Implementation of a Sexuality Interview Guide in Stroke Rehabilitation: a feasibility study

Louis-Pierre Auger[1,2], Evelina Pituch[1,2], Johanne Filiatrault[1,3], Frédérique Courtois[2,4], Annie Rochette[1,2]

1: School of Rehabilitation, Faculty of Medicine, Université de Montréal, Montreal, Qc, Canada.

2: Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal, Montreal, Qc, Canada.

3: Research center of the Institut universitaire de gériatrie de Montréal, Montreal, Qc, Canada.

4: Department of Sexology, Faculty of Human Sciences, Université du Québec à Montréal, Montreal, Qc, Canada

Corresponding author: Louis-Pierre Auger, OT, doctoral student in rehabilitation sciences at Université de Montréal. Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal, Institut universitaire sur la réadaptation en déficience physique de Montréal – Lindsay pavilion, 6363 chemin Hudson, Montreal (Qc), Canada, H3S 1M9. E-mail: louis-pierre.auger@umontreal.ca

Abstract

Word count: 198

Background: Although people who sustain a stroke can experience sexual difficulties, few address them during rehabilitation.

Objectives: Explore the feasibility of implementing a Sexuality Interview Guide (SIG) in stroke rehabilitation and describe the factors perceived as influencing its implementation.

Materials and Methods: Using a mixed research design, the SIG was implemented for four months in a rehabilitation hospital. The frequency with which clinicians addressed sexuality and their level of comfort pre-post implementation was measured. Perceived factors influencing implementation were determined through individual interviews and focus groups with five stroke clients, 15 clinicians and a coordinator. A paired-specimen Wilcoxon test was used to explore differences in pre- post-level of comfort. Qualitative data was analyzed by two independent evaluators using thematic analysis.

Results: The SIG was used 28 times and clinicians' level of comfort in addressing sexuality improved significantly ($p = 0.001$). The factors perceived as influencing implementation were: the acceptability of the SIG, the individual characteristics, the context of the rehabilitation hospital and the implementation process.

Conclusion: This study showed that the SIG can be used in stroke rehabilitation and that, with sufficient financial and human resources, and training for clinicians, it would be feasible to implement it in usual care.

Keywords: sexuality, stroke, knowledge translation, implementation, mixed methods, rehabilitation

Main text

Word count: 5172

Introduction

Stroke is known to be the third leading cause of disability worldwide (Feigin, Norrving, & Mensah, 2017), affecting more than 13.7 million persons each year (World Stroke Organization, 2019). Stroke-related disabilities can affect participation in activities of daily living (Desrosiers et al., 2006; Rozon & Rochette, 2015), including sexual activities (AOTA, 2014; Grenier-Genest, Gerard, & Courtois, 2017). A cross-sectional study conducted among 192 people who sustained a stroke found sexual difficulties to be present in about 50% (Korpelainen, Nieminen, & Myllyla, 1999). Sexual dissatisfaction, erectile dysfunction or insufficient vaginal lubrication were some of the difficulties reported. Moreover, sexual dissatisfaction has been associated with an increased risk of depression and poor quality of life after a stroke (Kim, 2008; Stein, Hillinger, Clancy, & Bishop, 2013). Considering the proportion of stroke survivors with sexual difficulties, the negative psychosocial impact of these difficulties and the fact that survivors place sexuality among their rehabilitation priorities (Stein et al., 2013), it is important to address this topic during post-stroke rehabilitation. Moreover, stroke rehabilitation guidelines in Canada (Mountain et al., 2020), the United States (Winstein et al., 2016) and Australia (Stroke Foundation, 2019) recommend offering all stroke survivors an opportunity to discuss sexuality with a clinician during their rehabilitation. However, few people actually have such an opportunity (McGrath, Lever, McCluskey, & Power, 2018; McLaughlin & Cregan, 2005). This shortfall can be explained by multiple factors, several of which can be traced to rehabilitation clinicians (Dyer & das Nair, 2013; Helland, Garratt, Kjeken, Kvien, &

Dagfinrud, 2013; Hyland & Mc Grath, 2013). A recent study conducted among seven Canadian occupational therapists working in physical rehabilitation identified the lack of clinical tools and knowledge related to sexuality as being among the main explanatory factors for the challenges of including sexuality in rehabilitation practice (Lepage, Auger, & Rochette, 2020), which is also supported by a systematic review on the subject (Dyer & das Nair, 2013). Four studies have shown that access to sexuality related services can lead to improvement in sexual satisfaction and frequency of sexual activities (Ng, Sansom, Zhang, Amatya, & Khan, 2017; Sansom, Ng, Zhang, Khan, & Couldrick, 2015; Song, Oh, Kim, & Seo, 2011; Vajrala, Potturi, & Agarwal, 2019). However, none of these studies addressed the implementation of such services in a stroke rehabilitation setting and, to our knowledge, only Guo and collaborators (Guo et al., 2015) have done so to date. Their action-research project conducted in a stroke rehabilitation facility led to an improved offering of services related to sexuality via several implementation strategies, including a reminder system and a script for interviewing clients about such issues. As a result, the number of stroke clients who had the opportunity to discuss the subject with a clinician during their inpatient rehabilitation increased from 0% to 80% over a 10-month period (Guo et al., 2015). This study shows that it is feasible to influence the access to services related to sexuality, but also that there is a need to develop and implement innovative practices regarding sexual rehabilitation after a stroke.

The objective of the present study was to explore the feasibility of implementing a Sexuality Interview Guide (SIG) in stroke rehabilitation, and to describe the factors perceived as influencing its implementation according to clients, clinicians and a coordinator.

Materials and Methods

Research Design

A mixed (Pluye & Hong, 2014), predominantly qualitative, design was used for this study. Feasibility was assessed using the five categories proposed by Orsmond and Cohn (2015) that answer the question "Can it work?": Recruitment and sample characteristics, procedures and measures, intervention acceptability, resources and ability to manage study and preliminary evaluation of participants' response. Quantitative data was collected to provide a brief portrait of the study participants and the context in which the interview guide was implemented. The qualitative data aimed to provide a thorough description of the participants' perspective regarding the factors that could influence the feasibility of implementing the interview guide in their clinical setting. This study was approved by a research ethics board from the university with which the first author is affiliated. All participants in the study provided informed consent and were free to withdraw from the study at any time.

Sexuality Interview Guide

The purpose of the Sexuality Interview Guide (SIG) is to better identify clients who wish to address sexuality during their rehabilitation after a stroke. The guide is based on interview scripts from previous studies (Guo et al., 2015; Song et al., 2011) and founded on the PLISSIT model (Annon, 1976). The SIG was pretested by two clinicians during one month with two clients and then improved, prior to this official implementation study. A thorough description of the SIG, using the Template for intervention description and replication (TIDIeR) checklist (Hoffmann et al., 2014), is shown in Table 1.

Table 1: Description of the Sexuality Interview Guide (SIG) Based on the Template for Intervention Description and Replication (TIDieR) - (Hoffmann et al., 2014)

Why	The SIG was designed to help rehabilitation clinicians identify clients who may need to address sexuality in their rehabilitation. It was developed for use with all stroke clients undergoing rehabilitation. The SIG builds on previous work examining post-stroke sexuality (Guo et al., 2015; Song et al., 2011), an intervention model used in the field of sexology, PLISSIT ("*Permission, Limited Information, Specific Suggestions, Intensive Treatment*" (Annon, 1976)) and tacit knowledge of research team members and study participants.
What	The SIG consists of four statements accompanied by a script to guide clinicians in conducting a semi-structured interview with the client. The SIG form and supplementary material are available in English and French.
Administrative Procedure	The semi-structured interview associated with the SIG consists of four steps: 1) Ask the client for permission to discuss sexuality; 2) Normalize the presence of sexual difficulties following a stroke; 3) Offer post-stroke clients examples of sexuality-related issues, or concerns that they may have; 4) Ask the client if they want sexuality to be part of their rehabilitation. If the client answers "yes" in step 4, the SIG is considered positive. When an SIG result is positive, clinicians have the option of assessing and intervening if the sexual difficulties reported are part of their field of practice, or can refer the client to another health professional who will be able to address the sexuality issue with the client. The SIG was designed to be systematically integrated into the clinical practice of all clinicians in the rehabilitation hospital's neurology program, so that all stroke clients would have at least one opportunity to address sexuality during their rehabilitation.
Who provided	The SIG can be used by clinicians in all disciplines involved in stroke rehabilitation.
How	Face-to-face, individually, during rehabilitation follow-up.
Where	The semi-structured SIG interview was conducted in person at the rehabilitation hospital.
How much	The SIG is estimated to take between five and ten minutes to administer.

* Items 9 to 12 in the TIDieR (Hoffmann et al., 2014) did not apply because the SIG is not an intervention.

Theoretical Frameworks

Two theoretical frameworks were used to guide the design of the study and the data analysis: the *Knowledge to Action* (KTA) (Graham et al., 2006) Framework and the *Consolidated Framework for Implementation Research* (CFIR) (Damschroder et al., 2009). The KTA Framework (Graham et al., 2006) focuses on the process of knowledge translation (Nilsen, 2015). It is composed of two cycles, *Knowledge Creation* and *Action*. In the present study, we refer to all stages of the KTA's *Action cycle* except *Sustain knowledge use* (see Table 1). The CFIR (Damschroder et al., 2009) was used to describe the factors perceived as influencing implementation of the SIG. The CFIR includes five domains: the intervention, the inner and outer settings, the individual characteristics and the process by which the knowledge is implemented.

Population

The study was conducted in collaboration with the neurology program of a Canadian rehabilitation hospital, where the majority of clients have sustained a stroke. The staff includes 81 clinicians: occupational therapists (n = 11), physical therapists (n = 14), speech language pathologists (n = 9), social workers (n = 3), nurses (n = 26) and attendants (n = 18). The hospital offers rehabilitation services to post-stroke clients in both inpatient (i.e. 360 clients per year) and outpatient (data not available at the time of the study) settings.

Recruitment

Clients, clinicians, and coordinators in stroke rehabilitation were targeted and recruited by convenience sampling. To be included in the study, clinicians were required to work with stroke clients and be willing to use the SIG in their clinical practice. No exclusion criteria were applied for clinicians or coordinators. Once clinicians were

recruited and used the SIG, potential inpatient and outpatient stroke participants were identified. Clients with severe cognitive impairment or severe aphasia could participate in the sexuality interview but were excluded from the study, as their ability to provide free and informed consent could be affected. In order to collect a variety of points of view, at least five clinicians and three clients were targeted for recruitment into the study.

Implementation Strategies

The implementation strategies were chosen based on the suggestions of the clinicians who participated in the SIG pre-test and the needs raised by the clinicians during the implementation period. Implementation strategies are described in Table 2. The "level", or targeted dimension, of the strategy refers to the five CFIR domains (Damschroder et al., 2009). The class of implementation strategies, or goal, was established following the criteria of Leeman and collaborators (2017). Some strategies were offered simultaneously but are presented separately in Table 2, as they had distinct goals.

Table 2: Implementation Strategies Used during the Study

Implementation Strategy	Practical Application	Group*	Class**
Clinical Reasoning Workshop	Group reasoning through a case history of a fictional post-stroke rehabilitation client who wants to address sexuality during rehabilitation (positive SIG)	Clinicians	Capacity building
Clarification of Referral Procedures to Sexuality Professionals	During the study, clinicians had the option of referring clients to specialized sexology services. To do this, they had to contact the coordinator of the neurology program, who had the information needed to make the referral.	Clinicians and the Inner Setting	Integration
Design of post-stroke sexuality information packages	For each of the targeted disciplines, information packages contained educational leaflets on the impact of stroke on sexuality, pictorial fact sheets illustrating adapted sexual positions, and a non-exhaustive list of clinical resources dedicated to sexuality in the city where the study was conducted.	Clinicians	Dissemination
Clinical Consultations on Sexual Rehabilitation	Clinicians could contact the lead author, an occupational therapist with expertise in post-stroke sexual rehabilitation. He was available daily and offered coaching by email, telephone or in person depending on the clinician's preference. The consultations focused on assessment and professional intervention according to the clinician's discipline.	Clinicians	Capacity building
15 lunch-hour supervision meetings	During these midday meetings, clinicians shared their experiences and questions about their post-stroke clients, and the group discussed the best procedures to use with these clients. These meetings were flexible and could cover any topic deemed relevant by the clinicians.	Clinicians	Capacity building, Implementation Process
E-mail reminders	E-mails were sent at least twice a month. For example, a message might be sent as a reminder about midday meetings, but also served as a reminder to clinicians to use the SIG.	Process, Clinicians	Process

Setting monthly goals	In addition to the e-mail reminders, the first author and participants together set monthly goals of how many times the SIG would be administered.	Process, Clinicians	Process
Modifying the SIG	The SIG was modified to better suit the needs of the clinicians. For example, a description of the tasks to be performed by clinicians following administration of the SIG was added to the back of the SIG form. Another addition was a section where the clinician could comment on the suspected nature of the sexual difficulties (physical, psychological or medical) in order to facilitate a referral process.	Knowledge to translate, clinicians and clients	Integration
Placing SIG forms in strategic locations	One clinician was assigned per discipline to ensure that the SIG forms were stored in a location easy for clinicians to access and which corresponded to their work habits and environments. For example, outpatient clinicians placed the forms near the client rehabilitation records.	Process, Clinicians	Integration
Conference on post-stroke sexuality	In March 2018, a conference was held at the rehabilitation hospital. It was open to all clinicians, and focused on the impact of stroke on sexuality and Canadian Best Practice recommendations regarding stroke rehabilitation and sexuality (Lanctôt et al., 2019). The research project was also presented to the clinicians who attended the conference.	Clinicians	Dissemination
Individual training on the use of the SIG	All the clinicians participating in the research project received training about the SIG and how to administer it. Strategies and advice were also shared during these training sessions, and clinicians could ask questions. The training sessions were part of the midday supervision meetings.	Clinicians	Capacity building

* According to the *Consolidated Framework for Implementation Research* (Damschroder et al., 2009)
** *According to the criteria of Leeman and collaborators (2017)*

Data collection

Data for each participant were collected at a single measurement time: in the case of the clinicians and program coordinator, at the end of the four-month implementation period, and for clients, at the end of their rehabilitation treatments. A logbook was completed by the first author throughout the study to record important project events, the process of implementation as well as personal reflections and experiences related to the factors influencing the implementation.

Implementation data

SIG Forms completed by clinicians were collected to note the number of interviews completed and their outcomes, i.e., the proportion of clients who agreed or disagreed to include sexuality in their rehabilitation. *Medical records* of stroke clients interviewed were consulted to collect sociodemographic and health data: Age, sex, marital status, stroke localization and number of days after the stroke at the time of the interview. A *sociodemographic and professional questionnaire* was completed by clinicians and the coordinator before they participated in individual interviews or focus groups (see Table 4). These questionnaires also collected 1) the clinicians and the coordinator's perceived level of comfort regarding addressing sexuality, using a visual analogic scale (0: no comfort to 10: fully comfortable), and 2) their self-reported frequency of addressing sexuality in their practice prior to the study using a four-point Likert scale (never, rarely, often, always). The self-reported frequency of addressing sexuality in practice prior to the study and the SIG forms completed were used, respectively, as pre and post estimates of implementation of the SIG.

Factors perceived as influencing implementation

Three *Focus groups* were conducted with 14 of the 15 clinicians who took part in the study, each including four or five participants. One clinician was unavailable and agreed to be interviewed individually at a more convenient time. Each focus group was moderated by two facilitators (the first and either the second or last author), held during the clinicians' lunch period and lasted 45-60 minutes. The audio content was recorded digitally, and interview guides were developed from a non-exhaustive review of the

literature on knowledge translation in collaboration with the last author, an experienced knowledge translation investigator. *Individual interviews* were conducted with the five stroke clients included in the study, the neurology program coordinator and one clinician. The procedures for developing interview guides and audio recording were the same as those used for the focus groups.

Data Analysis

Quantitative analysis

The data collected with the completed SIG forms, medical records and sociodemographic and professional questionnaire were analyzed descriptively by means and standard deviations or frequency and percentages according to the type of variables. The average level of comfort of clinicians in addressing sexuality in clinical practice was measured using a 10-point visual analog scale. Pre-post implementation scores were compared by a paired-specimen Wilcoxon test, with the level of statistical significance set at $p < 0.05$.

Qualitative Analysis

Recordings of the individual interviews and focus groups were transcribed verbatim. These transcriptions were then imported into *QDA Miner 5*© software for ease of coding. Using an integrated knowledge translation paradigm (Gagliardi, Berta, Kothari, Boyko, & Urquhart, 2016), two evaluators (the first and second authors) read each verbatim multiple times to acquire a global comprehension of the participants' discourse, and then coded more than 10% of the total verbatim independently. For this process, they followed the thematic analysis method combined with a semi-deductive approach (Miles & Huberman, 1994), by using a preliminary coding scheme based upon the CFIR categories (Damschroder et al., 2009) that could be improved by adding codes emerging from data.

Once the two evaluators completed this partial coding, they used a consensus-based approach to review the codes associated with the verbatim' segments, to standardize their understanding of each code and to improve the coding scheme. Afterwards, the codes were combined in themes and sub-themes, which were categorized 1) according to the degree of importance the participants attached to each, 2) in light of the repetition of themes in the participants' statements and 3) to take into account cases where the content echoed the logbook observations. This led to a preliminary thematic analysis and an improved coding scheme. Once the two evaluators' understandings were shared and reached a consensus, the first author coded the remaining verbatim using the same semi-deductive approach and the improved coding scheme. After completion of the coding, the first and second authors used in-person meetings to review the analyzed data in order for the themes to be as representative as possible of the participants' discourse. The thematic analysis was also deepened by using data from the logbook in order to make sure that the analysis included the first author's perspective that was noted during the implementation. Given the total number of interviews, a horizontal analysis of verbatim was conducted to highlight recurring main themes (Paillé & Mucchielli, 2016) and the presence of similarities and differences in participants' statements. Therefore, during the in-person meetings dedicated to review the thematic analysis of the coded verbatim, the evaluators focused on similarities, i.e. recurrent themes among some (e.g. between clinicians) or all participants, and differences, i.e. on themes that were either opposite between group of participants (e.g. clients and coordinator) or absent. In-depth analysis of each verbatim, or vertical analysis (Paillé & Mucchielli, 2016), was made in another article dedicated to the priorities and needs of clients and clinicians (Auger, Pituch, Filiatrault, Courtois, & Rochette, 2020).

Results

Description of the sample

The neurology program coordinator and 18 clinicians were involved in the implementation of the SIG, which was used with 28 stroke clients. Five of these clients (three female and two men) who wanted sexuality to be addressed in their rehabilitation after they received the SIG, agreed to participate in the study for an individual interview (see Table 3). Their average age was 67.0±4.8 years. Three clients had sustained a right hemispheric stroke and two a left hemispheric stroke.

Of the 18 clinicians (see Table 4), one speech language pathologist withdrew during the implementation period and two occupational therapists did not participate in the interviews due to scheduling issues or a change in clientele. The average age of clinicians (n=15) and the coordinator (n=1) was 35.0±9.8 years and 14 out of 16 were female. On average, clinicians had 10.0±9.3 years of professional experience and 7.5±9.2 years of specific experience with post-stroke clients. Neither the clinicians nor the coordinator (0/16) reported that they had “often” or “always” addressed sexuality with their clients prior to this implementation study.

Table 3: Sociodemographic and health data of clients who participated in the interviews

Client	Age	Sex	Marital Status	Type of Stroke	Time elapsed since stroke (days)*	Inpatient or outpatient follow-up
#1	60	M	Married	Left cerebellar stroke and posterior cerebral artery stroke	144 days	Outpatient
#2	75	F	Single	Right cortical ischemic stroke (middle cerebral artery)	110 days	Inpatient
#3	67	M	Single	Frontal lobe stroke and left occipital stroke	176 days	Outpatient
#4	66	F	Non-married couple	Right temporal lobe infarction and acute frontal right insular lesion	92 days	Inpatient
#5	67	F	Married	Left middle cerebral artery stroke	118 days	Outpatient

*At the time of the individual interview, each of which was conducted before discharge from inpatient or outpatient rehabilitation.

Table 4: Sociodemographic and professional data of clinicians (n = 15) and coordinator (n = 1)

Participant	Age	Sex	Profession	Years of Experience	Years of experience with stroke clients	Usually mentioned sexuality before this study	Level of comfort in approaching sexuality pre-implementation (/10)*	Level of comfort in approaching sexuality post-implementation (/10)*	Number of SIG completed N
Clin 1	62	M	Psychologist	31	30	Rarely	7.5	7.5	2
Clin 2	30	F	Occupational therapist	7	6	Rarely	5	6	0
Clin 3	32	F	Speech language pathologist	5	5	Rarely	6	9	1
Clin 4**	30	F	Physiotherapist	6	6	Never	1	3	1
Clin 5	33	F	Occupational therapist	6	5	Never	4	4	3
Clin 6**	29	F	Occupational therapist	2	1	Rarely	4	6	2
Clin 7**	35	F	Physiotherapist	13	4	Rarely	2	4	2
Clin 8**	38	F	Physiotherapist	10	3.5	Never	1	5	2
Clin 9**	55	F	Speech language pathologist	31	31	Rarely	8	9.5	4
Clin 10	25	F	Occupational therapist	1.5	1	Never	4	8	0

Clin 11	31	F	Physiotherapist	10	5	Rarely	4	7	1
Clin 12	31	F	Physiotherapist	4	2.5	Rarely	4	5.5	0
Clin 13	29	F	Physiotherapist	2	1	Never	5	8	2
Clin 14	30	F	Speech language pathologist	4	3.5	Never	7	8	1
Clin 15**	38	F	Occupational therapist	18	7	Rarely	5	7	7
Coordinator	33	M	Coordinator and Occupational therapist	10	7	Rarely	2	4	0

Clin = Clinician

* According to a visual analogue scale. 1 = not at all comfortable, 10 = perfectly at ease

** These clinicians worked with the outpatient clientele. The others worked with the inpatient clientele.

Implementation data

The SIG was administered 28 times (10 in inpatient and 18 in outpatient settings) by the clinicians during the implementation period (see Table 4). Of the clients who completed the SIG, 15/28 (53.6%; n = 11 outpatient clients and n = 4 inpatient clients) agreed to include sexuality in their rehabilitation. The median number of use of the SIG per clinician was 2, with a range from 0 to 7. The level of comfort perceived by clinicians and the coordinator in addressing the topic of sexuality before (4.4/10 ± 2.1) and after (6.4/10 ± 2.0) implementation of the SIG increased significantly (p = 0.001).

Factors perceived as influencing implementation

The factors perceived as influencing the feasibility of implementing the SIG were grouped under four major themes (see Table 6): 1) *the acceptability of the SIG*, which included the subthemes: format of the SIG and therapeutic relationship; 2) *the individual characteristics*, including the sub-themes: client characteristics, clinicians' characteristics and factors related to clinical practice; 3) *the context of the rehabilitation hospital*, with the sub-themes: lack of resources, management support and institutional culture promoting security and 4) *the implementation process*, with the sub-themes: changing practices, the people involved and implementation strategies.

<u>Acceptability of the SIG</u>

Format of the SIG

The format of the SIG was appreciated by clinicians and the coordinator, who viewed it as quick to use and supportive of their clinical reasoning: "*It's an instrument* [the SIG] *that is basically quite simple...*" [Coordinator] and "*It allows you to scan a little*

more [than a non-structured interview]*, when the questionnaire is written and addresses the different points*." [Clinician 9]

Therapeutic relationship

Therapeutic relationship was important for both clinicians and clients, who felt it was necessary for having a discussion on the topic of sexuality: "*I would say that for the implementation, what helped me is that I already had a trusting relationship with my patient* […] *For sure, if it had been in the first week* [of the patient's rehabilitation]*, I wouldn't have done it … for short stays…*" [Clinician 11] and "*So it seems that it's the person themselves that is more important than their profession.* [Interviewer] *Yes, that's it, yes.*" [Client 4]

<u>Individual characteristics</u>

Client characteristics

<u>Age:</u> Clinicians were more likely to use the SIG with younger clients (i.e., under 65 years old), feeling that it was less relevant to approach the dimension of sexuality with older clients: "*But you know, speaking about sexuality with a 95-year old who lives alone...it's true that it's subjective in a way, but that...well, I wouldn't even think about it.*" [Clinician 3]

<u>Communication disorders:</u> Clients with these disorders were less likely to be interviewed since sexuality was perceived by clinicians to be too complex to address: "*I have clients who have serious challenges... um, communicating, so even if I ask a question, I am not sure what kind of response I'd get...afraid of opening that door* [sexuality] *and then not understanding if the response is positive....*" [Clinician 12]

Cognitive problems: Their presence (e.g., loss of inhibition, anosognosia) led clinicians to worry that the client could misunderstand their intentions and sexualize the therapeutic relationship: "*Maybe we won't think about it* [Using the SIG] *because we have our hands full trying to...reframe them or get them to be more self-aware.*" [Clinician 5].

Cultural background: Clinicians expressed uncertainty about the norms and customs related to relationship and sexuality for clients with a different cultural background than theirs: "*In a cultural context* […] *where the roles in a couple, the way of seeing things...that I'm not familiar with, really then,* […] *I wasn't comfortable doing it*" [Clinician 9]

Marital status: From the clinicians' perspective, it is more relevant to address sexuality with clients who were in a relationship: "*When they are single and older it's as if I didn't dare … I don't know, I had the impression that I was getting into something that, in the end, I didn't find necessarily useful for them* [clients] *or that they were going to be uncomfortable speaking about that...*" [Clinician 8]

Clinicians' characteristics

Expertise in sexuality: Clinicians did not feel sufficiently trained or equipped to carry out evaluations and interventions related to sexuality once the SIG had been completed, which led them to be reluctant to use the SIG: "I*n your respective training, in occupational, physical and speech therapy, did you get any relevant training? Not at all, eh?* [Interviewer] *No.* [Clinician 11] *No.* [Clinician 13] *Zero.* [Clinician 14] *No.*"

[Clinician 12] and "*It's a guarantee that if our clinicians say "I don't know how... I don't what to do after..." They won't even ask the question* [use the SIG]. *It's...they will even judge that this is not appropriate because they aren't able to respond to that need.*" [Coordinator]

Level of comfort: Comfort associated with sexuality was variable among clinicians and clients, and the taboo nature of the topic of sexuality was raised by the majority of participants, all groups combined: "*I think that not all clinicians are at ease talking about that* [sexuality]. *So you have to know your limits even if it's* [SIG] *implemented in a systematic way* […] *I don't know...it's the taboo...*" [Clinician 10] and "*Well it's... that's what it is... it's, it's that this topic* [sexuality] *is very delicate*" [Client 1].

Factors related to clinical practice

When the SIG should be used: Inpatient rehabilitation was considered less conducive to the use of SIG compared to outpatient rehabilitation and that, if sexuality needed to be addressed in inpatient setting, it would be more appropriate to wait until the end of rehabilitation: "*When you're closer to going home or when... after you return home, so as an outpatient client, I think it works much better, because it* [Sexuality] *is part of social roles, important roles that eventually will become part of daily life again.*" [Coordinator] and "*At what point did you start thinking about sexuality again?* [Interviewer] *When I went home, when I got home. You know. You're looking forward to going home and then you're home, you're with your partner, your family, and uh... you want some intimacy at some point...You're trying to make up for lost time as a couple. To reconnect, you know…*" [Client 1]

Where the SIG should be used: This was a consensus among all participants, who thought that the SIG had to be used in a closed room to preserve the confidentiality of the conversation. "*I appreciated that she* [clinician] *didn't say that in front of the whole team, while we were doing exercises: "I'm going to take a little 10 minute break to talk to you about sexuality" because... it's not... it's not so bad to talk about sexuality, but it's because it's sometimes about intimate things...*" [Client 4]. The work environment of speech-language pathologists and psychologists, usually in an individual office, was therefore considered to be more conducive to the use of SIG than that of occupational and physical therapists, who typically shared treatment rooms with colleagues: "*I have the feeling that, at the workplace, the question of sexuality is harder to address... in an open space rather than in a private space*." [Coordinator]

Clinical reasoning: Clinicians reported not using the SIG systematically with all of their clients, but rather using their clinical reasoning to target the clients with whom the SIG might be relevant. Only one participant (Clinician 15) used the SIG systematically: "*I triaged who I addressed it with and all that. I'd say, okay, what would, you know... I would think... that it would go well and that, you know, they'd be a good candidate...*" [Clinician 5].

The Context of the Rehabilitation Hospital

Lack of resources

Clinicians reported that hospital staff were overloaded during part of the implementation period because of summer holidays, which led them to spend less time using the SIG: "*Well, I was also part of the stage of preimplementation* [pretest] *and that went really well. And then summer arrived and we had crazy schedules; it was crazy, and*

I admit that it was not as easy to implement [the SIG] *… it kind of got pushed over*" [Clinician 3]. The fact that there was no clinician with expertise in sexuality on staff at the hospital was also reported as a barrier to using the SIG, with the participants feeling that they had nothing to offer the client in terms of rehabilitation after identifying the need to address sexuality: "*Well... to have an expert clinician. To have someone well trained to address the question* [sexuality]. *I think it's essential…*" [Coordinator].

Management support

The lack of policies and support from establishment administration on the use of the SIG was also considered a factor affecting its implementation: "*It takes an administration with the will to follow through and it takes cooperation. So it has to come from both sides. If it's just from one side then...*" [Coordinator].

Institutional culture promoting safety

The institutional culture has led clinicians to prioritize other lifestyle habits over sexuality for many of their clients, the latter being considered more related to quality of life and less important for the return or home maintenance of clients: "*I think that it's harder to make the administration accept a protocol on screening* [SIG] *for sexual difficulties because that's not a challenge that will prevent a patient from going back home. So, in a hospital setting, it'll never be about* sexuality […] *Because our role is getting people to be safe in their homes when they are discharged.*" [Coordinator]

The Implementation Process

Changing practices

According to the coordinator, any change in practice was more or less difficult to implement with clinicians: "*If we are really interested in looking at the barriers to implementation, it's due in a major way to the difficulty linked to implementing a new clinical practice, and that's not withstanding the fact that it's* [Sexuality] *a sensitive subject*" [Coordinator]. This was supported by a clinician who had seen the two trainees she supervised during the study more easily integrate the SIG into their practice compared to herself: "*My two interns were very efficient in using the screening* [SIG]*, precisely because I think that, for us it's not part of our intervention routine but… For them it's* [clinical practice] *all new and they're learning, so they integrated it* [SIG]" [Clinician 5].

The People Involved

The People Involved in the implementation, the coordinator and first author, were considered facilitators in the use of the SIG by clinicians. The coordinator said that he was more involved in the beginning of the implementation period and then decreased his involvement, considering his role to be primarily administrative: "*So my job is to, it's to offer support, and* […] *the student researcher also provided clinical support... clinical... even clinical-administrative support was part of it*' [Coordinator] *Could we say that that was a factor that facilitated the implementation and acceptability of the screening?* [Interviewer] *For sure*" [Coordinator]. For some participants, the first author facilitated the use of the SIG particularly in connection with the clinical supervision he offered and the reminders he sent to the participants: "*And when there was a complicated case, did*

my support help you? [First author] *Well for me, that help made all the difference. I'd say that mostly, you were very available, you took the time and we spoke at length.*" [Clinician 9]

Implementation Strategies

The poor access to implementation strategies that were proposed to clinicians during the study influenced their use of SIG. Factors such as lack of knowledge about the existence or location of resources and lack of availability led many clinicians to underutilize implementation strategies: "*Honestly, I missed many of your training sessions, or when you were here, it was just, it was just very difficult to take the time, outside work hours to try to do this, but for sure, I... I think that it's still important to try to address it when you can but it was difficult during that period*" [Clinician 2].

Discussion

The purpose of this study was to explore the feasibility of implementing a Sexuality Interview Guide (SIG) in stroke rehabilitation and describe the factors perceived as influencing its implementation. By the end of the four-month implementation period, the SIG was included in the clinical toolkit of 15 clinicians, used by most of them (12/15), and 28 clients were interviewed and received the opportunity to discuss sexuality with a clinician. Considering the annual rate of clients treated in inpatient rehabilitation (i.e. 360, or approximately 30/month) this represents less than 10% of inpatient clients treated in the hospital, and an unknown proportion of outpatient clients receiving this opportunity. However, this proportion is the total amount of clients treated in the hospital during the implementation period. This does not account for the amount of clients treated by the participating clinicians in this study, considering that we

did not recruit all clinicians of the neurology program. Moreover, the proportion of inpatient clients interviewed with the SIG shouldn't be analyzed in opposition to the total amount of clients treated in the hospital during the four-month implementation considering that that many of the 28 clients interviewed with the SIG were, interestingly, treated by two participating clinicians to the study (where only one used the SIG to address sexuality systematically with all clients). Therefore, the proportion of clients interviewed should be interpreted with caution and in concordance with qualitative data, which explains why and how the SIG was used, or not used, by clinicians. However, in order to better measure the implementation of a tool such as the SIG, future implementation studies should collect the proportion and characteristics of each client treated by each participating clinician in order to yield more accurate results.

Compared to a research-to-action study (Guo et al., 2015) which led to an 80% increase in the proportion of clients receiving the opportunity to discuss sexuality during inpatient stroke rehabilitation, our results are more modest. Methodological differences such as the duration of the study and choice of implementation strategies may partly explain these differences. However, the two studies should be compared with caution, as Guo and collaborators (2015) did not report the number of persons interviewed but only proportions. However, given the fact that all of our participating clinicians stated that they "rarely" or "never" addressed sexuality prior to participating in the study, our results nonetheless suggest an improvement in the frequency with which clinicians addressed sexuality with their clients. Therefore, in the context of this study, the SIG was shown to be an appropriate guide for use in stroke rehabilitation and a tool that could support

rehabilitation clinicians in adhering to guidelines in stroke rehabilitation regarding sexuality (Mountain et al., 2020).

According to the categories identified as underlying feasibility (Orsmond & Cohn, 2015), the methods used in our study led to the recruitment of an adequate number of participants and to the collection of data that was relevant to evaluate the implementation of the SIG in clinical practice. The fact that the SIG was developed in collaboration with stakeholders and pretested (Gagliardi et al., 2016), that a variety of complementary strategies (n=11) were used (Barosi, 2006; Green, Wyszewianski, Lowery, Kowalski, & Krein, 2007) and that the coordinator and first author acted as facilitators, or champions (Eagle, Koelling, & Montoye, 2006), during the study certainly contributed to the feasibility of implementing the SIG. However, although the SIG was well accepted by all participants (clients, coordinator, clinicians), other factors influenced the guide's use, often negatively, notably client characteristics and clinicians' perceived lack of knowledge and skills regarding sexual rehabilitation, as well as variable confidence in raising issues related to sexuality. Moreover, the context of the rehabilitation hospital was a major factor that affected the use of the SIG by clinicians (de la Sierra, Zamorano, & Ruilope, 2009). In fact, the clinicians' work overload during the implementation period led them to prioritize safety issues and basic activities of daily living over sexuality, which partially explains underuse of the SIG. Also, more guidance from managers could have promoted clinicians' participation and adherence to the indications for use of the SIG. Finally, the absence of financial support for this study made it impossible to compensate the clinicians for their time when participating in knowledge translation activities during working hours. Consequently, these activities had to be organized during

lunch hour and were not mandatory, which led the majority of participating clinicians, whose workload was already heavy, to miss either one or many of them. Nonetheless, the fact that clinicians reported a significant improvement in their comfort regarding sexuality issues suggests that taking part in the study, including participating in the knowledge translation activities, had a positive impact.

Therefore, this study showed that, to promote the feasibility, future implementation studies on the subject should reproduce the implementation methods, and supplement them with the addition of: 1) more training for clinicians regarding sexual rehabilitation, 2) more involvement of managers in carrying out the study and 3) more human and financial resources to enable clinicians to participate in training sessions and hire a sexual rehabilitation specialist for consultation purposes.

Strengths and limitations of the study

This study is innovative and represents a much-needed contribution to the scientific literature on the topic of sexuality and stroke rehabilitation, which to date is not extensive. The fact that this research focused on the needs of different stakeholders in the hospital's neurology program and used a collaborative research approach are among the study's strengths. The use of a pre-test allowed us to refine the SIG and establish implementation strategies that could be adapted to the needs of clinicians and the context of a rehabilitation hospital. In addition, the use of a mixed research design to involve clinicians, a neurology program coordinator and stroke clients yielded a variety of perspectives, which gave us a deeper understanding of the factors that influenced the implementation of the SIG while allowing us to simultaneously explore the study's impact quantitatively. The analysis of interviews by two independent evaluators using a validated method of thematic analysis

(Paillé & Mucchielli, 2016) added to the credibility of our results. The use of a conceptual framework to analyze data, in this case, the CFIR (Damschroder et al., 2009), was also an asset because it allowed a better understanding of the determinants that influenced implementation of the SIG and comparison of our results with those of other studies.

However, this study has some limitations. Given that it was carried out as part of a master's thesis with no financial support, there were important financial and time constraints. The collection of pre-implementation self-reported data of participating clinicians and coordinator as to if they included sexuality in their practice, in the data collection that occurred following the implementation period, was an example of how the constraints influenced our methodological choices. In addition, it was impossible to systematize use of the SIG throughout the entire neurology program, which limited the impact of SIG implementation. It should be noted that the implementation strategies were adapted to take these constraints into consideration, and close follow-up with each of the participating clinician ensured that they were optimally supported during the study.

In conclusion, this study showed that the SIG can be useful in the rehabilitation of stroke clients, as it was considered relevant by every participant involved, namely clients, clinicians and the clinical coordinator. However, individual and organizational barriers limited the extent of its implementation. Identification of both non-modifiable (e.g., client characteristics such as age, culture and marital status) and modifiable factors (e.g., clinicians' characteristics such as knowledge and confidence level concerning sexuality) will inform future knowledge translation studies in this area. The results show that it is relevant and possible to integrate a new clinical tool in clinicians' repertoire to support them in their practice regarding sexuality and enable them to broach the topic with their

clients with greater ease. Integrated, rigorous and well-prepared knowledge translation research have the potential to improve the quality of services provided to stroke clients by integrating sexuality-related clinical practices into clients' rehabilitation program.

Acknowledgements

The authors would like to thank the clients, clinicians and coordinators who participated in the study. The first author was supported by a Graduate Scholarship-Master's Program from the Canadian Institutes of Health Research (CIHR) and by scholarships from the School of Rehabilitation at the Université de Montréal, the Center for Interdisciplinary Research in Rehabilitation of Greater Montreal and the Ordre des ergothérapeutes du Québec. The second author was supported by doctoral scholarships from the CIHR and the Fonds de recherche du Québec en santé (FRQS). The last author was supported by a senior career award from the FRQS.

Declaration of interest statement

The authors report no conflict of interest.

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