Sexual Function, Satisfaction, and Use of Aids for Sexual Activity in Middle-Aged Adults with Long-Term Physical Disability

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Background: Sexuality is an important aspect of quality of life in individuals with disabilities, yet little is known about what factors contribute to sexual satisfaction as these individuals age. Method: Middle-aged adults with physical disabilities completed a cross-sectional survey that included measures of sexual activity, function, and satisfaction. Results: Consistent with studies of able-bodied adults, sexual function was the strongest predictor of satisfaction. However, depression also predicted sexual satisfaction for women. Use of aids for sexual activity varied by disability type and was generally associated with better function. Lowest levels of sexual satisfaction were reported by men with SCI. Conclusion: Depression may negatively impact sexual satisfaction in women, beyond contributions of sexual dysfunction, and effective use of sexual aids may improve function in this population. Key words: muscular dystrophy, post-polio syndrome, sexual dysfunction, spinal cord injury

For men and women in the general population, the prevalence of sexual dysfunction increases with age and has been shown to detract from quality of life.1-6 Although sexuality is an important aspect of quality of life regardless of physical disability, only a handful of studies have described sexuality in persons with long-term physical disabilities (LTPD),7,8 and virtually none have examined the intersection of disability, age, and gender in reporting of sexual outcomes.3,4,9

This study sought to (a) examine the prevalence of reported sexual dysfunction and rates of sexual aid use among individuals with LTPD; (b) examine the associations between sexual satisfaction, dysfunction, and the use of aids; and (c) evaluate physical and psychological predictors of sexual satisfaction separately for men and women living with LTPD. Based on literature from able-bodied samples, we hypothesized that sexual functioning would be the strongest predictor of sexual satisfaction. However, we made no a priori hypotheses regarding other predictors of satisfaction or the relationship of satisfaction to use of sexual aids.

Methods

Procedures

Data were collected as part of a longitudinal survey studying secondary conditions in adults with physical disabilities, and methods for data collection have been described elsewhere.10,11 Analyses in this article were based on data from the third year of this study, which focused on individuals in mid-life. Eligible individuals were 46 to 67 years old, reported a physician’s diagnosis of muscular dystrophy (MD), spinal cord injury (SCI), or post-polio syndrome (PPS), and were able to read and understand English. A total of 641 surveys were mailed, and 576 were returned with complete data. Of these, 368 (64%) reported being in a relationship that involved sexual activity and were included in the present analyses. All procedures were approved by the institutional review board at the University of Washington.

Measures

Sexual function, sexual satisfaction, and use of aids for sexual activity were measured using
items taken from the Patient Reported Outcomes Measurement Information System’s (PROMIS) sexual function item bank. Using 5- or 6-point anchored scales, participants described their (a) satisfaction with their sex life, (b) ability to have a satisfying orgasm, and (c) ability to get and maintain an erection (men) or become lubricated during sex (women). Items also assessed use of aids to sexual functioning, including erectogenic medication, vacuum pump devices, personal lubricants, and hormones for sexual activity. All items referred to the previous 30 days.

Symptom severity and the presence of health conditions were assessed as follows: (a) depressive symptoms (Patient Health Questionnaire–9 [PHQ-9]) \(14,15\); (b) pain interference (PROMIS Pain Interference – Short Form) \(16,17\); (c) fatigue and anxiety (PROMIS items from the Profile-29 measure) \(17,18,19,20\); and (d) spasticity and lower extremity weakness (measured on a 5-point scale ranging from not at all to very much). Mobility was measured with the 6-point Gross Motor Function Classification System \(0 = I \ have \ no \ mobility \ limitations \ to \ 5 = severely \ limited \ self-mobility \ even \ with \ the \ use \ of \ assistive \ technology\). \(21\)

Analyses

We first described the sample by rates of satisfaction, dysfunction, and aid use and determined whether these differed by diagnostic group via between-group chi-square analyses (categorical variables) or independent samples t tests (continuous variables). Relationships among sexual satisfaction, sexual dysfunction, and aid use were established via Pearson correlations. For men, we compared satisfaction with ability to get and maintain an erection, ability to have a satisfying orgasm, and use of erectogenic pills, penis pump, injection, and personal lubricants. For women, we compared satisfaction with lubrication difficulty, ability to have a satisfying orgasm, and use of vaginal moisturizers, hormones, and personal lubricants.

We identified secondary conditions associated with satisfaction. As an initial screen, we computed zero order Pearson’s correlation coefficients to determine which predictors should be included for testing in multiple regression. The following predictors were significantly \(P < .05\) associated with sexual satisfaction: anxiety, pain, depression, and spasticity. We confirmed that no continuous measures showed significant skewness or heteroskedasticity, then we ran 2 linear regression models to determine the contribution of these predictors to satisfaction separately in men and women, controlling for sexual dysfunction, diagnostic group, and mobility.

Results

Demographics

The mean age for the sample was 58.7 years \((SD = 5.8)\). Fifty-five percent of participants were male \((n = 120)\) and 45\% were female \((n = 98)\). Participants were asked if they had a physician-confirmed diagnosis. Thirty-two percent of participants had an SCI, 38\% had MD, and 30\% had PPS. Most identified as non-Hispanic White \((n = 205; 94\%)\) and reported receiving at least a college degree \((n = 142; 65\%).\) Of the total sample, 218 individuals \((37.8\%)\) reported engaging in sexual activity in the past 30 days.

Use of sexual aids, dysfunction, and satisfaction

Prevalence statistics are presented in Table 1. The most commonly used aid was personal lubricant; the least frequently reported aids were vacuum pumps or erectogenic injections (with only individuals with SCI reporting using a pump). Individuals with SCI (particularly men) reported the lowest levels of satisfaction. However, participants with SCI also reported generally better sexual function than any other group, including better ability to have a satisfying orgasm and fewer difficulties with lubrication during activity (women). Notably, 17\% of men with SCI reported that they “had not tried” to achieve an erection in the past 30 days, compared to 0\% of men with PPS or MD.

Correlations among aid use, dysfunction, and satisfaction

For men and women, sexual satisfaction was most strongly associated with sexual function. Significant correlates of satisfaction included ability to have a satisfying orgasm \((r = 0.61)\),
erectile function \( r = 0.56 \), quality of erection \( r = 0.44 \), and ability to lubricate \( r = 0.36 \). There were significant associations between function and aid use, such that men who reported good erectile function were more likely to use personal lubricants \( r = 0.30 \) and those who reported using personal lubricants were more likely to report use of erectogenic aids \( r = 0.23 \). For women, difficulty with lubrication was associated with use of vaginal moisturizers \( r = -0.44 \). Results on aid use suggest that for men, use of erectogenic medication was negatively associated with satisfaction \( r = -0.20 \). No aid for sexual activity was associated with satisfaction for women.

**Regression model examining predictors of satisfaction**

Regression results examining predictors of sexual satisfaction are presented in [Table 2](#). For men and women, sexual dysfunction remained a strong predictor of satisfaction \( P < .001 \),
beyond any effects of disability type or mobility impairment. For women, depression was also a significant predictor, after controlling for the effects of sexual function ($P < .01$).

**Discussion**

Sexuality is an important component of quality of life for all individuals, regardless of age or physical ability.\(^6\)–\(^22\) However, this preliminary study is one of the first to look at sexual function, satisfaction, and aid use in middle-aged individuals with physical disability. Our data emphasize the importance of sexual activity for people with disabilities, with 38% of our sample reporting sexual activity in the past 30 days. Although this is somewhat lower than other reported samples of able-bodied middle-aged adults,\(^23,24\) sexuality is clearly an important issue for adults with LTPD.

The majority of our sample described themselves as being “somewhat” or “quite a bit” satisfied, which is consistent with samples of able-bodied middle-aged individuals.\(^25,27\) Reported rates of sexual dysfunction, particularly erectile and lubrication difficulty, appear to be greater in our sample when compared to data of individuals without physical disability.\(^25,27\)

Fortunately, there is evidence from these data that many individuals with disability and sexual dysfunction are willing to experiment with aids

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**Table 2. Predictors of sexual satisfaction in men and women with MD, PPS, and SCI**

<table>
<thead>
<tr>
<th>Step and variable</th>
<th>Step 1: Control</th>
<th>Step 2: Sexual function</th>
<th>Step 3: Secondary conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted $R^2$</td>
<td>$R^2$ change $F$</td>
<td>$R^2$ change</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostic group PPS, yes/no</td>
<td>0.02</td>
<td>0.04</td>
<td>1.69</td>
</tr>
<tr>
<td>Diagnostic group SCI, yes/no</td>
<td>-0.07</td>
<td>-0.55</td>
<td>.58</td>
</tr>
<tr>
<td>Mobility</td>
<td>-0.14</td>
<td>-1.29</td>
<td>.20</td>
</tr>
<tr>
<td>Step 2: Sexual function</td>
<td>0.33</td>
<td>0.32</td>
<td>17.90</td>
</tr>
<tr>
<td>Ability to get and keep an erection</td>
<td>0.24</td>
<td>1.89</td>
<td>.06</td>
</tr>
<tr>
<td>Ability to have a satisfying orgasm</td>
<td>0.36</td>
<td>3.06</td>
<td>.00 (^*)</td>
</tr>
<tr>
<td>Step 3: Secondary conditions</td>
<td>0.43</td>
<td>0.06</td>
<td>2.65</td>
</tr>
<tr>
<td>Pain</td>
<td>-0.15</td>
<td>-1.61</td>
<td>.11</td>
</tr>
<tr>
<td>Depression</td>
<td>-0.19</td>
<td>-1.59</td>
<td>.12</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.05</td>
<td>0.39</td>
<td>.70</td>
</tr>
<tr>
<td>Spasticity</td>
<td>-0.04</td>
<td>-0.48</td>
<td>.63</td>
</tr>
</tbody>
</table>

Note: MD = muscular dystrophy; PPS = post-polio syndrome; SCI = spinal cord injury.

\(^*\) $P < .05$. \(^{**}\) $P < .01$. \(^{***}\) $P < .001$. 

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not surprising given that mood is directly related to libido\textsuperscript{29,30} and that some antidepressants (and particularly the selective serotonin reuptake inhibitor [SSRI] class) may be associated with anorgasmia and less vaginal lubrication.\textsuperscript{31,32}

Our results are limited by the cross-sectional self-report design and absence of partner interview. However, these initial findings emphasize the importance of sexual activity in adults aging with physical disability, especially for those aging with SCI. Clinicians should address challenges with sexual expression openly and discuss options to restore or improve function with patients and their partners. Factors such as depression may have a deleterious effect on sexual satisfaction and quality of life and should remain a target for assessment and intervention.

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