Expansion of Spinal Cord Injury Male Fertility Program: Needs Assessment

Katarina Waters, DNP, FNP-C, APRN, University of Utah College of Nursing
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Overview

- Purpose
- Problem (program limitation)
- Objectives
- Literature Review
- Implementation
- Results
- Future SCI fertility Program Plans
Project Purpose

- To discover whether there is a need for SCI Male Fertility Program at the University of Utah Health Care (UUHC)
SCI Outpatient Program Assessment

- Location
  - Physical Medicine and Rehabilitation (PM&R) Outpatient Clinic at the University of Utah Health Care (UUHC)

- Background information
  - Rehabilitation services for SCI population offered since 1965
  - Service areas include Intermountain states

- Services
  - SCI specialized care, primary and urgent care to SCI population
MISSION STATEMENT

“To promote, support and realize maximum health and quality of life for individuals affected by spinal cord injury dysfunction” (UUHC, 2011).

SCI Outpatient Program
SCI Program Limitations

- No ejaculatory dysfunction treatments or fertility services offered for SCI men
- Limited patient education on fertility and Nonsurgical sperm retrieval (NSSR) treatment methods options
- Limited provider education how to use NSSR equipment
Project Significance

- Over 260,000 individuals with SCI in USA
- More than 12,000 new SCI cases are reported per year in US
- About 80% of SCI population are men
- More than 50% SCI men are between ages 16-45
- More than 90% male with SCI are infertile due to inability to ejaculate and have decreased sperm quality
Objectives

- To develop and implement needs assessment plan for SCI Male Fertility Program
- To summarize needs assessment findings
- Provide recommendations
Literature review

- Regaining sexual function was rated the highest priority in paraplegics and second highest in tetraplegics (Anderson et al., 2004)-LOA 4.

- Semen retrieval may be assisted by PVS in men with lesions above T10 (Beretta et al., 1989; Sonksen et al., 1994; Le Chapelain et al. 1998; Brackett et al., 2007)- LOE 4

- Up to 95% of cases with PVS results in ejaculation (Deforge, 2006: Deforge et al., 2004)- LOE 4

- Using a vibratory stimulation produces samples with better sperm motility than from electrostimulation (Brackett et al., 1997; Ohl et al. 1997)- LOE- 2
Penile Vibratory Stimulators
Semen retrieval may be assisted by EEJ in men who failed PVS (Kolettis et al. 2002)-LOE 4

Surgical aspiration may be used to retrieve sperm if PVS and EEJ are not successful (Brindley et al. 1989)LOE 4.

Men with SCI have a good chance of becoming biological fathers with access to specialized care utilizing reproductive assisted technology (Kanto et al. 2008)
Electroejaculation Machine
Needs Assessment Evaluation Questions

1. What services are currently offered at the UUHC that are supportive of a new SCI Male Fertility Program?

2. What services are available locally and nationally to help with fertility in men with SCI?

3. What are the characteristics of outstanding SCI Fertility Programs nationally?

4. What components should be included in a comprehensive SCI Male Fertility Program?

5. What are the current trends of treatments for SCI male fertility?

6. What are current methods of ejaculation for SCI men?

7. How many SCI patients at the UUHC are interested in utilizing no-surgical sperm retrieval services for insemination?
NEEDS ASSESSMENT METHODS

Modified Audit (type 2) Design

Assess SCI Program regarding ejaculation problems, treatment and fertility options

Needs assessment for SCI Male Fertility Program at the UUHC

Model SCI Fertility Programs

Interviews

Needs assessment patient survey

Key informant interviews

Needs assessment provider survey

Clinical practice guidelines review

Evidence Based Practice literature review

Proposed program offerings

Adopted by Ovretveit, 1998, p.282
Patient Needs Assessment Survey

- 27 questions formulated by E-survey design
- IRB Approval of survey study on September 19, 2011
- Survey given to 62 subjects who met inclusion criteria
- Survey participation voluntary and anonymous
- Consent Cover latter reviewed
- Paper-pencil/online form available
- All survey conducted at the PM&R outpatient clinic
Provider Needs Assessment Survey

- 22 questions by E-survey design
- Survey sent by e-mails to 70 identified providers that met inclusion criteria
- Participation voluntary and anonymous/had a choice to be identified
- By completing the survey consented to participate in the study
- Protocol (inclusion criteria)
  - Current or potential SCI provider
  - Prescriptive practice in the state of Utah
Clinical Practice Guidelines Review

- On line literature review
EBP Literature Review

- Systemic review of male fertility by Spinal Cord Injury Rehabilitation Evidence (SCRE), 2011
Key Informant Interviews

- 8 questions were formulated
- 6 interviews conducted and analyzed
  - PM&R
    - Dr. Jeffrey Rosenbluth
    - Shelly Pole, Clinic manager
  - Urology
    - Dr. William Brant
    - Colleen Lowe, NP
  - REI
    - Dr. Ahmad Hammoud
  - Andrology Lab
    - Dr. Douglas Carrell
SCI Fertility Program Interviews

- Model SCI Fertility programs were identified
  - The Miami Project’s Male Fertility Research Program, Florida
  - Sharp SCI fertility Program, San Diego, CA
Patient Survey Results

**Age of Participants**

- ages 18-29: 35%
- ages 30-39: 41%
- ages 40-49: 17%
- ages 50 and older: 10%

**Level of Spinal Cord Injury**

- cervical: 41%
- thoracic: 32%
- lumbar: 17%
- unknown: 10%
Patient Survey Results

Type of Spinal Cord Injury
- complete SCI: 32%
- incomplete SCI: 59%
- unknown: 9%

Methods of Ejaculation
- masturbation: 50%
- sexual intercourse: 50%
- PVS: 5%
- EEJ: 0%
Patient Survey Results

- 50% were single, 40% married 10% divorced or separated
- 40% reported to have children that were born before injury, 5% after injury
- 50% of subjects experienced ejaculation
- 40% would like to have children in the future
Patient Survey Results

PVS Knowledge Self Rating

- Excellent: Low
- Very Good: Low
- Good: Low
- Fair: Low
- Poor: Medium

Percent

EEJ Knowledge Self Rating

- Excellent: Low
- Very Good: Low
- Good: Low
- Fair: Low
- Poor: High

Percent
Patient Survey Results

Importance of NSSR Services to Subjects

Likelihood of Obtaining NSSR Services
Patient Survey Results

**Distance from UUHC**

- Jan-50
- 51-100
- 101-150
- > 150

**Issues Preventing to Obtain NSSR**

- Issues:
  - knowledge
  - support
  - transport
  - cost
  - insurance
  - relig/cul.
  - other

[Graph showing distance percentages and issues preventing NSSR]
Provider Survey Results

Field of Practice

- PM&R: 50%
- Urology: 23%
- OBGYN/REI: 17%
- Neurology: 7%
- Andrology lab: 3%

17%
Provider Survey Results

- 90% of providers treated SCI men
- 7 (26%) providers in Utah, from that only 1 provider at the UUHC have tried PVS for semen retrieval
- Total of 9 PVS procedures were done in Utah/year.
- 2 provider performed 2 PVS, 5 providers 1 PVS procedures per year.
Provider Survey Results

Current Referrals for SCI Related Fertility Issues

- 6 PM&R UUHC
  - Jeffrey Rosenbluth, MD
- 5 Andrology UUHC
  - Doug Carrel, MD
- 4 Urology UUHC
  - William Brent, MD and Jeremy Myers, MD
- 3 REI UUHC
  - Matthew Peterson, MD
- 2 Urology in Provo
  - Stewart Landau, MD
- 1 Urology at Alta View Hospital
  - Richard Labaski, MD

Likelihood of Using PM&R clinic for Non-surgical Sperm Retrieval services
Provider Survey Results

- No providers had done EEJ at the UUHC
- Only 1 provider has performed EEJ procedures in Utah (outside UUHC)
- All EEJ samples were used for sample analysis, insemination and cryopreservation
Key Informant Interview Summary

- All 6 key informants were not aware of NSSR and fertility services offered specifically to SCI male population at the UUHC
- None of key informants have being using any patient education materials related to the NSSR
- Most informants except SCI specialist have limited knowledge of SCI male fertility needs
- All informants agreed that there is a need for SCI Male Fertility Program at the UUHC and will need interdisciplinary team
Model SCI Program Staff Interviews Summary

- For successful SCI Fertility Program
  - Show an interest to the SCI male population
  - Educated and trained providers for PVS and EEJ procedure
  - Financial and staff support
  - Proper selection of SCI patients for PVS and EEJ procedures followed by algorithm
  - Interdisciplinary team approach
  - Prevent complications of NSSR procedures
Most men with SCI will experience some erectile and ejaculatory dysfunction

Assistance with fertility for biological fatherhood is often necessary

For men with incomplete lesion natural ejaculation may be possible

For couples considering pregnancy may needs to review several factors that can affect fertility outcomes

Options for NSSR

- Manual stimulation
- Use of sympathomimetic drugs
- PVS
- EEJ
Conclusion

- In favor of SCI Male Fertility Program at the UUHC
  - 100% of key provider informants
  - close to 79% of SCI providers
  - 60% SCI subjects reported likelihood of obtaining NSSR (PVS or EEJ) services for fertility reasons

- SCI providers and patients surveys participation
  - Patient survey available for 15 clinic days (62 patients)
  - Provider survey available for 20 business days (30 providers)
SCI Male Fertility Program Plans

- PM&R division approval
- 2 FERICARE
- Consent form
- Grant money to purchase EEJ machine
- Visit “SHARP Rehab SCI Fertility Program”, San Diego, California
- Visit “The Miami Project to Cure Paralysis, SCI Fertility Program”, Florida
SCI Male Fertility Program Plans (cont)

- Selection of appropriate patient education related to NSSR
- Initial SCI fertility assessments, consultations and NSSR services will be performed at the PM&R outpatient clinic with other fertility services consultation
SCI Male Fertility Program Plans (cont)

- Interdisciplinary Team at the UUHC
  - SCI Providers and Staff
  - Andrology Staff
  - REI Specialist
  - OB/GYN Specialist
  - Physical Therapist
  - Occupational Therapist
  - Psychologist
  - Urologist
SCI Male Fertility Program Plans (cont)

- Develop new program business plan with policies and procedures related to NSSR procedures
- Seek financial support from
  - UUHC financial office
  - grants
  - local/national donors
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Questions?

SCI Male Parenthood is possible!
References

References