

REHABILITATION IN PRACTICE

Enhanced clarity and holism: the outcome of implementing the ICF with an acute stroke multidisciplinary team in England

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Abstract

Purpose: Although it is recommended that the ICF (International Classification of Functioning, Disability and Health) should be implemented to aid communication within multidisciplinary stroke services, there is no empirical evidence to demonstrate the outcomes of such implementation. Working with one stroke service, this project aimed to address this gap and sought to evaluate the outcomes of implementing an ICF-based clinical tool into practice. **Method:** Using an action research framework with mixed methods, data were collected from individual interviews, a focus group, questionnaires, email communications, minutes from relevant meetings and field notes. Thematic analysis was undertaken, using immersion and crystallisation, to define overall themes. Descriptive statistics were used to analyse quantitative data. Data from both sources were combined to create key findings. **Results:** Three findings were determined from the data analysis. The ICF (1) fosters communication within and beyond the multidisciplinary stroke team; (2) promotes holistic thinking; and (3) helps to clarify team roles. **Conclusions:** The ICF enhanced clarity of communication and team roles within the acute stroke multidisciplinary team as well as with other clinicians, patients and their relatives. In addition, the ICF challenged stroke clinicians to think holistically, thereby appropriately extending their domain of concern beyond their traditional remit.

Keywords

Health, ICF, implementation, stroke

History

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► Implications for Rehabilitation

- The ICF is a globally accepted framework to describe functioning and is in use in a variety of clinical settings. Yet, the outcomes of using it in clinical practice have yet to be fully explored.
- This study found that the ICF enhanced clarity of communication and team roles within an acute stroke multidisciplinary team and to others beyond the team, including clinicians, patients and their relatives.
- Using the ICF also challenged clinicians to think holistically about patient needs following a stroke.

Background

Organised and coordinated stroke care delivered by a specialist multidisciplinary team has been shown to save lives, lessen disability and improve quality of life, with effective communication seen as cornerstone [1,2]. A seamless transfer of care has been identified as one of 12 markers of a quality stroke service within England [3]. The ICF (International Classification of Functioning, Disability and Health) has been endorsed for use by multidisciplinary teams to aid communication within stroke care [4,5] and also by individual health care professions, e.g. occupational therapy [6]. This use of the ICF could enhance communication both within the team as well as during the transfer of care. Yet, clinicians still need to be convinced of

the worth of investing time and finances into adopting it into practice [7].

The success of the ICF depends on its uptake in clinical practice [8]. A literature review in 2009 concluded that the ICF was a globally accepted framework [9], yet the majority of the papers focused on explaining the conceptual framework or applying it to the management of data collection, rather than on any outcomes of using it in clinical practice with health care professions and multidisciplinary teams.

In 2011, a systematic review concluded that the majority of the 670 ICF papers examined were conceptual in nature [10]. Nonetheless, 173 papers focused on using it in clinical practice, albeit mainly anecdotal reflections, or applying it in theory. The ICF has potential to improve team communication [11,12]; enhance inter-agency communication [13,14]; help clinicians construct a broader view of disability [15–17]; and clarify team roles [18,19].

Empirical evidence regarding the effectiveness of using ICF-based clinical tools in practice is scarce [20].

Verhoef et al.'s study [20] of two multidisciplinary teams in rheumatology concluded that health care professionals held mixed opinions on the benefit of the implementation of the ICF; while staff satisfaction with team conferences increased in a day-patient setting, this effect was absent with staff in an inpatient setting. This study offers an insight into staff perceptions on the use of the ICF in clinical practice, but as the data were quantitative in nature, it is not known why staff held these opinions. Furthermore, the opinions from patients, carers and those beyond the multidisciplinary teams were not sought and these could have enhanced a fuller understanding of the outcomes. The research team concluded that the impact of introducing ICF-based tools should be studied at the level of individual teams, to gain a greater understanding of the effects of using it in practice.

A substantial project was undertaken over three years to evaluate the process and the outcome of implementing the ICF into clinical practice, with an acute stroke multidisciplinary team. A paper previously published in this journal focused on the process aspect. It concluded that in order to adopt the ICF into clinical practice, members of an acute stroke multidisciplinary team needed to adopt it to meet their own needs and adapt some of the terminology and the format of the ICF [21]. Following adaptations, the participants chose to adopt the ICF as a vehicle to develop a transfer of care report, an extract of which is presented in the first paper [21] and a full copy of which can be obtained by contacting the first author. This subsequent paper explores the outcome aspect.

Specifically, the aim of this paper representing the second part of the project is to explore the views from one acute stroke multidisciplinary service, including clinicians, patients and their families, on the outcomes of implementing an ICF-based report into practice.

Methods

A University Research Ethics Committee and the National Health Service Local Research Ethics Committee granted ethical approval and data were held in accordance with the contemporary data protection legislation.

An action research framework was selected for this project, the motivations for which have been previously outlined [21]. Action research is characterized by three phases: exploratory; innovatory; and reflective [22]. The focus of this paper results from findings identified within the reflective phase.

Previously, as an allied health professional within the stroke team, S.T. (the principle researcher) assumed an insider-outsider role, i.e. had inside knowledge and experience of working as a

therapist within the team but, now employed elsewhere, was outside of the daily routine and clinical work. But due to the democratic nature of action research, S.T. was also a participant.

Participants

There were two groups of participants within the service: the first comprised those within the acute stroke multidisciplinary team who were undertaking the action research project with the principle researcher; the second were from outside the acute stroke multidisciplinary team, who received the report as part of the transfer of care process.

All members of the acute stroke multidisciplinary team were invited to participate in the evaluation and they participated as much or as little as they wanted. There were two forms of participation; formal and informal. Formal participation included consenting to interview and completing a questionnaire. To this end, all clinical staff ($n = 43$) were invited by letter, sent in the internal post, to complete an enclosed questionnaire; a sample transfer of care report was also included. Informal participation took the form of discussions with the principle researcher, on the ward, which were subsequently recorded in the field notes. Informal participants on the acute stroke multidisciplinary unit had been involved in the on-going action research project and, working within an ethical framework, the principle researcher ensured all field notes did not identify the sources of the entries.

The second group of participants included former patients, informal carers and relatives, general practitioners and community therapists and were recipients of the report. They were invited by letter to complete a questionnaire. This questionnaire was posted with the transfer of care reports to the first 30 recipients, as a convenience sample, on leaving the acute stroke unit. Assumed consent was obtained on return of the questionnaires and a cover letter reassured people that participation was entirely voluntary and confidential. This questionnaire sought to gather opinions on the content, the layout and the timelines of the transfer of care report.

Table 1 details the participants from both groups who chose to engage in the formal data gathering processes.

Data collection procedure

Table 1 also outlines the data collection methods. Separate topic guides were developed and piloted for the focus group and the semi-structured interviews. The focus group was conducted first to provide a platform for debate and discussion on the outcome of the team project; the facilitator (S.T.) asked participants for their thoughts on the report. Some findings from the focus group were used to further develop questions within the semi-structured

Table 1. Data collection methods and the participants who chose to engage in the formal data collection procedures.

Data collection methods and participants who engaged in formal data collection procedures

Participants from within the acute stroke multidisciplinary team:

One focus group ($n = 4$) comprising dietician, speech and language therapists ($n = 2$), and physiotherapist

One-to-one interviews ($n = 3$) comprising clinical psychologist, occupational therapist, dietician (NB: the same dietician from the focus group who wished to expand upon some of the discussions from the focus group)

Questionnaire to staff within the team ($n = 8$) comprising nurses ($n = 3$); stroke coordinator; dietician; physiotherapists ($n = 2$); and occupational therapist

Minutes from Stroke Treatment for Every Person (STEP) team meetings: Representations from all members of the acute stroke multidisciplinary team were present at one or more STEP meetings

Email communications

Participant based observational field notes

Participants from outside of the acute stroke multidisciplinary team:

Questionnaire to recipients of the report ($n = 9$) comprising former patients ($n = 3$); relatives ($n = 3$); physiotherapist; and unknown ($n = 2$)

interview topic guide, in order to gain a greater depth of understanding on the issues raised. The interviews also allowed the opportunity for individual perspectives and reflection to be captured.

There were two questionnaires: one to staff within the acute stroke multidisciplinary team and one to recipients of the report. There were minimal differences in the two questionnaires; the one to the team was completed first and it asked for opinions on any further changes to the report, before it was implemented into practice, i.e. sent to other clinicians, patients and relatives. This was part of the final stages of the innovatory phase where the report was being developed to a point that the acute stroke multidisciplinary team wanted to pilot it in practice.

Both questionnaires comprised seven belief statements against which respondents were asked to rate their level of agreement using the following statements: strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. Four belief statements related to the content of the report and are relevant to this paper namely: (1) the report contains relevant information; (2) I found it useful; (3) It is written in user-friendly language; (4) it is easy to understand. Three belief statements asked for opinions on the timeliness of the report, the length and the layout. They are not reported here as they are not considered relevant to the debate on the outcome of using the ICF, rather as part of general service development. Respondents were also invited to write additional comments if they wished. The belief statements were defined by the STEP (Stroke Treatment for Every Person) team and the principle researcher.

Field notes from the researcher were handwritten in A4 notebooks. Minutes from working party meetings and all emails were securely stored electronically.

Consent was obtained from all participants for the focus group and the interviews, where a digital voice recorder was used. All recordings were transcribed verbatim. A copy of each transcript was sent to participants, as a form of member checking, to enhance the trustworthiness and transparency of the data collection process [23].

All interviews and the focus group were conducted at the hospital, in private rooms, at a time identified as convenient to the participants. The interviews lasted between 45 and 90 min duration and the focus group was approximately 140 min, including a lunch break.

Methods of analysis

Qualitative analysis seeks to provide knowledge and understanding of the phenomenon under study [24] and there are different approaches to undertaking it. In this project, thematic analysis was the method of choice because, its flexible and pragmatic approach [25] was congruent with the research aims and the nature of action research.

A conceptual model of ‘‘immersion and crystallisation’’ was adopted; this form of systematic and rigorous synthesis involves the researcher as a reflective participant who is immersed simultaneously in all of the data sets to crystallise overall findings [26]. In this project, the researcher sought to crystallise the opinions from the participants regarding the outcome of implementing an ICF-based clinical tool and thoughts on the tool itself.

Data analysis was undertaken by hand, as the preferred method of the principle researcher when handling a large volume of data. Each data set (e.g. each interview transcript) was read through twice, and initial data were grouped into sub-themes, with an overarching theme added to capture their essence. Units of analysis (i.e. chunks of raw data from various sources) were identified from the data in relation to each overarching theme. Operational definitions were used to link each overarching theme

and its associated sub-themes to the units of analysis (sources), see example:

Overarching theme	Initial sub-themes	Operational definition	Sources (Int = interview)
2. The ICF-based report aids holistic thinking	2.1 Thinking beyond and wider	The ICF helps to see all of the parts, see other people’s contributions and helps to think about patients in a different way.	Int 1 pg 4, 5 Int 2 pg 9, 10 Int 3 pg 3, 4 Focus gp pg 3 Field notes 01/08

The coding process, operational definitions, themes and audit trail were shared with experienced researchers to check the transparency of the process, which enhanced the trustworthiness of the data collection process [27].

The quantitative data from the questionnaires were analysed using descriptive statistics, as deemed appropriate given the number of respondents and the intended use, to inform the overall themes.

The findings were shared with the participants (who confirmed their authenticity), the STEP team, an audience of experienced researchers within the Centre for Research in Rehabilitation at Brunel University and the members at a local meeting of the Action Research Network.

Results

Twenty-three participants contributed to the formal data collection process. Three overall themes were determined as outcomes; these themes incorporated the quantitative data from the questionnaires during the crystallisation process. They revealed that the use of the ICF:

- (1) fosters communication within and also beyond the acute stroke multidisciplinary team;
- (2) promotes holistic thinking;
- (3) helps to clarify team roles.

Fosters communication within and also beyond the acute stroke multidisciplinary team

Participants within the team felt the ICF terminology resolved the issue of specialised uni-professional language and, while the potential for jargon remained, nonetheless it was felt the report would be clear to former patients. ‘‘... at least if we all use the same language really, ok, it might be slightly jargon but if we are all using it... it looks now quite clearer... And I think that as a patient you would at least have an idea about what each box is going to talk about.’’ (participant 3; focus group)

There were eight responses from the staff questionnaire and nine from the recipients of the report giving a combined response from both questionnaires of 23% ($n = 17$). The combined responses showed agreement that the ICF-based transfer of care report was useful (94%, $n = 16$), contained relevant information (94%, $n = 16$), was written in user-friendly language (100%) and therefore easy to understand (100%), thus supporting the opinions held by participants from the focus group. The one (same) recipient who disagreed that the report was useful and contained relevant information was a clinician from within the team. They gave alternative suggestions to the wording of two headings, which were incorporated into the final version of the report. As previously stated, the questionnaire to clinicians within the team sought to offer an opportunity for final refinement.

The role of the ICF to aid communication between multidisciplinary teams was a strong theme, for example: ‘‘When someone’s in an acute stage... it’s often back down to grass

roots washing and dressing. It's not so much focussed on back to work. But this will allow you to maybe help the next group of professionals plan a bit more towards that." (Interview 2)

Recipients of the report agreed. One community physiotherapist added they were "delighted to receive this detailed and helpful report" and a former patient commented "It was effective in showing . . . the progress made. The detail was of a good quality and very informative." (Questionnaire to recipients)

Promotes holistic thinking

Participants felt the use of the ICF within a team report challenged them to think more holistically as individual clinicians "You're not just thinking in your own area . . . it makes you think differently about a stroke or just makes you . . . aware of all the different aspects that are affected." (Interview 1)

Furthermore, citing the complexity of the framework, one participant suggested "not one person can cover it all, so you have to work as a team don't you to be able to work holistically. So I guess it reinforces that doesn't it, just by the nature of what it is." (Interview 3).

Therefore, by implementing the ICF in a way previously identified [21] and thereby owned by the participants, the framework and classification was able to change the thinking of clinicians and reinforce the requirement for collaborative working within stroke care.

Helps to clarify team roles

Whilst participants acknowledged the ICF did help to clarify team roles, it was also clear there needed to be flexibility when considering this issue; participants preferred to consider which profession took the lead in particular areas for individual patients rather than be dogmatic and over-protective of specific domains. "I feel there . . . should be scope for some flexibility in the report template e.g. the lead professionals could be interchanged where necessary, hence tailoring the report to each patient . . . it could be a nurse or dietician who acts with regard to products and technology." (Email 20/11/2007)

By using the ICF within a joint report, participants felt they could learn in more detail, what other professions did in relation to patient care. "You do know your own specialist bit much more, so I guess it does help to kind of learn what other people are doing as well . . . and what they contribute. So that's been really helpful." (Interview 3)

Discussion

Our findings provide empirical evidence to support the widely held view that the ICF can aid communication within clinical practice and, to our knowledge, the first evidence of its effectiveness specifically within stroke care to support the expert opinion captured in the clinical guidelines [5]. Also, new to the evidence base, as demonstrated by this project, is that the ICF can challenge clinicians, in a positive way, to help them think more holistically about patient needs following a stroke. The framework and classification allowed the holistic nature of acute stroke multidisciplinary team work to be communicated within and beyond the team. Furthermore, it promoted team work by clarifying team roles in relation to patient care.

Fosters communication within and also beyond the acute stroke multidisciplinary team

Over the past decade, anecdotal reflections (e.g. [11,12]) and expert opinion (e.g. [4]) have supported the use of the ICF to aid communication within clinical practice and this project provides empirical evidence to substantiate this belief.

However, in developing the ICF-based report, as previously reported [21], the participants needed to adapt aspects of the ICF language and the format for use, in order to achieve the outcome of effective communication within and beyond the team. And this was just in relation to the ICF wording; the participants chose to first focus on learning and using the terminology rather than develop a report that incorporated the numerical qualifiers, as the latter was deemed too complicated at that time. Therefore, this adaptation process must be remembered when drawing the conclusion that the use of the ICF, in its current format, aids communication.

Nonetheless, the ICF-based report provided a common language for use within the team and also facilitated communication of the patients' needs when referring on, an issue previously concluded within the literature [13,14].

Promotes holistic thinking

It has been argued that there are two key factors in effective rehabilitation: (1) understanding the complexity of the process, and (2) the multiple factors associated with participating in it [16]. Previous research has also concluded that the use of an ICF-based tool provides a more holistic view of disability [15], although the focus of that study was more the tool than the perceptions of the people using or receiving it.

Furthermore, an editorial for this journal hypothesised the use of the ICF to aid holistic thinking by encouraging health professionals to consider function and context in addition to the body level impact of, for example, stroke [17]. This project provided an additional dimension. By using the ICF as a structure for a team report, participants in this project had access to information which highlighted the complexity of the patients' needs following a stroke; this exercise demonstrated the need to work holistically to address them.

However, as the purpose of the report was for transfer of care (i.e. at the end of the episode of care), it could be questioned whether the team report was able to aid holistic working during the acute in-patient admission. But, as the report contained sections for completion on admission, as well as discharge, staff were already completing parts of the report early on in the patient stay. In addition, this project demonstrated how thinking in general, about patient needs, became more holistic and was not just limited to when the patient was being discharged. Therefore, implementing the ICF in one part of the patient pathway has changed the way clinicians think across the pathway and enabled a deeper level of learning that will remain, even when the artefacts which facilitated the change have been superseded [28].

Helps to clarify team roles

It has been reported that clinicians working in neurorehabilitation, in theory, felt the ICF had the potential to clarify team roles [18]. This project adds empirical evidence in support of that supposition. However, the authenticity and trustworthiness of this finding could be questioned, i.e. the level to which the finding was predetermined by the principle researcher's previous research. To this end, the principle researcher employed many strategies to maintain the quality and integrity of the data, including the use of member checking, the skills of reflexivity, and utilising support from a critical friend and two research supervisors. Other papers have also concluded the use of the ICF in clarifying team roles [13] or for that of an individual profession, i.e. physiotherapy [19].

Participants in this project were keen to stress the need for flexibility in the demarcation of roles, an opinion supported elsewhere in the way the ICF can communicate new trends

in practice, i.e. a shift in focus towards activity level interventions [19].

The findings from this project are unique to the participants within one acute stroke multidisciplinary service. This poses a challenge when seeking to generalise meaning to different teams and settings. The limitations of this have previously been debated [21]. However, there has been a call for studies at the level of individual teams in order to gain a greater depth of understanding on the effect of using the ICF in clinical practice [20]. It would be interesting to learn whether the findings of this project resonate with experiences from other clinical settings.

The findings from this project are part of a wider project that also sought to evaluate the process of implementing the ICF into clinical practice. The separation of the findings across two papers is somewhat artificial; the impact of engaging in the process of developing the report on the successful outcome cannot be ignored.

Conclusion

The outcome of implementing the ICF into clinical practice with an acute stroke multidisciplinary team showed that the ICF (1) fosters communication within and beyond the team; (2) promotes holistic thinking; and (3) helps to clarify team roles. Further studies could seek to evaluate the outcome of implementing the report with different clinical teams who were not part of the development process, and the outcome of implementing the ICF in different clinical settings, e.g. the community.

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Declaration of interest

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