The Effectiveness of a Sexuality Training Program for the Interdisciplinary Spinal Cord Injury Rehabilitation Team

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While there is evidence to support consideration of client sexuality needs in the provision of rehabilitation services to people with spinal cord injury (SCI), the interdisciplinary team rarely receives training in this area. The current study aimed to examine the effectiveness of a consumer-driven sexuality training program in improving staff knowledge, comfort (general and personal) and attitudes. Using a local needs assessment to identify training needs and the Permission. Limited Information. Specific Suggestions and Intensive Therapy (PLISSIT) model as a training framework, a sexuality training program was developed in one Australian SCI service. A randomized controlled trial was conducted and significant improvement was found in all domains for the treatment group – Knowledge($\chi^2 = 46.141$, p < 0.001), Comfort ($\chi^2 = 23.338$, p < 0.001), Approach($\chi^2 = 23.925$, p < 0.001) and Attitude ($\chi^2 = 15.235$, p < 0.001) compared to the control group. Changes were found to be maintained at three month follow-up - Knowledge (Z = -5.116, p < 0.001), Comfort (Z = -3.953, p < 0.001), Approach (Z = -4.103, p < 0.001) and Attitudes (Z = -2.655, p < 0.001)0.001). These results support the use of an individualized needs-based sexuality training program in fostering staff knowledge, comfort and attitudinal change in an interdisciplinary SCI rehabilitation service.

KEY WORDS: sexuality; training; spinal cord injury; interdisciplinary.

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During the last fifteen to twenty years, literature supporting holistic services for people with spinal cord injury (SCI) has become increasingly inclusive of sexuality concerns as a legitimate aspect of the rehabilitation process (1-7). Yet it is reported that sexuality issues are infrequently addressed during rehabilitation (2,4,6,8). This is at odds with the perception that staff members in SCI rehabilitation recognize this frequently unmet need and support sexuality interventions (4,9,10).

Barriers to the provision of sexuality services to people with SCI have been identified in the literature. Lack of knowledge, discomfort and attitudes of staff from different disciplines have been reported as some of the key reasons why sexuality issues are not addressed and, in some cases, avoided (1,4,7,8). Many staff may perceive, not only that they possess inadequate knowledge and skills, but that the expertise lies elsewhere, there is insufficient time or the patient is not ready to address sexual concerns (4). While some staff identify they have never been approached for information in this area (11), clients may hold perceptions that discussions of sexual issues are inhibited by staff members' evasiveness, discomfort, body language and personality (6).

The existing literature suggests that staff training is required in these areas in order to facilitate holistic rehabilitation, inclusive of sexuality concerns (2,7,11-13). Significantly however, patients may not necessarily identify a particular discipline or person as most appropriate with whom to discuss issues of sexuality but may rather identify those staff members who make them feel most comfortable and allow opportunity for discussion.

These preferences support the management of sexuality within the context of the interdisciplinary team as a whole (2,3,6,8).

Staff sexuality training has been identified as an area requiring further investigation. Literature which supports sexuality training tends to be focused on single disciplinary knowledge rather than the interdisciplinary team (4,5,9,10,13). Disciplinary education is important but neglects the varying levels of expertise a team can contribute and the patient's selective interaction with those professionals who they feel most comfortable with, regardless of their discipline. Despite identified needs for staff training in the management of sexuality issues, this area has been neglected with few studies examining interdisciplinary training programs and the effectiveness of such programs.

Previous studies have demonstrated that change in staff attitudes to sexuality issues in people with intellectual disability is possible (14) and also that significant gains in knowledge, comfort and skills can be achieved for staff working with people with SCI (3), following specific sexuality training. However, sample size has been relatively small in these studies, they have not used true control groups or random assignment and the sustainability of the changes over time has rarely been examined.

The Effectiveness of a Sexuality Training Program

Research in the field has-generally highlighted the provision of skills and knowledge as important elements of training, yet the sensitive and complex nature of sexuality presents different challenges for staff who may find application of skills and knowledge more difficult due to personal attitudes and degree of comfort experienced (1,8). No single study has sought to measure the impact of training on staff Knowledge, comfort and attitudes in dealing with the sexuality concerns of people with spinal cord injury. The current exclusion of these factors suggests that a systematic model of professional skill development is required (1).

The authors of the current study have previously suggested that consideration of the knowledge, comfort and attitudes of staff is essential in assessing training need and determining the content of training programs (7). Furthermore, training initiatives should be individualized to address the specific needs of individuals in these domains. Historically, training has tended to be directive in nature assuming a passiveness of the learning recipient in the process although this is not always the case (3,8). It has been suggested that by combining individualized assessment (3) and incorporation of needs in these domains with the application of a process-focused model such at the Permission, Limited Information, Specific Suggestions and Intensive Therapy (PLISSIT) model (15), an innovative approach to interdisciplinary training emerges, addressing the need for a consumer driven approach to program development and evaluation (7).

This current study aimed to measure the effectiveness of this approach by evaluating a consumer-driven sexuality training program to improve staff knowledge, comfort, (general and personal) and attitudes in the interdisciplinary SCI rehabilitation team.

METHOD

This randomized controlled trial, which aimed to examine the impact of the training program on staff knowledge, comfort and attitudes, was conducted over an eight month period in 2002/2003. Relevant institutional ethics committee approval was granted for the trial.

Participants

The participants were staff employed in the Queensland Spinal Cord Injuries Service (QSCIS). The QSCIS provides interdisciplinary SCI rehabilitation services in a unique continuum of care model (16) which incorporates inpatient acute care and primary rehabilitation in the Spinal Injuries Unit (SIU), community based transitional rehabilitation in the Transitional Rehabilitation Program (TRP) and a community based follow-up and consultation service through the Spinal Outreach Team (SPOT).

All members of the QSCIS interdisciplinary team were invited to participate in the current study. There were no exclusion criteria based on gender, age, qualifications, or job experience. Of the 96 interdisciplinary staff within the service, 89 staff agreed to participate. Participants included 63 nursing staff, 3 medical staff, 2 social workers, 4 physiotherapists, 1 physiotherapy assistant, 3 occupational therapists, 1 occupational therapy assistant, 6 TRP staff and 6 SPOT staff.

Participants were randomized to treatment or control groups using a stratified randomization process across discipline groups. A series of oneday training workshops were delivered to the treatment group and, at the conclusion of the study to the control group, for reasons of equity of access to professional development opportunities. Each training workshop had 10–15 participants.

Intervention

Using a local needs assessment, the PLISSIT model as a training framework and adult learning theory (17), the consumer-driven sexuality training program was developed and delivered in a series of one-day training workshops. The education program, informed by a local needs assessment (7), was developed and delivered by an external clinical nurse consultant who is a recognized specialist in the area of sexuality and SCI. The PLISSIT model (15), widely accepted and utilized in sexuality education, provided a conceptual framework for training which assists individual participants with varying levels of knowledge, skill and comfort levels to manage sexual questions at a minimum level of competency. An overview of the program is provided within Table 1.

Measures

The KCAASS (Knowledge, Comfort, Approach and Attitudes towards Sexuality Scale) (1), a previously validated single measurement questionnaire which demonstrated high levels of internal consistency across the four conceptual domains was utilized for the purposes of this study. The questionnaire has four subscales that measure current staff knowledge on sexuality issues, staff comfort in addressing sexuality issues, staff comfort in managing personal approaches from clients and staff attitudes towards sexuality among people with SCI. The KCAASS produces summary scores for four aspects of sexuality (Knowledge (/56); Comfort (/104); Approach

Торіс	Content Outline
Introduction	Introduction to study day
General information Group agreement	Establish agreed group limits/boundaries
Sexual/reproductive health and disability professional issues	Cultural differences, attitudes and values Sexual rehabilitation – Role of health professionals Identification of professional boundaries Limit setting Maintaining boundaries
Sexual function prior injury	Brief overview Pre injury sexual function Development of sexual identity Phases of sexual response
Sexual function after spinal cord injury	Changes in arousal and orgasm responses
Sexuality/sexual expression	Emotional/social fears and concerns Physical concerns – positioning, bladder and bowel issues problems/potential solutions
Basic sexual health counseling skills	Health professional issues/barriers Sexual health history taking Information giving – models of care How to begin and how to end the session
Management of erectile dysfunction	Oral medications Intra cavernosal medications Devices to enhance sexual function Surgical implants Current research/development
Video and discussion Fertility following injury	Disability and sexual expression Male factor infertility Contraception in spinal injured women Pregnancy in spinal injured women
Management of infertility	Counseling/information giving Semen retrievel techniques Achieving pregnancy
Case studies Group discussion Close of program	Presentation of case studies Group discussion – intervention options

 Table 1. Program Description

(/20) and Attitude (/20)) where higher scores represent better knowledge and skills. The Comfort, Approach and Attitude subscales are reverse coded when calculating summary scores.

Procedure

Participants were provided with information sheets and informed consent obtained from each participant by the principal investigators. Given the sensitive nature of sexuality issues, participants were made aware that independent, confidential counseling services were available. Participants could withdraw from the study at any time. Only non-identifying information was used and confidentiality was assured.

The KCAASS was administered by the principal investigators at three testing points, immediately pre- and post-training and at 3 months post-training to both the control and treatment groups. For the treatment group, the pre- and post-training KCAASS was completed by all participants at the commencement and completion of the training workshop. However for logistical reasons, the participants in the control group completed the KCAASS during their normal working day. This meant that the control group did not complete their questionnaires as a group, but this process stretched over a period of one weeks. Both the treatment group and the control groups completed groups completed the three month follow-up under workplace conditions.

Data Analysis

Descriptive statistics were used to illustrate central tendency and variability on each of the subscales of the KCAASS. Due to the skewed distribution on the Attitude subscale and the fact that transformation could not approximate normality, non parametric analyses were performed. Betweengroup comparisons of treatment and control group were conducted using Mann–Whitney U tests and within group comparisons over time were conducted using the Friedman's test. *Post hoc* comparisons were conducted using Wilcoxon signed ranks tests.

RESULTS

A total of 89 interdisciplinary staff members participated in the study, with 44 treatment and 45 control group participants. There were 31 nurses, 1 medical practitioner, 6 allied health staff and 6 community staff in the treatment group and 32 nurses, 2 medical practitioners, 5 allied health and 6 community staff members randomly assigned to the control group. Table 2 shows the demographic characteristics of the sample as a whole. Demographic data were collected separately and could not be linked to individual questionnaire data so as to maintain confidentiality and anonymity. This meant that comparisons across groups on demographic characteristics were not possible.

There was a moderate amount of missing data on the KCAASS but this was distributed across entire subscales rather than any particular

		Frequency (n)	Frequency (%)
Gender	Male	16	17.8
	Female	59	65.6
Age (years)	21-30	18	20.0
8 6 7	31-40	32	35.6
	41-50	18	20.0
	>50	7	7.8
Marital status	Single	22	24.4
	Married	41	45.6
	Defacto	8	8.9
	Separated/divorced	4	4.4
Years in spinal rehabilitation	<1	9	10.0
	1–3	3	3.3
	4–5	11	12.2
	6–10	21	23.3
	11-20	28	31.1
	>20	3	3.3
Previous sexuality training	Yes	25	27.8
	No	50	55.6
Previous SCI sexuality	Yes	18	20.0
training	No	57	63.3
Missing data		14	16.7

 Table 2. Demographic Details of Participants

individual items. There was also a small degree of attrition in the treatment group at the 3 month data point (five people). Missing data for the control group was variable over time but was substantially higher than for the treatment group. Cases with missing data were excluded from the analysis for that scale. This method of exclusion was selected because data was missing across entire subscales and imputation methods would have been questionable given the sample size and the fact that demographic data could not be matched to individual participants.

Cronbach α scores for the subscales of the KCAASS (Knowledge, Comfort, Approach and Attitude) in this study were 0.929, 0.972, 0.865 and 0.641 respectively.

Initial between-group comparisons on subscales scores showed that the control group scored significantly higher than the treatment group on the Knowledge subscale prior to the training program (Z = -2.155, p = 0.031) but scored significantly lower than the treatment group immediately following the training program (Z = -2.773, p = 0.006) and at 3 month follow-up (Z = -3.328, p = 0.001). Yet no significant differences were noted between treatment and control groups on scores obtained prior to and following the training or at 3 month follow-up on the Comfort, Approach or Attitude subscales.

Within group comparisons were conducted to explore change over time within each group using the Friedman's test with *post hoc* comparisons using Wilcoxon signed ranks.

Table 3 shows the median and interquartile range obtained for treatment and control groups on each subscale of the KCAASS at three data collection points, namely just prior to the education, just following the education and at 3 months follow-up. The treatment group showed significant change over time on each of the subscales, namely Knowledge ($\chi^2 = 46.141$, p < 0.001), Comfort ($\chi^2 = 23.338$, p < 0.001), Approach ($\chi^2 = 23.925$, p < 0.001) and Attitude ($\chi^2 = 15.235$, p < 0.001). In comparison, the control group did not show any significant change over time on any of the subscales of the KCAASS.

Post hoc comparisons revealed that the treatment group showed significant change between pre- and post-education on Knowledge (Z = -5.706, p < 0.001), Comfort (Z = -4.306, p < 0.001), Approach (Z = -4.555, p < 0.001) and Attitude (Z = -3.4996, p < 0.001) subscales. At 3 month follow-up, the treatment group reported significantly higher scores than they did at pre education for the subscales of Knowledge (Z = -5.116, p < 0.001), Comfort (Z = -3.953, p < 0.001), Approach (Z = -4.103, p < 0.001), and Attitudes (Z = -2.655, p < 0.01). Although scores did tend to be lower at the 3 month follow-up than immediately following the education, they did not differ statistically.

Comparisons across disciplines were made using change scores and Mann–Whitney U tests were performed for both treatment and control groups. There were no differences in change scores for either treatment or control group between nursing, allied health or community staff members.

Data	Prior to Education	Following Education	Three month Follow-up
Knowledge(/56)			
Treatment	34.00 (7.50)	42.00 (7.00)**	42.00 (6.50)**
Control	35.50 (5.75)	37.50 (7.50)	36.00 (7.00)
Comfort (/84)			
Treatment	69.00 (24.50)	76.00 (18.00)**	77.00 (19.00)**
Control	78.50 (16.50)	77.50 (18.75)	73.50 (21.25)
Approach (/20)			
Treatment	11.00 (6.00)	14.00 (5.00)**	13.00 (4.00)**
Control	12.50 (6.50)	13.50 (5.00)	12.00 (5.50)
Attitude (/20)			
Treatment	17.00 (3.00)	19.00 (2.50)**	18.00 (3.00)**
Control	18.00 (3.25)	18.00 (3.25)	17.50 (3.00)

 Table 3. Medians and Interquartiles Range on Each Subscale of the KCAASS for Treatment and Control Groups at Three Data Collection Points

**Significantly different to pre-education score at p < 0.01.

The medical practitoners were excluded from this analysis on the basis of small sample size.

DISCUSSION

The current findings provide support for the effectiveness of consumerdriven training programs in improving staff knowledge, reducing discomfort with addressing sexuality rehabilitation and personal approaches from clients and improving attitudes towards sexuality for people with SCI. Those staff assigned to the treatment group showed a significant improvement on all subscales of the KCAASS following the training program and these changes were maintained at 3 month follow-up. In comparison, the control group did not demonstrate any significant change in KCAASS scores.

This finding supports previous research which has demonstrated improvements following staff education and training in sexuality issues. Rose and Holmes (14) conducted a study examining the effectiveness of staff training on attitudinal change in the area of intellectual disability (14). They evaluated the impact of two workshop formats of three-day and one-day training programs and concluded that both workshops were effective in facilitating attitudinal change though they did not investigate the permanency of these changes. In Tepper's study (3) a training program based on a local needs assessment which aimed to increase staff knowledge, comfort and skill in the sexual health care needs of people with SCI was developed, implemented and evaluated. The program, which also used the PLISSIT model (15) as a training framework, had a 5 month followup evaluation assessing the impact of the training on practice. Eighteen participants from varying disciplinary backgrounds participated in 3 days workshop. Statiscally significant gains in staff knowledge and self-reported comfort and skills and a positive translation to the work environment, was reported.

The significance of the improvements seen in this study across all subscales is also supported when the relatively small sample size is considered. While the statistical power of the study is likely to be low because of the small sample size, low statistical power would be expected to increase the likelihood of finding no change – so these results suggest that the actual change may have been greater than was found.

The present study's finding that the gains achieved can be maintained at 3 months has not been previously reported. Many training programs reported in the literature are either not evaluated over the medium term or have not demonstrated sustainable change (3,14,18) Furthermore, previous research has found that change in domains such as comfort and attitudes is more difficult to achieve and maintain than change in more tangible domains such as knowledge (18). While participants in the current study demonstrated greater improvement in knowledge than they did in the other domains of comfort and attitude change, the changes in comfort and attitude remained significant at 3 month follow-up.

The training program delivered in this evaluative study offered a range of content areas, developed specifically on the basis of a previously conducted needs assessment (7). This approach to education and training is in contrast to the approach often employed where the content of training programs is defined by the people developing the program or the 'experts' rather than by the end consumer (14). This approach to the education of healthcare professionals (particularly in areas such as sexuality that may still be perceived as non-essential by some individuals) also aligns more clearly with current notions of adult education and training. In his model of adult learning, Knowles (17) outlines the six principles on which adult learning must be based on: (1) the need to know; (2) the learners' self concept; (3) the role of the learners' experience; (4) readiness to learn; (5) orientation to learning and (6) motivation. For healthcare professionals involved in the delivery of rehabilitation services, training initiatives must be relevant to their role descriptions, as well as focussed on the learning needs of the individual. Without relevance to the individual, training initiatives such as these may merely be seen as another task to be performed.

In the present study, the training program was offered within a oneday workshop format. Existing literature suggests that workshops conducted over longer periods of time (e.g., 3 days) may be more effective in producing attitude change (14). However, the results of this study support the effectiveness of a one-day format as well. This also has practical implications as longer duration education and training programs may not be organizationally or financially viable for the interdisciplinary rehabilitation team, whose primary role is clinical service delivery.

The PLISSIT Model (15) has been widely used as a model for the provision of staff training and sexuality rehabiliation interventions within a variety of clinical settings and across a wide array of disciplines (19–23) including spinal cord (3–5,24,25). Rather than defining what content should be included in sexuality training or provided to clients within sexuality rehabilitation, the PLISSIT model provides a process framework that allows for different degrees of involvement based on the staff member's comfort level, knowledge base and counseling skills. This model is particularly appropriate for use within the interdisciplinary team where different members contribute varying levels of skill, knowledge and experience in sexuality counseling.

Although this study did not demonstrate any significant differences in the degree of improvement between individual disciplines, further studies with larger sample size may be informative.

In identifying and developing appropriate content for inclusion in training programs, the utility of the knowledge, comfort (general and personal) and attitude framework (1) is apparent. By specifying these domains and identifying the current status and individual needs of staff in each of these domains, appropriate content could be developed and tailored to the team, inclusive of the psycho-emotional needs of individual staff as well as their identified knowledge needs. In addition, the KCAASS (1) appears to be an appropriate measure of change in these areas demonstrating sensitivity to change over time.

LIMITATIONS AND FUTURE DIRECTIONS

There are several aspects of the current study that present limitations and warrant caution in interpreting the results. Perhaps the most obvious limitation in the current study lies in the reporting bias exhibited by the control group who were not assigned to receive the training initially. The implications of these biases in this study were evident where the control group scored higher than the treatment group on each of the subscales, but significantly higher on the Knowledge subscale. While the study aimed to ensure equivalence across groups by reassuring participants in the control group that they would receive the training at the completion of the study, it is suspected that being assigned to the control group still resulted in some feelings of resentment and a tendency to overestimate knowledge, comfort and attitude. The greater amount of missing data for the control group also supports the likelihood of reporting bias in this group.

One aspect of the current study that must be considered relates to the individualized and consumer-driven nature of the program provided to the participants. The program was developed according to the needs identified by these participants. It is therefore anticipated that the content provided within this education program would not necessarily be applicable or relevant to individuals within other rehabilitation settings. It is however, proposed that the process involving the conduct of needs assessments and development of individualized programs would be particularly relevant to other services wanting to develop their own training programs.

The study has also demonstrated that the improvements observed have been maintained at 3 months but there was a non-significant trend towards lower scores even at this point. Whether improvements can be maintained beyond 3 months and for how long is of theoretical and practical importance when considering the need for 'refresher' courses or additional training initiatives. Further longitudinal assessment of the current cohort is planned.

Finally and perhaps most importantly, the study has not examined the degree to which the self reported changes in knowledge, comfort and attitudes are translated into practice. Ultimately, changes in self reported measures are of little use if these changes do not result in real differences for clients receiving sexuality rehabilitation. The Tepper study (3) reports observational follow-up aimed at examining translation to practice and further similar studies are required.

This study represents a significant advance in evaluating staff training in sexuality rehabilitation both theoretically and methodologically. The inclusion of a control group, random assignment of participants, the use of a theoretical model as the basis for the program at both content and process level as well as the tailored nature of the program has not been previously described. Significant improvement was demonstrated in all domains and the change was maintained at 3 months.

CONCLUSION

Consumer-driven and needs-based education initiatives are the ideal when contemplating the provision of training programs for practicing healthcare professionals., The current study provides support for the effectiveness of a consumer-driven sexuality training program in improving knowledge, increasing comfort and improving attitudes for the interdisciplinary SCI rehabilitation team. Future research should examine the degree to which these changes can be maintained over longer periods and how they can be translated into clinical practice which will benefit people with spinal cord injury. A larger sample size and involvement of multiple may also be beneficial in future studies.

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