

## EPIDEMIOLOGY &amp; RISK FACTORS

## Sexual Functioning in Men With and Without Disabilities: Findings From a Representative Sample of Australian Men

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## ABSTRACT

**Introduction:** Studies on sexual function in men with disabilities have mainly relied on clinical samples; population-based evidence on this topic is limited.

**Aim:** The aim of this study was to compare aspects of sexual function between disabled and nondisabled men using a representative sample.

**Methods:** We used data from Ten to Men, a national cohort study of Australian men aged 18–55 years. We first compared the prevalence of 15 sexual function-related difficulties in disabled vs non-disabled men. Next, we used Poisson regression to examine associations between disability and sexual function. The main analytic sample had 8,496 men. Weights and adjustments appropriate to the sampling methodology were applied. Models adjusted for potential confounders. Results were reported as prevalence ratios (PRs). *P* values of  $< .05$  were considered statistically significant.

**Main Outcome Measure:** Outcomes were 15 individual items from the National Survey of Sexual Attitudes and Lifestyles–Sexual Function, a validated measure of sexual function with items in 3 domains: physiopsychological aspect; relational aspect; and global self-rating (the 16th item on help-seeking was excluded). These were coded as binary variables denoting past-year sexual problems.

**Results:** Disabled men had higher prevalence of all outcomes than nondisabled men. 25.6% of men with disabilities and 15.1% of nondisabled men experienced at least 2 of 15 difficulties. The most prevalent problems were “orgasmed too early” (43.8% of disabled men, 37.1% of nondisabled men), imbalance of sexual desire between partners (47.6% of disabled men, 39.2% of nondisabled men), and overall sexual dissatisfaction (39.4% of disabled men, 26.7% of nondisabled men). All adjusted PRs were  $> 1.00$  for disability; associations were statistically significant except “partner experienced sexual difficulties” (PR = 1.23; 95% CI = 0.99–1.53; *P* = .058) and “orgasmed too early” (PR = 1.16; 95% CI = 1.00–1.35; *P* = .050). “Presence of discomfort/pain” had the largest adjusted PR for disability (PR = 2.77; 95% CI = 1.89–4.06; *P*  $< .001$ ).

**Clinical Implication:** This population-based analysis on the relationship between disability and sexual function contextualizes evidence from clinical studies. Findings suggest that disparities between men with and without disability exist but are not uniform across different aspects of sexual function.

**Strengths & Limitations:** Two major strengths of this study are that the sample included a nondisabled reference group and results are generalizable to Australian men. A key limitation is that disability and sexual function measures are self-reported.

**Conclusion:** This study provides a broad foundation of population-based evidence about sexual function in men with disabilities, relative to men without, showing positive associations between disability and 13 of 15 sexual difficulties. **Bollier A-M, King T, Shakespeare T, et al. Sexual Functioning in Men With and Without Disabilities: Findings From a Representative Sample of Australian Men. J Sex Med 2019;16:1749–1757.**

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**Key Words:** Sexual Function; Sexual Dysfunction; Sexual Satisfaction; Disability; Men; Male

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## INTRODUCTION

Clinical research has suggested that sexual difficulties are prevalent among men with disabilities, including those with multiple sclerosis,<sup>1</sup> spinal cord injury,<sup>2</sup> and physical disabilities

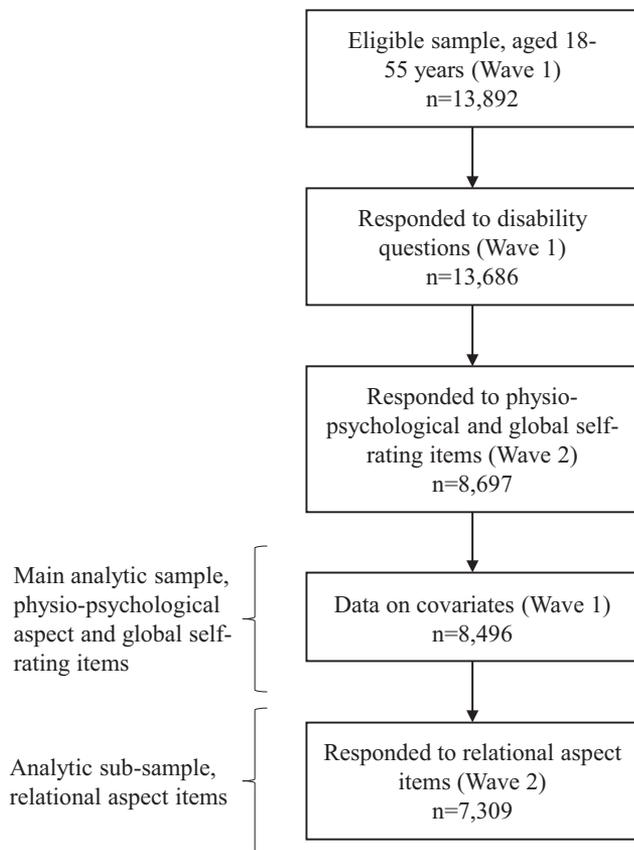


Figure 1. Sample flow.

more broadly.<sup>3</sup> These studies are not representative of the diverse population of people with disabilities, whose conditions or impairments may be physical, cognitive, intellectual, psychosocial, or sensory. Although some population-based research has revealed disparities in sexual function between men with and without disabilities,<sup>4,5</sup> the aspects of sexual function they report on are limited. To support disabled men in the general population, it is important to gain a more complete understanding of sexual function using representative data.

The estimated prevalence of disability is approximately 15% globally.<sup>6</sup> Disability may be present from birth or acquired later in life; it comprises a range of conditions and impairments that affect individuals to varying degrees of impact, permanence, and comorbidity. Two well-known conceptual frameworks for understanding disability are the medical model, which frames disability as an individual affliction to be treated or managed, and the social model, which understands disability as the product of barriers that are imposed on individuals with conditions or impairments, limiting their full participation in society.<sup>7,8</sup> Although these 2 models are often portrayed in opposition, the World Health Organization International Classification of Functioning, Disability and Health (ICF) integrates aspects of both. Under the ICF, disability is defined by multidirectional relationships among individual characteristics, functional difficulties in performing activities, environmental factors, and barriers to social participation.<sup>9</sup>

Like disability, sexual function is not exclusively biomedical.<sup>10</sup> Dimensions of sexual function include physio-psychological aspects (eg, arousal), relational aspects (eg, partners' emotional connection), and appraisal of one's sex life (eg, sexual satisfaction).<sup>11</sup> Mitchell et al<sup>11</sup> (2012) define sexual function as "the extent to which an individual is able to participate in a sexual relationship as he or she would wish"—recognizing its multidimensionality and personal meaning.

Although sexual problems are framed as abnormal,<sup>12,13</sup> population-based studies have shown that male sexual dysfunction is common.<sup>4,5,13,14</sup> For example, an analysis of data from a population-based sample of adult Australian men aged 18–55 years revealed that over half had experienced at least 1 of 8 sexual difficulties for 3 or more months of the past year, with over one-third reporting that they reached climax too quickly and 1 in 5 reporting that they lacked interest in sex.<sup>4</sup> Data from a representative study in Great Britain showed that approximately one-third of male subjects aged 16–74 years were not satisfied with their sex life.<sup>5</sup> In both studies, sexual problems increased with age and were associated with lifestyle factors, including chronic health problems and disability.<sup>4,5</sup> Aside from this research, population-based evidence on relationships between disability and sexual function are scarce.

Although medical and psychological research has assessed sexual function in men with disabilities, these analyses focus largely on people with acquired or progressive disabilities that have physical symptoms, such as spinal cord injury, multiple sclerosis, or arthritis. On the whole, the evidence suggests that difficulties related to sexual function are common in this population.<sup>1,2,15</sup> Some studies have demonstrated that although sexual satisfaction tends to decline immediately after disability acquisition, it may improve over time as men adapt to their condition.<sup>15,16</sup> A disadvantage of previous studies is that they have mostly drawn on small, nonrepresentative samples, often without nondisabled comparison groups. Thus, our understanding of sexual function in men with disabilities in the broader population remains limited.

This analysis aims to investigate associations between disability and sexual function in the general male population. We draw on a national sample of Australian men aged 18–55 years from Ten to Men, a study of male health. Unlike clinical studies, Ten to Men uses a broad measure for disability (ie, is not limited to people with specific condition/impairment types), enables comparison with a nondisabled reference group, and is representative of the population. Studying the association between disability and sexual function in Ten to Men, therefore, establishes a backdrop of population-based evidence, helping to contextualize clinical findings, which are not generalizable because their samples are restricted to people receiving clinical treatment.

Our work builds on the recent cross-sectional analysis by Schlichthorst et al<sup>4</sup> (2016) that identified disability, alongside other personal characteristics, such as self-rated health and smoking status, as a key predictor of 8 sexual difficulties, using data from the first wave of Ten to Men. Here, we focus on

**Table 1.** Weighted column proportions, stratified by disability, describing characteristics of the main analytic sample, n = 8,496

	No disability (wave 1) N = 8,008		Disability (wave 1) N = 488	
	Weighted % <sup>a</sup>	95% CI	Weighted % <sup>a</sup>	95% CI
Age group in years (wave 1)				
18–25	12.2	11.0–13.5	9.1	6.6–12.3
26–35	24.1	22.3–26.0	21.5	16.5–27.4
36–45	33.2	31.7–34.7	27.2	22.3–32.7
46–55	30.5	28.9–32.1	42.3	36.7–48.0
Educational attainment (wave 1)				
Year 12 or higher	67.8	65.9–69.6	48.5	42.1–55.0
Less than year 12	32.2	30.4–34.1	51.5	45.0–57.9
Employment status (wave 1)				
Employed	90.2	89.1–91.3	73.7	67.9–78.8
Unemployed, seeking	5.9	5.1–6.7	9.7	6.8–13.7
Unemployed, not seeking	3.9	3.4–4.5	16.6	12.7–21.4
SEIFA quintile				
1 (greatest disadvantage)	17.6	14.6–21.1	25.3	19.7–31.9
2	21.3	17.7–25.4	27.6	21.2–34.9
3	20.9	17.1–25.3	19.3	14.6–25.0
4	19.3	15.9–23.3	14.0	10.2–18.7
5 (least disadvantage)	20.8	17.0–25.2	13.9	9.1–20.6
Country of birth (wave 1)				
Australia	74.6	72.8–76.4	78.3	72.8–83.0
Outside Australia	25.4	23.6–27.2	21.7	17.0–27.2

SEIFA = Socio-Economic Indexes for Areas.

<sup>a</sup>Column proportion (may not sum to 100.0 due to rounding error).

disability and examine its association with 15 aspects of sexual function. We use 2 waves of data so that disability status can be established prior to observing sexual function outcomes. In this study, our research question is: Does the proportion of men reporting adverse sexual function (across 15 different outcomes) differ between those with and without disability?

## METHODS

### Data Source

Data were sourced from waves 1 and 2 of Ten to Men, a population-based longitudinal study of male health involving 14,000 Australian men aged 18–55 years. The study has been described in detail elsewhere.<sup>17</sup> Briefly, the Ten to Men cohort was recruited in 2013/2014 using stratified, multistage, cluster random sampling with households as the primary unit of sampling (eligible men were aged 55 and younger). Adult participants completed paper questionnaires with content across 5 domains (physical health, mental health and wellbeing, health behaviors, social determinants of health, and health service utilization and health knowledge). The response rate for adult men in wave 1 was 36% and retention into wave 2, conducted in 2015/2016, was 76%. The study received approval from the University of Melbourne Human Research Ethics Committee and conformed to Declaration of Helsinki principles.

### Variables

Disability (main exposure) was measured using the Washington Group Short Set (WG-SS) questionnaire, an internationally used disability identifier based on the ICF framework. Questions in the WG-SS are designed to capture common functional limitations without identifying specific conditions or impairment types.<sup>9</sup> Respondents stated if they had difficulty in six core activity domains: seeing, hearing, walking or climbing stairs, remembering or concentrating, self-care, and understanding or communicating. Following Washington Group guidelines,<sup>18</sup> men who reported “a lot of difficulty” or “cannot do at all” in at least 1 domain were classified as having a disability. Subjects with missing and invalid responses (n = 206) were not included for analysis.

Outcomes of interest were 15 individual items from the National Survey of Sexual Attitudes and Lifestyles-Sexual Function (Natsal-SF),<sup>11</sup> a measure of sexual function developed for the British National Survey of Sexual Attitudes and Lifestyles (Natsal 3) and validated for use in community surveys. The male version has 16 items for those who report past-year sexual activity (oral, vaginal, or anal sex). Items span 3 subscales: physio-psychological aspect (eg, erectile difficulty); relational aspect (eg, compatibility of sexual preferences with one’s partner, for those in at least a 12-month relationship); and global self-rating (eg, sexual satisfaction). Although the Natsal-SF is designed to be scored as a unitary, continuous measure of sexual function, previous studies

**Table 2.** Unadjusted, weighted proportions by disability status, differences in proportions between men with and without disability, and adjusted, weighted PRs for relationships between disability and physio-psychological items using Poisson regression, controlling for age group, educational attainment, employment status, SEIFA, and country of birth, n = 8,496 (main sample)

	Proportions				Poisson regression		
	Weighted proportion <sup>a</sup>	$P_{\text{disability}} - P_{\text{no disability}}$	95% CI	P value	Adjusted PR	95% CI	P value
<b>Orgasmed too early</b>							
No disability (ref)	37.1				–		
Disability	43.8	6.6	2.1–11.1	.003	1.16	1.00–1.35	.050
<b>Unable to reach orgasm</b>							
No disability (ref)	16.3				–		
Disability	31.3	15.1	10.9–19.3	< .001	1.77	1.47–2.13	< .001
<b>Lacked interest in having sex</b>							
No disability (ref)	16.8				–		
Disability	34.1	17.3	13.0–21.6	< .001	1.81	1.52–2.16	< .001
<b>Erectile dysfunction</b>							
No disability (ref)	15.0				–		
Disability	28.4	13.4	9.3–17.4	< .001	1.58	1.29–1.93	< .001
<b>Anxiety during sex</b>							
No disability (ref)	12.1				–		
Disability	23.8	11.7	7.9–15.6	< .001	1.77	1.38–2.26	< .001
<b>Lack of sexual enjoyment</b>							
No disability (ref)	11.2				–		
Disability	26.4	15.2	11.2–19.1	< .001	2.13	1.70–2.67	< .001
<b>Lack of sexual arousal/excitement</b>							
No disability (ref)	6.9				–		
Disability	18.4	11.5	8.1–15.0	< .001	2.46	1.81–3.32	< .001
<b>Presence of discomfort/pain</b>							
No disability (ref)	3.3				–		
Disability	11.0	7.8	4.9–10.6	< .001	2.77	1.89–4.06	< .001

PRs = prevalence ratios; SEIFA = Socio-Economic Indexes for Areas.

<sup>a</sup>Row proportion.

have reported on individual items.<sup>4,5,19</sup> As our interest was in comparing sexual function between disabled and nondisabled men—and a summary Natsal-SF score may conceal differences—we analyzed items independently as binary variables, signifying the presence or absence of sexual difficulty. The 16th item on help-seeking was not included because it does not directly measure an aspect of sexual function. Further details on the Natsal-SF and outcome variable classification are outlined in [Appendix A](#).

Statistical models adjusted for potentially confounding socio-demographic variables, including age (18–25, 26–35, 36–45, and 46–55 years); employment status (employed; unemployed and seeking work; unemployed but not seeking work); educational attainment (year 12 or greater, year 11 or less), country of birth (Australia or another country); and area-based socioeconomic disadvantage (categorized into quintiles based on the Index of Relative Socio-Economic Disadvantage<sup>20</sup> with the lowest quintile representing residence in areas of greatest disadvantage). Income was not included due to high frequency of nonresponse (n > 1,000) and Aboriginal and Torres Strait Islander (ATSI) status was not included to due insufficient distribution of ATSI participants with disabilities across confounder strata.<sup>21</sup>

## Approach to Analysis

For each sexual difficulty item, we first calculated prevalence proportions and their differences between men with and without disabilities. We then used multivariate Poisson regression to estimate adjusted prevalence ratios (PRs) for the association between disability and sexual difficulties, fitting each Natsal-SF item as an outcome in 15 models, all adjusting for the same potential confounders. We used 2 waves of data to ensure that disability and covariate classification preceded the reporting of sexual function outcomes. Disability and covariates, which refer to the present time, were measured at wave 1. Natsal-SF items (sexual difficulty outcomes), which refer to the 12-month retrospective period, were measured at wave 2. Based on previous work by Schlichthorst et al<sup>4</sup> (2016), we planned a priori to examine interactions between disability and age, fitting 2-way interactions between disability and age group (dichotomized at 18–34 and 35+ years due to limited statistical power) and assessing goodness of fit with Wald tests.

Analyses used 2 samples; a main sample for Natsal-SF physio-psychological aspect and global self-rating questions, and a “relationship” subsample for those who responded to the relational

**Table 3.** Unadjusted, weighted proportions by disability status, differences in proportions between men with and without disability, and adjusted, weighted PRs for relationships between disability and relational aspect items using Poisson regression, controlling for age group, educational attainment, employment status, SEIFA, and country of birth, n = 7,309 (relationship subsample)

	Proportions				Poisson regression		
	Weighted proportion <sup>a</sup>	$p_{\text{disability}} - p_{\text{no disability}}$	95% CI	P value	Adjusted PR	95% CI	P value
Imbalance in levels of desire							
No disability (ref)	39.2				–		
Disability	47.6	8.4	3.8–13.0	< .001	1.27	1.09–1.48	.002
Incompatibility in sexual preferences							
No disability (ref)	16.3				–		
Disability	21.4	5.0	1.3–8.8	.004	1.37	1.05–1.80	.023
Partner experienced sexual difficulties							
No disability (ref)	22.8				–		
Disability	27.5	4.6	0.6–8.7	.018	1.23	0.99–1.53	.058
Lacked emotional connection							
No disability (ref)	4.2				–		
Disability	7.2	3.0	0.6–5.3	.002	1.69	1.07–2.66	.025

PRs = prevalence ratios; SEIFA = Socio-Economic Indexes for Areas.

<sup>a</sup>Row proportion.

aspect questions. Figure 1 displays sample flow details. There were 13,892 male participants aged 18–55 in wave 1. After excluding those who did not provide data on disability and covariates at wave 1, and Natsal-SF physio-psychological and global self-rating items at wave 2, the main analytic sample included 8,496 men. The second analytic sample was restricted to the 7,309 men who were currently in a relationship for at least 12 months and responded to the Natsal-SF relational aspect items.

Analyses were conducted in Stata version 15.0 (StataCorp LLC, College Station, TX, USA).<sup>22</sup> Data were analyzed using methods appropriate for survey data (ie, with sample weights and adjustments for clustering and stratification). The procedures and materials used in Ten to Men, including sampling strategy and analytical weights, have been described elsewhere.<sup>17,23</sup> A statistically significant P value was defined as < 0.05.

## RESULTS

### Descriptive findings

Disability prevalence in the main analytic sample was 5.6%. Appendix B gives a detailed breakdown of WG-SS responses in disabled vs nondisabled men. Characteristics of the main sample at wave 1, stratified by disability status, are displayed in Table 1. Tables 2–4 display results by Natsal-SF subscale: physio-psychological aspect (main sample, Table 2); relational aspect (relationship subsample, Table 3); and global self-rating (main sample, Table 4).

Across all subscales, most sexual difficulties were common. Prevalence proportions for over half of the 15 outcomes exceeded 25.0% among men with disabilities and 15.0% among nondisabled men. Compared to nondisabled men, men with

disabilities had higher prevalence of all 15 sexual difficulties. Among the 7,309 participants who responded to all 15 items, 18.8% of nondisabled men and 27.5% of men with disabilities had 1 sexual difficulty; 15.1% of nondisabled men and 25.6% of men with disabilities had 2 or more (data not shown). A large proportion of participants reported 0 sexual difficulties: 66.2% of nondisabled men and 46.9% of men with disabilities had 0 of 15 (data not shown).

Differences in prevalence proportions between disabled and nondisabled men were generally smaller for relational aspect (relationship subsample, Table 3) than physio-psychological aspect (main sample, Table 2) and global self-rating items (main sample, Table 4). The 3 items with the smallest prevalence differences were all relational aspect items: incompatibility in sexual preferences (difference: 5.0%; 95% CI = 1.3–8.8; P = .004); partner experienced difficulties (difference: 4.6%; 95% CI = 0.6–8.7; P = .018); and lacked emotional connection (difference: 3.0%; 95% CI = 0.6–5.3; P = .002). Prevalence differences exceeded 15.0% for inability to reach orgasm, lacked interest in having sex, and lacked sexual enjoyment. Differences ranging from 10–15% were observed for erectile dysfunction; anxious during sex; lacked arousal/excitement during sex; overall dissatisfaction with sex life; and avoided sex. Items with high prevalence were not always associated with the largest prevalence differences; for example, “imbalance in levels of desire” had a prevalence of 39.2% for nondisabled men and 47.6% for disabled men—an 8.4% difference (95% CI = 3.8–13.0; P < .001). Similarly, some low-prevalence items had relatively large prevalence differences, such as lack of sexual arousal/excitement (6.9% of nondisabled men and 18.4% of disabled men; difference: 11.5; 95% CI = 8.1–15.0; P < .001).

**Table 4.** Unadjusted, weighted proportions by disability status, differences in proportions between men with and without disability, and adjusted, weighted PRs for relationships between disability and global self-rating items using Poisson regression, controlling for age group, educational attainment, employment status, SEIFA, and country of birth, n = 8,496 (main sample)

	Proportions				Poisson regression		
	Weighted proportion <sup>a</sup>	$P_{\text{disability}} - P_{\text{no disability}}$	95% CI	P value	Weighted, adjusted PR	95% CI	P value
Overall dissatisfaction with sex life							
No disability (ref)	26.7				–		
Disability	39.4	12.7	8.2–17.1	< .001	1.48	1.27–1.72	< .001
Overall distress/worry about sex life							
No disability (ref)	15.1				–		
Disability	24.3	9.2	5.3–13.1	< .001	1.53	1.23–1.92	< .001
Avoided sex							
No disability (ref)	11.9				–		
Disability	25.8	13.8	9.9–17.8	< .001	2.14	1.72–2.67	< .001

PRs = prevalence ratios; SEIFA = Socio-Economic Indexes for Areas.

<sup>a</sup>Row proportion.

## Statistical Models

We found no evidence of interaction between disability and age. Therefore, we present results as aggregate estimates for men with disabilities relative to nondisabled men. Most estimated PRs were statistically significant and above 1, indicating positive associations between disability and each outcome. Although PRs were nonsignificant for “orgasmed too early” (main sample, Table 2) and “partner experienced sexual difficulties” (relationship subsample, Table 3), the 95% CIs predominantly did not include the null value of 1.

“Orgasmed too early” had an estimated PR of 1.16 (95% CI = 1.00–1.35;  $P = .050$ ) for disability, a considerably smaller estimate than those for other physio-psychological aspect items (main sample, Table 2). Lack of sexual enjoyment, lack of sexual arousal/excitement, and presence of discomfort/pain from sex had estimated PRs for disability  $> 2$ . Men with disabilities had an adjusted relative prevalence of dissatisfaction with and distress about one’s sex life approximately 50% greater than nondisabled men (dissatisfaction: PR = 1.48; 95% CI = 1.27–1.72;  $P < .001$ ; distress: PR = 1.53; 95% CI = 1.23–1.92;  $P < .001$ ). Of the global-self-rating items, the PR of 2.14 (95% CI = 1.72–2.67;  $P < .001$ ) for “avoided sex” was the highest in magnitude (main sample, Table 4). PRs for the associations between disability and relational aspect items (relationship subsample, Table 3) were modest compared to most physio-psychological aspect (main sample, Table 2) and global self-rating items (main sample, Table 4). Among relational aspect items, estimates ranged from 1.23 for “partner experienced sexual difficulties” (95% CI = 0.99–1.53;  $P = .058$ ) to 1.69 for “lacked emotional connection” (95% CI = 1.07–2.66;  $P = .025$ ).

## DISCUSSION

This analysis provides comprehensive evidence on associations between disability and sexual function in a representative sample

of sexually active men aged 18–55, adding breadth to a sparse area of population-based research. After adjustment, there was a positive association between disability and all 15 adverse outcomes except “partner experienced sexual difficulties” and “orgasmed too early.” “Presence of discomfort/pain” had the largest estimated PR for disability at 2.77. In general, adjusted PRs for disability were lower in magnitude for the relational aspect outcomes relative to estimates for physio-psychological aspect and global self-rating items. This comparison should be interpreted with caution, however, given that relational aspect respondents were a subsample of those who responded to the other Natsal-SF items.

It is important to consider that the Natsal-SF was designed to measure sexual function, not dysfunction.<sup>11</sup> Here, we presented findings in terms of dysfunction to accurately convey data for individual items, as Natsal-SF questions are worded in terms of adverseness (eg, “Have you felt anxious...?”; “I feel distressed...”). Reframing findings, we observe that most disabled and nondisabled men gave responses consistent with sexual function on all 15 items.

Our results contradict those from an earlier analysis using representative data from the Australian Study of Health and Relationships (ASHR); here, Richters et al<sup>13</sup> (2003) did not find evidence of association between disability and sexual problems in men aged 16–59, a similar age range to participants in Ten to Men. However, in their study, disability referred to mobility restrictions, whereas here, disability included a broader range of functional difficulties. Furthermore, sexual function in the ASHR analysis was classified as a binary variable (0 vs 1–9 sexual problems). Because nearly half of the men in their sample had 1 or more sexual problems, dichotomization may have caused information loss.<sup>24</sup>

The high magnitude estimated PR for disability associated with pain in this study is in some regard reasonable to expect,

given that pain accompanies many disabilities and is a defining feature of some conditions. For pain as a result of sex and other difficulties, future studies of sexual function in men with disabilities would benefit from more detailed analysis, such as disaggregation of disability by condition/impairment type. Here, we did not disaggregate disability data by domain of function because the WG-SS was not designed to be used in this manner; some domains of function (eg, difficulty walking or using stairs and difficulty with self-care) accompany a range of disabilities, whereas others (eg, difficulty seeing and difficulty hearing) map more directly to specific conditions/impairments.<sup>9</sup>

Sexual satisfaction is understood to contribute to relationship satisfaction in certain circumstances,<sup>25</sup> and some research has documented associations between sexual satisfaction and health,<sup>26</sup> as well as quality of life.<sup>11,27,28</sup> Although over a quarter of the men in this study were dissatisfied with their sex lives, men with disabilities in this study still had 50% greater adjusted prevalence of dissatisfaction than nondisabled men. Given this finding, more research is warranted to understand how sexual satisfaction impacts the lives of men with disabilities.

The estimated PR for “lacked interest” resonates with results from the National Survey of Sexual Attitudes and Lifestyles in Britain, in which the presence of disability or long-standing illness predicted lack of interest in sex.<sup>29</sup> Yet, in a small, Australian, mixed-methods study by Taleporos and McCabe<sup>30</sup> (2001), fewer than 1 in 5 participants (male and female) with physical disabilities agreed or strongly agreed with the statement, “*Because I have a disability, I am not interested in sex*” (emphasis added). Their finding, albeit with a nonrepresentative sample, suggests that factors beyond individual condition or impairment—such as social barriers or internalized stigma<sup>30</sup>—may contribute to a lack of interest in sex among some men with disabilities.

Although men with disabilities are sexually active, people often assume that they do not experience sexual attraction or cannot have sex.<sup>7,16,31</sup> Societal attitudes and social exclusion may limit opportunities for men with disabilities to express their sexuality, lower confidence in the context of sexual relationships, or perpetuate normative expectations for sexual performance, in which men with disabilities feel pressure to overcome their perceived “limitations” to satisfy their partners.<sup>32–34</sup> Such experiences could feasibly impact aspects of sexual function, including distress, anxiety, perceived performance, or avoidance. At the same time, all members of society grapple with normative expectations surrounding sexual function.<sup>13</sup> Tools like the Natsal-SF do not examine individuals’ decisions to subscribe to, redefine, or reject normative expectations about sexual function; they measure what is, on average, meaningful to members of society.<sup>11</sup>

This analysis has several limitations. Although it uses 2 waves of data, it does not analyze incident sexual difficulties, but rather

their prevalence within a retrospective 1-year period. Because WG-SS disability questions refer to current difficulties, it was not possible to examine how sexual function varies by disability duration, permanence, or timing of acquisition—although the future availability of more waves of data will enable this. Additionally, the WG-SS does not identify individuals with milder conditions and impairments.<sup>35</sup>

There are several limitations related to the Natsal-SF questions. Consistent with other studies, Ten to Men participants were only eligible to respond to the Natsal-SF if they were sexually active in the past 12 months.<sup>19,36</sup> This means that the observed associations between disability and Natsal-SF items are only generalizable to sexually active men. The Natsal-SF is less aligned with diagnostic criteria for sexual dysfunction than measures like the International Index of Erectile Function<sup>37</sup> or the Premature Ejaculation Diagnostic Tool,<sup>38</sup> this limits its clinical relevance and comparability against other evidence. Because responses to the Natsal-SF are subjective, participants may have different perceptions of what constitutes problems like climaxing “too quickly.” Another limitation is that relational aspect items are only measured in participants in a 12+ month relationship, even though men in other relationship circumstances could theoretically respond to questions about their sexual partnership(s). Relational items also pose interpretational challenges; for example, compatible sexual preferences may not be as important to sexual function as effective communication and consent practices.

Selection bias may limit the generalizability of findings from this analysis. A recent appraisal of the representativeness of Ten to Men found that even though the overall response fraction at wave 1 was 35%, and despite older, Australian born, and nonurban dwelling men being over-represented among participants relative to their population counterparts, the sample has sufficient heterogeneity across key demographic characteristics to estimate generalizable exposure-outcome associations.<sup>17</sup> Still, attrition between waves may have contributed to selection bias, even though retention into the second wave of Ten to Men was comparable to other contemporary longitudinal cohort studies.<sup>39,40</sup>

## CONCLUSIONS

Sexual function in men with disabilities is often problematized. Our representative findings add perspective to this under-researched area. Although comparatively more men with disabilities than men without experienced problems related to sexual function, many of these problems were common regardless of disability status. This suggests that when male patients with disabilities present with sexual difficulty, clinicians should not assume that the problem is necessarily linked to their condition or impairment. Our results also highlight where disparities between disabled and nondisabled men were negligible, such as for premature ejaculation, versus more pronounced, such as for

sexual excitement. This information may help identify knowledge gaps and steer future research in the area. Further study is needed to understand the contribution of social factors like disability-based stigma to sexual function, and to examine the importance of sexual function to the wellbeing of men with disabilities.

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## SUPPLEMENTARY DATA

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jsxm.2019.07.021>.