There are difficulties in isolating the interpersonal aspects of team working that underpin achievement of outcomes, hence structural components of teamwork, such as team composition and ward rounds tend to be prominent when evaluating teams, for example in the quarterly audits for the Sentinel Stroke National Audit Plan in the UK [6]. Models of collaboration recognise that the components of teamwork are interpersonal in nature, and this is reflected in discussion of concepts such as interdependence [7,8], information sharing [8,9], and role understanding [10]. However communication is difficult to unpack, as one discrete component of teamwork, and this may be why the particular role of communication tends to be *implicit* in such models. A study by Suter [11] identified communication (together with role appreciation) as a core competency for effective collaboration, based on interviews with 60 health care providers, suggesting that communication warrants stronger recognition as a concept in its own right. Appreciating communication as more than a taken for granted process through which teamwork happens [12] requires understanding of the *actions* that communication accomplishes [13]. Acts of communication between professionals serve the primary purpose of facilitating coordinated patient care, accomplished through shared understanding of the problem at hand [13]. When communication is viewed in terms of the actions it accomplishes (for example generating shared interprofessional understanding for how to help a patient get out of bed safely), it is easier to see how factors such as role appreciation can be understood as potentially influencing whether and how communication is enacted.

Increased professionalization in the past three decades has brought expectations that nurses and non-medical professionals collaborate to plan treatment and make decisions for the benefit of patient care [14]. However, the extent to which meaningful professional collaboration is actually accomplished is highly variable across settings [2]. Different professionals see clinical issues through the lens of their distinct knowledge and ethical frameworks [15], and this creates the potential for uncertainty and emotional dissonance when they are required to integrate the clinical perspectives of other professionals [16]. Much has been written from nursing perspectives that reveals a critical view of how nurses experience interprofessional practice. A systematic review of nursing practice in stroke rehabilitation synthesised some of this literature, which indicated: divisions between nurses and therapists, difficulties for nurses in engaging in team processes such as meetings and training, and lack of appreciation by therapists for nurses' contribution to rehabilitation [17]. Thus there are communication issues that relate specifically to the interface between therapists and nurses, and focused attention in this area has the potential to inform practice between these disciplines. The therapists referred to in this article are those that are the key therapy providers in most UK inpatient hospital settings: physiotherapists, occupational therapists and speech and language therapists. Although therapists have been included as participants in interprofessional research [e.g. 18-20], there have been few studies of the therapist-nurse interface written from a therapist perspective. The limited body of research that has been identified is based on small sample sizes; in these studies nurses are framed as 'other'. Carpenter [21] contrasts perceptions by physiotherapists of successful negotiation of role overlap with occupational therapists, to a more conflictual intersection with nurses, and suggests that nurses operate through different philosophical approaches to care. Other therapist-authored research has focused on nurses' role in executing therapists' advice. The eight speech-language pathologists interviewed by Smith-Tamaray et al. [22] experienced dissatisfaction with nurses (and doctors) follow-through on recommendations for safe swallowing. Physiotherapists interviewed as part of a participatory action research study [23] revealed a level of distrust for nurses' capacity to incorporate training for therapeutic positioning and mobilisation. Overall, the literature reveals challenges in interprofessional working from both therapist and nurse perspectives. This synthesis aims to understand more about how communication is implicated in the discordance that exists at the boundary of therapist and nursing work, with a view to giving greater representation to therapist perspective than has previously been evident in the literature. This research is focused

on inpatient care in order to increase transferability of the findings to similar settings where nurses provide continuous care and therapists provide more intermittent contributions to that care. The synthesis was conducted as part of the process of conducting doctoral research on information sharing between speech and language therapists and nurses in acute stroke care.

Methods

Study Design

Synthesis of qualitative research is a means of widening the potential of qualitative work to influence health care practice [24]. It addresses the how and why questions that meta-analyses of quantitative studies are less well suited to [25]. Meta-ethnography is a particular type of synthesis that was introduced by Noblit and Hare [26], and involves seven distinct phases: Getting started, deciding what's relevant, reading the studies, determining how studies are related, translating the studies, synthesizing translations, and expressing the synthesis. The method followed for the first six stages is described below, and this article is one means of expressing the synthesis. Meta-ethnography was selected as the most appropriate method of synthesis for this study because the explicit aim is to develop conceptual understanding beyond individual qualitative studies [25,27]. A methodology that is interpretative rather than aggregative [26] was necessary in order to gain deeper understanding of how interprofessional work is actually accomplished in healthcare through communication. The concepts identified in each study are the primary data for the synthesis, thus meta-ethnography relies on studies that report conceptual rather than purely descriptive findings [28]. Concepts are examined in relation to others within and across studies in a process of translation, similar to the method of constant comparison [27,29]. Some researchers express concern that synthesizing findings creates unacceptable extension of individual units of meaning beyond their particular contexts [27]. Meta-ethnography recognises these concerns and demands attention to the context of the original studies during the process of synthesis [25].

Phase one: Getting started

The initial research question was 'to explore communication between allied health professionals (AHPs) and nurses working in inpatient settings within interprofessional teams'. Scope was kept wide to increase the potential for studies from disparate clinical

settings to extend the concepts for consideration [24]. At the start it was not known which AHPs were the subject of research attention in relation to their interface with nurses, hence a broad definition of AHP was applied to include professions that are similarly positioned as separate from nurses or doctors in teams. Following the initial screening process the AHPs were narrowed to include the therapists most commonly located as treating members of interprofessional teams in UK inpatient hospital settings (physiotherapists, occupational therapists and speech and language therapists). The question was reframed as 'what are the influences on communication between therapists and nurses in inpatient interprofessional teams'; this allowed the studies that *implicated* communication through discussion of collaboration and role perception to be incorporated.

Phase two: Deciding what is relevant to the initial interest - inclusion decisions

Although systematic search techniques are not always relevant to meta-ethnography [30], it was considered necessary in this study because communication is often poorly articulated as a concept in interprofessional research. Search terms were identified through discussion with a subject librarian and the research team (table 1). The research was led by the first author, supported by active involvement of PhD supervisors (second and third authors) in various processes designed to enhance rigour. Six databases were searched on 06/05/15 for papers published in the English language (repeated three times, most recently on 26/02/18): Cinahl, Medline, Embase, AMED, Psychinfo and SocINDEX. No date limits were applied to retain openness to relevant historical information. Citation searching and hand searching supplemented the electronic search.

Insert table 1

Criteria for inclusion were that the paper reported qualitative findings about the interface between practicing AHPs and nurses in inpatient settings, even if this was not the key focus of the research paper. Research was sought from within practice rather than pre-registration education to reflect the experience of qualified professionals. The following exclusion criteria were applied: (1) No attention to the interface between AHPs and nurses, (2) Quantitative research, (3) Emphasis on pre-registration interprofessional education, (4) Not primary research (also excluded within this category were non-peer reviewed studies, systematic reviews and theses). The first author screened all retrieved papers by title and abstract. Papers were included at this

stage even where there was slight uncertainty, in order to mitigate the risk of a single researcher excluding important work too early. The first and second authors then independently conducted a full text review of the first half of the included papers and classified papers as 'include', 'exclude' and 'potentially include'. The third author independently reviewed discrepancies and the 'potentially includes' and inclusion decisions were made through discussion. The first author then independently completed full text review of the second half of the papers. All the papers that remained at the end of this process were discussed with the third author, resulting in further exclusions against the criteria. One additional paper from repeat searching on 25.02.16 was added and put through to the quality appraisal stage.

Phase three: Reading the studies and assessing quality

The final set of included papers were subject to a two-stage process of quality appraisal involving the three authors. The use of appraisal tools in evaluating the quality of qualitative research for inclusion in meta-ethnography has been much debated in relation to the status given to meaning [31], researcher disagreement about quality indicators [28], and the impact of editorial restrictions on the ability to demonstrate rigour [30]. For this study, a first stage of quality appraisal was carried out on papers that met the inclusion criteria, using the Critical Appraisal Checklist for Qualitative Research [32]. The purpose was not to eliminate studies, but to closely read and summarise the studies in terms of (1) Strengths and limitations against the CASP criteria (2) Study setting (3) Participants and (4) Methods.

CASP review of studies did not yield information that was helpful in determining quality for meta-ethnography, and a second stage of quality appraisal directed towards weighing the evidence was considered necessary [33]. Seminal research in this area indicates that consideration for conceptual clarity and interpretative rigour (also referred to as trustworthiness) is key to judging quality for this kind of synthesis [28]. The concepts contained within each study were listed and each paper was given a 'weight of evidence' score. This was accomplished through creation of a matrix, based on the ideas presented in a discussion paper by Toye et al. [28]. The purpose of this second stage was to exclude studies judged to be *insufficiently rich* in trusted concepts to be translated into one another [28,30]. The first author rated the papers as having *high, medium* or *low* weight of evidence by reviewing each paper against the questions on the

axes of the matrix: (1) Is there at least one clear translatable concept that addresses the research question? (2) Do you trust the interpretations? (table 2).

Insert table 2

A questionable rating for trustworthiness was not necessarily a judgment of the overall methodological quality of the study (and as such differs greatly from the CASP approach); rather it reflected trust in the concepts relevant to the research question that were intended for translation (i.e. specific to the task at hand). Being confident to trust the concepts was considered particularly salient because communication between therapists and nurses was often not the primary focus of the studies. It was also important that at a minimum, included studies could demonstrate *adequate* concept-data links for the relevant concepts [28]. The second and third authors independently rated a proportion (17) of the papers placed in the high, medium and low categories by the first author, and final agreement was arrived at through discussion. For example one paper [21] reported interesting discussion suggesting conflict at the boundary between physiotherapy and nursing, however following discussion it was agreed that the concept (in relation to communication) was not sufficiently developed. The links between the concept and the data presented in the paper were not strong enough for the paper to be translated into the other papers in the synthesis. Weight of evidence was thus judged to be low. All papers rated as low weight of evidence were excluded.

Phase four: Determining how the studies are related

Completion of phase four was eased by the systematic identification of concepts for translation during phase three by all members of the research team. The first author identified relationships between the concepts and organised into categories. The research team agreed to commence the translation process with five working categories, as detailed in the results section. Similar to previous studies [25,34], the categories were conceived as an organizing, rather than a thematic framework and formed the basis for the translation process.

Phase five: Translating the studies

Reciprocal translation is the process used for translating concepts that are broadly similar, and was the approach used for this study. The intention was to progress to a line

of argument synthesis if following reciprocal translation it seemed that an overarching picture of the whole could be constructed [26]. NVIVO 11 [35] was used to help organize the data and papers were coded against the categories agreed in phase four in chronological order, by year of publication, starting with the earliest study. The findings of each paper were revisited in full each time a new category was coded, in this way the concepts were considered within their original context, and then compared with those that followed through the process of translation. This resulted in an interpretative summary of five categories, also known as third order constructs [34].

Phase six: Synthesising translations

The first and second author independently reviewed the interpretative summaries and mapped relationships between concepts before coming together to compare interpretations. Through discussion it became apparent that a line of argument could be articulated that developed understanding of the picture as a whole. Potential contradictory evidence in each of the papers was systematically explored to test the line of argument and through discussion it was agreed that the line of argument remained strong.

Results

1. Included studies

The search strategy is detailed in figure 1. The initial search yielded 3986 papers; citation searching and known papers increased the total to 3994. Following screening by title and/or abstract 429 papers remained. The first and second author independently completed full text review on half of these papers before coming back together for discussion. Initial researcher agreement over papers to include was low; this was because communication was often not explicitly explored in the studies. For example many papers discussed roles or the tensions that arose around boundary work without extending into discussion about how professionals communicated to negotiate the boundaries. Disagreements about inclusion were resolved through independent review by the third author and discussion. Exclusion criteria were tightened for full text review by the first author of the second half of the papers: (1) Insufficient conceptual analysis or participant quotes in relation to communication (or collaboration or the relationship) between therapists and nurses, (2) therapists and nurses not identifiably distinct from each other, (3) inpatient data not distinctly reported from community data, and (4) Full

text not available through databases subscribed to by the university or the British Library. Uncertainties were resolved through discussion with the research team. The tighter criteria meant that some of the papers from the first half of the full text review may have been excluded if re-reviewed, however they were subject to repeat scrutiny in the quality appraisal process. At the end of this process, the 36 papers that remained were discussed with the third author, resulting in further exclusions against the criteria, leaving 27 papers for quality appraisal. This number was increased to 28 following repeat searching on 25.02.16.

Insert figure 1

Quality appraisal

Consistent with the experience of other researchers, as reported in France et al. [30], the time consuming process of quality appraisal against a checklist added little to the judgments needed to determine whether the papers were sufficiently rich in concepts to be translated into one another. The 28 studies were rated against the weight of evidence matrix and each paper was given a score. Following this process 18 papers were weighted as high (3) or medium (15) and went through to phase four to be translated; with 10 papers with low weight of evidence excluded. Papers rated as high weight of evidence are identified through an asterisk* in the tables.

Description of included studies

Summary information of included studies is shown in table 3. The studies were published across 18 years, from 1996 to 2014. They were conducted in the UK (11), Canada (4), Australia (2) and USA (1). Study settings included: Six rehabilitation wards, three stroke wards, seven acute/general medical wards, one acute mental health ward, and one spinal cord injury unit. Study designs included six interview studies, two observation studies, and ten studies that combined interview and observation, of which three were ethnographies.

Insert table 3

2. Synthesis

Five categories were identified: Formal information sharing practices, informal information sharing practices, conceptions of interdependence, perceptions of role value and team geography. The categories reflect the third order interpretation by the research team of the second order constructs identified by the authors of the papers [34]. Participant quotes were not included as primary data (as Toye et al. [36]). The contribution made by each paper to the categories was tabulated for transparency (table 4). Of note, three papers included concepts that contributed to all five categories (20,22,37), and two of the papers contributed to only one of the categories (38,39).

Insert table 4

Formal information sharing practices

Formal information practices discussed in the reviewed papers included meetings (team meetings, case conferences and ward rounds), use of medical records, and nursing handover. Team meetings are considered important to interprofessional practice (18,20,22,37,39,40), particularly for professionals who are infrequent visitors to a ward (22,41). However meetings vary in format, leadership, team climate and effectiveness (39) and their function can be ritualistic, with informal means better suited to meet professionals' information needs (40). Nurses' capacity to engage in meetings is impacted by their positioning; they frequently represent the work of their nursing colleagues, or enter and leave the meeting in succession in contrast to therapists who usually report on their own patients (37,39,41,42). Attending meetings can be difficult for nurses due to their continuous multiple caseload and time constraints (20,37,40) and they report feelings of discomfort and intimidation, and difficulties asserting counter views in this context (42,43). They also experience professional conflict with regard to *what* to present at the meeting, responding to non-verbal indicators (19,42) that information pertaining to emotional aspects of care is perceived as less clinically relevant than the contributions made by other professionals (19,41). Condensing reporting restricts their opportunity to demonstrate the expertise that is evident in nurse-to-nurse handover, for example the skills used to persuade a distressed patient to provide a urine sample (41). The consequences of nurses' disadvantaged position in meetings include abstention or withholding information (19,20,37,39,42,) and reduced opportunity to engage or develop relationships with other professionals in this context (41,42,43). Therapists who cover multiple wards or settings are also often absent from meetings, reducing their participation in both formal and informal opportunities for

decision-making (22). When verbal communication is not possible, therapists use their entries in the medical record as a substitute (22,37,44), despite acknowledging that they may not be read (22). However written communication is a poor substitute for verbal information because messages are less clear (36,44) or inaccessible at the time of need (22,37,45). Nursing handover is a formal means of information sharing that has relevance to interprofessional practice due to nurse shift working patterns and the potential for misinformation or 'chinese whispers' (43).

Informal Information Sharing Practices

Much of the work of interprofessional practice takes place outside of formal processes for information sharing, such as when professionals 'seize moments' to give or receive information as they pass in the corridor or at the nursing station (1,40,42). Therapists value information nurses derive from the bedside (1,42,44), and nurses are perceived as 'holders' of pieces of information, expected to act as intermediaries between patients, families and other professionals (42,43,44). In order for informal information sharing to arise, therapists and nurses need to occupy shared space (1,22,37,40), and each party needs to have the physical and emotional capacity to hear or give information at the opportune moment (1,22,37,40,43,46). Conflicting demands such as physical care and medication rounds impact on nurses' capacity for information sharing (37,43) and their ability to use information is limited where understanding of therapists' terminology is not shared (37,44,46). Interpersonal relationships and rapport influence the quality of communication (1,19,22,37,40,43,45), and the manner in which information is exchanged can create tension (19,37,40,43). Interprofessional communication is more effective when organizational level attention is paid to shared working and training (1,18).

Conceptions of interdependence

The interface between the work of nurses and therapists is discussed through reference to the role of nurses in integrating or 'carrying on' rehabilitation activities introduced by therapists (18,19,23,37,44-48). Therapist roles are boundaried by their particular specialisms and by their working hours, in contrast to nurses' continuous availability to patients (1,23,38,47). Because therapists are temporally boundaried, they depend on nurses' support for patients to be ready in time for therapy and for encouraging patients to do tasks in the manner they recommend (20,44,46). Nurses attempting to meet therapists' expectations can experience conflicts of time, ethics of care, and professional

autonomy (18,44-46); for example, watching patients struggle to perform tasks in a therapeutic manner can be experienced as uncaring (44). Tensions also arise out of unsatisfied expectations by nurses that therapists should reciprocate by sharing in 'nursing' tasks, such as toileting, when patients are in session with them (1,44). Therapists do sometimes help nurses with such tasks, however they have more agency to resist than nurses, justified through their specialist, temporally boundaried role (1,38).

Perceptions of role value

In studies in rehabilitation contexts, therapists were located as 'experts', positioning nurses as recipients of recommendations (19,22,23,38,46-48). Although nurses resist the framing of therapists as the only experts (19,37,47), the unboundaried nature of nurses' work creates challenges in asserting their own areas of specialty (23,41,46,47). The experience of being under-valued can lead nurses to hold back from full engagement (20,42); there is potential to expand their role when therapists aren't present (19), but making autonomous decisions to do things differently to that which has been advised invites criticism (19,37,48). Because therapists are positioned as the 'experts' in rehabilitation their sense of professional purpose is vulnerable if nurses don't recognize their role (22,45). However therapist researchers tend to suggest training or ways of demonstrating professional competence in response to nurses not doing as therapists advise (22,23), which may indicate some resilience to therapists' expert identity. There is recognition for the nurses' roles as intermediaries, referrers and creators of a supportive rehabilitation environment, but these tend not to be identified by either nurses or therapist as expert roles (19,22,37,44,46,47). The expert-generalist dichotomy is a source of tension and relates to a pervasive perception by nurses that therapists undervalue their professional contribution (19,37,45-47), and do not fully appreciate their additional obligations towards medical management (20,37). Therapists appear to value nurses' contribution in a constrained way, as a precursor to their specialist work (20,44,45,47).

Team geography

Nurses' ward presence is continuous (18,19,23,37,41,44), even during meetings they remain available to the ward (41). This gives them a certain ownership of the ward space (19) and can create cohesive ties amongst nurses (41). In contrast therapists are often based away from the ward and their work with patients is temporally boundaried (22,37). Being on the ward increases opportunities for sharing of information between

therapists and nurses (1,22,37,47), either through *ad hoc* conversations in liminal spaces such as corridors, or in formal meetings (40). Whether or not professionals will seek each other out when sharing space however relates to dispositions towards interprofessional working, which appear to be individual dependent (22,37) and require appreciation of interdependence (1). For therapists who are infrequent visitors to the ward, lack of presence makes it harder to establish the trust needed for nurses to value and incorporate the advice they offer (22).

Line of argument

The line of argument is that effective therapist - nurse communication is contingent upon need for information, capacity, opportunity and the quality of relationships. The contingencies are conceptualised in figure 2 as four inter-related domains, with quality of relationships occupying a central position. The process through which a line of argument has been developed is commonly under-reported in meta-ethnography [30], hence the inclusion of table 5 to illustrate points of substantiation from each paper that contributed to the line of argument, wherein each cross signifies one interpretation from the paper that supports the contingency.

Insert table 5

Insert figure 2

The quality of relationships: Need, capacity and opportunity are all related to the quality of relationships. The reviewed studies commonly referenced the importance of personal relationships but most directed limited interpretative attention towards why they matter. The central position of quality of relationships in the diagram illustrates the key role of this contingency; it influences, and is influenced by, the other three contingencies.

Need: Communication is more likely if parties see a need to give or receive information. Although the need to *give* information is central to the therapist role, nurses' need to *receive* the information that therapists offer is related to how they conceive their rehabilitation role and immediate need. For example information that is related to safe execution of physical care, such as the number of staff needed to transfer the patient to a chair, has a clear relationship to the job at hand, whereas more nuanced information from therapists may have a less evident fit with safe and expedient execution of nursing

tasks. Viewed through the lens of need, the literature provides little clarity with regard to what information nurses need to give and what therapists need to receive. This is important because when it is unclear whether and how tasks are interdependent it is difficult to see a purpose for interprofessional working [8]. Without need there is little clinical motivation for professionals to seek each other out, and reduced opportunities to develop good quality working relationships.

Capacity: Communication relies on having the capacity to attend to, hold, and use information in informal and formal interactions and in written information. Capacity is particularly influenced by the pressures of time, but also by shared understanding of terminology, the problem at hand and rationales for doing things in specified ways. To a limited extent therapists and nurses have potential to expand capacity, through reprioritization of other demands. However when time is pressured or when professionals feel undervalued, the decision to adjust priorities to meet the agenda of another professional, or attend team meetings, is likely to be influenced by perceptions of need for the information, the quality of relationships and the prevailing culture with respect to reciprocity, or give and take.

Opportunity: Opportunities to communicate are increased when therapists and nurses share space on the ward, in meetings and in training. Opportunity is more likely to result in engagement if there is a need to communicate or where there is a personal relationship, and when capacity is not overly constrained by other demands. The opportunity to share written information is dependent on timely access to documentation.

Discussion

This synthesis has afforded a valuable opportunity to bring interpretative attention to the process of communication as it is operationalized at the boundaries between therapist and nurse professional practice. It is remarkable how little has changed over the eighteen years covered by the reviewed studies, hence the importance of this new lens for making visible the work accomplished by communication and the contingencies that underpin effective communication. The contingencies of need, capacity, opportunity and the quality of relationships reflect both the transactional and interactional purposes of communication [13,49]. That is, purposes and processes of knowledge sharing need

to be considered within a relational context, hence the central positioning of quality of relationships amongst the contingencies.

The relational context tends to be reflected in the structures of teamwork, such as scheduled interprofessional meetings [18], or with respect to the opportunities created by the built environment for therapists and nurses to interact on the wards [1,2]. However much of what creates the relational context is less tangible, and this may be why relationships tend to be lightly conceptualized in the literature. By considering quality of relationships at the intersections of the contingencies of need, capacity and opportunity, this synthesis has made it possible to bring substance to some of the more abstract aspects of relational context, for example, at times of reduced capacity a personal decision by a therapist or nurse for whether or not to attend a team meeting is likely to be related to perceptions of genuine need to give and receive information, as well as perceptions of the relational environment, that is the respect and attention afforded to the information to be shared.

The transactional reason professionals share knowledge is to 'get the job done', and for therapists the job is not complete until their imparted recommendations are enacted [50]. Nurses tend to integrate recommendations into tasks on a 'time permitting' basis [17], unless dismissing a request would place the patient at risk [38]. Therapists are thus dependent on nurses, and this implies a relational imperative for them to create the conditions by which nurses are disposed to carry out what they advise. They need to demonstrate how their recommendations improve patient care, to encourage nurses to accommodate the request within their other demands. For the nurse at the bedside, the information needs for getting the job done tend to relate to what is needed for the current patients on the current shift. This creates a point of difference with the therapists (and more senior or specialist nurses) who retain responsibility for the same patient over their stay on a ward [21,50]; therapists convey information that is expected to travel across different nurses over several shifts [23]. This temporal distinction may underpin some of the tensions that have been reported in expectations of other. It also creates a challenge to relationship building, as each new encounter around patient management may be with a new nurse.

Information sharing in most UK NHS hospitals occurs in a context of staffing shortages for both nurses and therapists [51]. Nurses' role at the centre of patient care places

particularly high demands on their information load due to frequent interruptions of their work by multiple professionals [52]. There are thus limits to the extent to which therapists can negotiate with nurses to stretch capacity to meet their specialist agenda. Therapists also operate under capacity constraints, for example lists of patients awaiting assessment and treatment [1], less visible demands such as discharge planning [53], and covering multiple sites [22]. However there is perhaps scope for therapists to go some way towards helping nurses, particularly when patients have 'nursing needs' within a therapy session that therapists have the skills to address [38], and such acts of mutuality have potential to benefit the therapist nurse relationships [54].

The most positive study in the review indicated that a discursive culture was facilitated by the combination of organization-level commitment to joint working and learning, and therapists spending time on the wards [1]. Education and training are commonly suggested as ways of bringing therapist and nurse agendas into closer alignment, however preparing and attending training is impacted by capacity constraints, with nurses in particular reporting difficulties in leaving the ward to participate in training [55]. Training cannot therefore be expected to improve team communication without also considering the context of team functioning as a whole [22]. West and Lyubovnikova [8] distinguish between what they call 'pseudo-like groups' and 'real teams'; one of the characteristics of 'real' teams is that they apply regular reflexive attention to how they are performing. Reflexive review by teams of how they are communicating has the potential to help professionals better understand where they need to direct their attention if they want to improve interprofessional performance. Different teams require different levels of intensity of collaboration in relation to client complexity [56]. Hence the contingencies can be considered in specific ways in relation to the particular goals of particular teams. It is suggested that framing discussion around the contingencies of need, capacity, opportunity and quality of relationships creates more possibilities for change than the negative attention to aspects such as role value reported in much of the interprofessional literature.

Limitations

This study has responded to the call for more transparency in reporting in meta-ethnography [30]; quality appraisal decisions were made using a new weight of evidence matrix, and the contribution of interpretations to the synthesis were clearly reported. However a great deal of time was expended in this direction, and the benefits

of weighting evidence are not clear. Three studies were rated as having high weight of evidence, yet one of these [41] contributed very few interpretations (table 5), although this study's unique location in a mental health setting with therapists as 'visitors' did provide a valuable difference in perspective. Distinguishing papers according to how 'key' they are to the research question may have more merit as a criterion [36], however it was the process of the synthesis that highlighted which papers were key, thus making this alternative approach challenging to implement. The value of weighting of the papers for evidence was more clear cut in supporting identification of those papers that did not have sufficient conceptual clarity to be entered into the translation process.

A further limitation is that physiotherapists, occupational therapists and speech and language therapists were treated as a group in this study. Whilst the identified therapies share an orientation towards information giving, they operate under different ethical frameworks and professional hierarchies. Further research would be expected to reveal professional differences in the impact of the contingencies on communication. This could be extended to other professional interfaces, such as with medics or social workers. It would also be of interest to research the contingencies in other settings, such as primary care or nursing homes. A final limitation relates to membership of the research team, of which two are speech and language therapists by profession, and this is likely to have influenced interpretations. The third researcher is a health geographer who has worked in nursing as a researcher and educator for 20 years. Although she is not a trained nurse, her experience enabled her to provide challenge to therapist-centric viewpoints. Physiotherapist or occupational therapist researchers may have reached different interpretations.

Conclusion

This synthesis has generated new understanding of the specific role of communication in the interprofessional work of therapists and nurses, and the contingencies that underpin it. Effective communication between therapists and nurses depends on there being a genuine need to give and receive information for patient care, the capacity to attend to, hold, and use information, and opportunities to share space to enable communication to occur. Good quality relationships are the glue that holds these contingencies together. Conceptualising communication in this way creates a new structure that has the potential to support disciplinary engagement in creative thinking about how to improve collaboration for optimal patient care.

Declaration of interest

The authors report no conflicts of interest.

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Table 1. Search terms used in EBSCOhost (proximity operators adjusted for Ovid)

Interprofessional (abstract or title)	interprofessional or inter-professional or multidisciplinary or multi-disciplinary or interdisciplinary or inter-disciplinary or transdisciplinary or trans-disciplinary or team or teamwork* or team work*
Communication (abstract or title)	communicat* or collaborat* or joint work* or cooperat* or co-operat* or negotiat* or partner* or coordinat* or co-ordinat*
Therapists (all text)	speech W2 therap* or speech W2 patholog* or physiotherap* or physical therap* or occupational therap* or dietician or nutritionist or dietetic* or pharmacist or social work* or psycholog* or neuropsycholog* or neuro-psycholog* or allied health
Nursing (all text)	nurs*
Inpatient (all text)	hospital or ward or unit or inpatient
Qualitative (all text)	qualitative or interview* or ethnograph* or focus group or observation*

Table 2. Weight of evidence decision matrix

Trust for interpretations?	Clear translatable concept that addresses the question?	
	Concepts unclear or not translatable Trust the data LOW weight of evidence *One paper*	Clear, translatable concepts Trust the data HIGH weight of evidence *Three papers*
	Concepts unclear or not translatable Question trust LOW weight of evidence *Nine papers*	Clear translatable concepts Question trust MEDIUM weight of evidence *Fifteen papers*

Table 3. Main criteria of included studies

Paper	Setting	Data collection	Study aim
Waters 1996 [47]	Two rehabilitation wards. UK.	Interviews. Nurses (28), student nurses (6), auxiliaries (9), doctors (5), PT (3), OT (3), SW (2).	Explore staff perceptions of rehabilitation work, with particular emphasis on the role of the nurse.
Dowswell 1999 [23]	Elderly care rehabilitation ward. UK.	Participatory action research, interviews. Nurses (13) and PT (unspecified number).	Describe the development process and content of a training programme.
Pound 2000 [48]	Three wards across two hospitals. UK.	Observation (146 hours). Participants not listed.	Explore the less tangible aspects of the process of care missed using quantitative or survey techniques.
Dalley 2001 [46]	Two rehabilitation wards. UK.	Interviews. Nurses (8)	Explore how rehabilitation nurses perceive physiotherapists as rehabilitation team members.
*Long 2002 [44]	Six NHS Trusts (community and hospital). UK.	Ethnographic case studies, observation (330 hours), interviews and expert workshops. Case studies (49), staff (88) and carers (21).	Explore the contribution of the nurse in the multidisciplinary team.
Atwal 2002 [43]	Acute hospital. UK.	Interviews and non-participant observation. Nursing staff (19).	Explore nurses' perceptions of discharge planning, to identify interactions in multi-disciplinary team meetings and impact on discharge planning.
Pellatt 2005 [45]	Spinal cord injury unit. UK.	Ethnographic interviews. Nurses (14), doctors (5), OT (30), PT (5).	Identify perceptions of interprofessional roles and relationships within the rehabilitation team.
Pryor 2008 [37]	Five inpatient rehabilitation units. Australia.	Observation and interviews. Nurses (53 – of these 44 interviewed).	Generate a deeper understanding of contextual factors influencing nursing's contribution to inpatient rehabilitation units.
Miller 2008 [42]	Three general medical hospitals. Canada.	Interviews and observation (secondary analysis). Nurses (13), AHP (13), doctors (3), administrator (1).	Identify emotion work considerations for nurses working with an interprofessional context in hospital setting and how it facilitates or impedes nursing interprofessional care.
Seneviratne 2009 [20]	One stroke unit. Canada.	Ethnography: Observation (9 months) and interviews. RN (10), LPN (2), PCA (1), NP (1), PT (3), doctor (3). Of these 9 interviewed (unspecified profession).	Uncover nurses' perceptions of the contexts of caring for acute stroke survivors.
Burton 2009 [18]	Two acute stroke units. Canada.	Interviews. Nursing staff (12), SLT (1), OT (2), PT (3), SW (1), doctor (1).	Identify organizational factors that support delivery of high quality nursing care in stroke units.
Clarke 2010 [1]	Two stroke units. UK.	Ethnography: Participant observation (220 hours) and interviews. Registered Nurses (7), Assistants (7), OT (3), SLT (1), PT (3), dietician (2), ward clerk (1), ward manager (2), doctor (4), SW (4).	Understand and explain how teamwork was achieved and maintained in two stroke rehabilitation units.
Smith-Tamaray 2010 [22]	Non-metropolitan healthcare settings. Australia.	Interviews. SLP (8)	Develop an understanding of how SLPs work as part of a multidisciplinary team within the non-metropolitan setting.

Lewin 2011 [40]	Two medical wards. UK.	Interviews (individual and group) and observation (90 hours). Doctors/nursing/PT/pharmacists/SW/care coordinators (49).	Explore how professions 'present' themselves when working on wards, and how they use front and backstage spaces.
*Deacon 2013 [41]	Acute mental health ward. UK.	Observation (two years). RNs (18), NAs (16)	Explore the occupational activities of mental health nurses in an acute inpatient mental health ward.
Miller 2013 [19]	Two inpatient neurorehabilitaton units. Canada.	Non-participant observation and interviews. Nursing (11), OT (5), PT (5), SLP (6), SW (3), Recreational therapy (1), RN leader (4).	Examine neurorehabilitation nurses' intra- and inter- professional negotiative practices.
Apesoa-Varano 2013 [38]	Teaching hospital, different wards. USA.	Interviews and participant observation. Nurses (30), OT/PT/SLT (20), SW (20), Respiratory therapists (21) and doctors	Explore boundary work and the accomplishment of work among various groups claiming professional status at the bedside in the hospital.
Tyson 2014 [39]	Eight hospital based rehabilitation teams. UK.	Non-participant observation (12 meetings) and interviews. Nurses (4), PT (4), OT (4), SLT (2), psychologist (1), SW (1), stroke coordinator (1), stroke ward manager (1).	Explore how teams operate in day-to-day practice.
* Papers rated as high 'weight of evidence' **Key to abbreviations**: PT: Physiotherapist, OT: Occupational therapist, SW: Social worker, AHP: Allied health professional, RN: Registered nurse, LPN: Licenced practical nurse, PCA: Patient care attendant, NP: Nurse practitioner, NA: Nursing assistant, SLT: Speech and language therapist, SLP: Speech language pathologist.			

Table 4. Contribution of concepts from individual papers to categories

Papers	Formal information sharing practices	Informal information sharing practices	Conceptions of interdependence	Perceptions of role value	Team geography
Waters [47]			x	x	x
Dowswell [23]		x	x	x	
Pound [48]		x	x		
Dalley [46]		x	x	x	
*Long [44]			x	x	
Atwal [43]	x	x			
Pellatt [45]			x	x	
Pryor [37]	x	x	x	x	x
Miller [42]	x	x	x	x	
Seneviratne [20]	x	x	x	x	x
Burton [18]	x	x	x		
*Clarke [1]		x	x	x	x
Smith-Tamaray [22]	x	x	x	x	x
Lewin [40]		x	x		x
*Deacon [41]	x				x
Miller [19]	x	x	x	x	
Apesoa-Varano [38]			x		
Tyson [39]	x				
* Papers rated as high ‘weight of evidence’.					

Table 5. Papers with interpretations contributing to the line of argument

Paper	Quality of relationships	Need for information	Capacity	Opportunity	Total
Waters [47]	xxx	x	xx	x	7
Dowswell [23]	xx		xx		4
Pound [48]	x	x			2
Dalley [46]	xx	xx	xxxx		8
*Long [44]	x	xxx	xxxx		8
Atwal [43]	xx	x	xx		5
Pellatt [45]	xxx	xx	xx		7
Pryor [37]	xxxx	xxxx	xxxxxx	xx	16
Miller [42]	xx	xx	x	x	6
Seneviratne [20]	xx	xxx			5
Burton [18]	x	xxx	x		5
*Clarke [1]	xxx	xxx	xxx	xxx	12
Smith-Tamaray [22]	xxxx	xxx	xx	xxx	12
Lewin [40]	x	x	x	xxx	6
*Deacon [41]	xx	x	x		4
Miller 2013	xxxxxx	xx	x		9
Apesoa-Varano [38]	xx		xx		4
Tyson [39]	x	xx	x		4
* Papers rated as high ‘weight of evidence’					

Figure 1. Flow diagram of studies included in the review

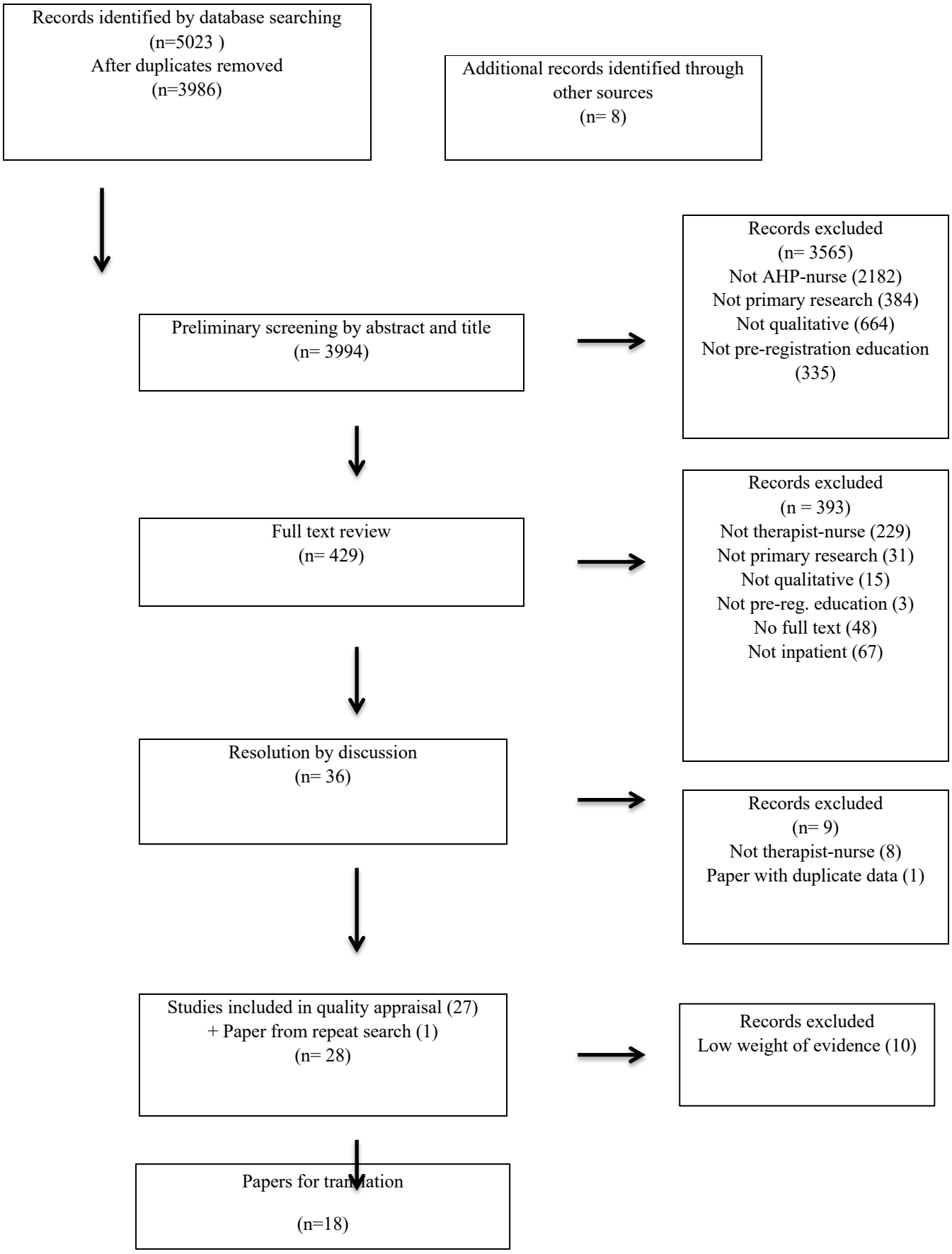

Figure 2. Contingencies for therapist-nurse communication