Conformity to masculine norms: differences between men with and without a disability

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Abstract

There is a noted paucity of quantitative research examining the inter-relationship between masculinity and disability. We analyzed a sample of men aged 18-55 from the Australian Longitudinal Study on Male Health (the *Ten to Men* Study) to investigate associations between disability and conformity to norms of masculinity viewed as traditional in Western societies. To assess masculinity, we used the Conformity to Masculine Norms Inventory-22 (CMNI-22), both as an overall scale, and across 11 different sub-scales. We found little difference between men with and without a disability on the overall masculinity scale however differences were observed on sub-scales. Men with a disability reported greater conformity to Self-Reliance norms, and less conformity to norms related to Pursuit of Status, Heterosexual Presentation, and Primacy of Work. These results suggest that men with disabilities reformulate masculinity to assemble a masculine identity that draws on norms such as Self-Reliance, but places less importance on other elements of masculinity seen as traditional in Western societies.

Keywords: Masculinity, CMNI, Australia, Disability, Inequality, Quantitative

Public impact statement:

- Evidence is lacking regarding the relationship between masculinity and disability. This analysis uses population data to compare similarities and differences between how men with and without a disability conform to norms of masculinity.
- The results demonstrate that men with a disability differ from those without a disability on some key masculinity subscales. Men with a disability report greater conformity to Self-Reliance norms, and less conformity to norms related to the breadwinner role (Pursuit of Status and Primacy of Work), and Heterosexual Presentation.
- Further research is needed to understand how these differences in conformity to masculine norms might impact on health and wellbeing.

Conformity to Masculine Norms: Differences Between Men with and without a Disability

The paradigmatic conflict between disability and masculinity has been widely observed by writers in Australia, the UK and the US: while norms of masculinity often connote independence and physical power, disability is often conceived of in terms of dependence, helplessness, and subordination (Barrett, 2014; Shuttleworth, Wedgwood, & Wilson, 2012). It is posited that the conceptual incongruence that these concepts represent may induce "status inconsistency" in men with disability (Gerschick, 2000, p 1265), whereby their identification as having a disability positions them in direct contradiction to conceptions of masculinity. Indeed common representations of masculinity may serve to exclude men who cannot, or do not, meet certain aspects of masculinity, including men with disabilities (Connell, 2005).

Masculinity

While masculinity remains a nebulous concept with many disparate perspectives and definitions, in most cultures and contexts there remains a clear social standard of what it means to be a man (Connell & Messerschmidt, 2005; Vandello & Bosson, 2013). Drawing on Gramsci's (1971) concept of hegemony among cultural and political elites, Connell's concept of hegemonic masculinity has dominated masculinity discourse in recent decades (Connell, 2005; Connell & Messerschmidt, 2005). Hegemonic masculinity, it is proposed, is not an archetype, but rather is a 'currently accepted' ideal that occupies the hegemonic position (Connell, 2005). According to this perspective, masculinity is explicitly hierarchical and one's status on this hierarchy affords differential access to power (Jewkes et al., 2015). Indeed, hegemonic masculinity is "always constructed in relation to various sub-ordinate masculinities as well as in relation to women" (Connell, 1987, p 183). Recent discourse has

also expounded the notion of a multiplicity of masculinities, with a recognition that there is no singular 'masculinity' (Barrett, 2014; Connell, 2005; Jewkes et al., 2015).

The sub-ordinated masculinities referred to in Connell's quote include gay men, as well as men with disabilities. Recent work, however, has demonstrated that some groups previously considered to be subordinated are experiencing increasing inclusion. Noting an increasing acceptance of gay men in young men's peer groups, Anderson (2010) proposed the Inclusive Masculinity Theory (IMT) as a means of understanding emerging constructions of masculinity. Within sport and fraternity settings, typical bastions of archetypal masculinity, Anderson observed a rejection of homophobia, increasing peer tactility and emotional disclosure, inclusion of gay men in the peer group, and a rejection of violence and bullying (Anderson, 2010; Anderson & McCormack, 2018). It is not known, however, whether this inclusivity extends to other groups such as men with disabilities, nor has it been observed quantitatively, or in contexts beyond American college settings.

West and Zimmerman's (1987) "doing gender" theory situates masculinity in the performative interactions and behaviors that individuals engage in, based on societal expectations of their gender. For West and Zimmerman (1987), doing gender "involves a complex of socially guided perceptual, interactional, and micropolitical activities that cast particular pursuits as expressions of masculine and feminine 'natures'" (West & Zimmerman, 1987, p 126). This compels men to proficiently act in a way that aligns with social expectations of what is masculine, or alternatively suffer the penalty for deviating from these expectations (West & Zimmerman, 2009). Relatedly, Butler (2004) proposed that gender can be regarded as a repertoire of performative actions that are learnt and reproduced through everyday encounters and behaviors, ultimately serving to cohere as a stable gender identity.

The concept of manhood as a precarious social status was advanced by Vandello and Bosson (2013). They argue that in contrast to womanhood, which is typically viewed as a set

of ascribed characteristics, manhood is a highly "precarious social status that is both difficult to achieve and tenuously held" (Vandello & Bosson, 2013, p 101). Men must necessarily and constantly have their manhood publicly affirmed, sometimes leading to risky attempts to demonstrate this, and also avoidance of activities or situations that may violate their status as men (Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008). The pressure to continually demonstrate and confirm this elusive and tenuous manhood may be stressful and anxiety provoking (Vandello & Bosson, 2013). More recently, it has been argued that gender, and masculinity more specifically, can be understood as a spectacle that is located in the minds of observers (as social participants), as well as within individuals and social systems (Ridge, 2019). Ridge (2019) contends that masculinity can be game-like in nature, and in this way, participants and audience members do not always observe or register the dimensions of masculinity. Other dimensions such as ethnicity and social class, and other simultaneously occurring events and happenings compete with masculinity, and form a backdrop to gendered performances (Ridge, 2019).

Masculinity and disability

The "dilemma of disabled masculinity" (Shuttleworth et al., 2012) has been long observed among men with disability: as men, there is an expectation of strength and masterfulness, but as someone with a disability, there is an expectation of subservience and dependency (Shakespeare, 1999; Shuttleworth et al., 2012). Ostrander (2008) poignantly explores the impact of violently acquired spinal cord injuries (VASCI) on masculine identity, revealing that the injury and subsequent disability challenged their concept of what it means to be a man. For many men with a disability, their inability to enact conventional masculine attributes such as strength and social status gives them a sense of preclusion from normative masculine ideals (Ostrander, 2008; Shakespeare, 1999). Furthermore, heteronormative masculine stereotypes related to sexuality and sexual performance may be particularly

oppressive for men with a disability (Ostrander, 2008; Shakespeare, 1999), serving to emasculate them or position them as asexual (Barrett, 2014; Ostrander, 2008). It is noted however, that for some men with disabilities, non-conformity to sexual norms can also be liberating, offering avenues to explore different roles and behaviors (Shakespeare, 2000). Further, some men with disabilities report that being outside sexual norms offers benefits in terms of better relationships with women (Shakespeare, 1999).

Given the dissonance between the stereotypes associated with masculinity and disability, men with disabilities must interpret and enact masculinities to construct their own identity. Coles (2008) refers to this as '*mosaic masculinities*', whereby men actively assemble their own masculinity, selecting components of masculinity that they can perform, and rejecting other, incompatible components. Based on evidence from qualitative work among men acquiring a spinal cord injury, Gerschick and Miller (1995) identified three different strategies that were adopted by men with disabilities in response to hegemonic masculinity: reformulation, rejection or reliance. Those adopting the 'reliance' strategy commit to traditional masculine ideals and exert renewed effort to accede to culturally accepted dimensions of masculine identity such as strength, independence and physical competence. This type of response has been observed among wheelchair rugby players, where aggressive, hyper-masculine bravado and athleticism are valued, and serve to align players' identities with conventional masculinity (Lindemann & Cherney, 2008). Such findings are not limited to those acquiring a disability; a South African study found evidence that visually-impaired boys sought to orient their identity so that it aligned with hegemonic masculinity, but often experienced substantial anxiety in their efforts to position themselves this way (Joseph & Lindegger, 2007).

Alternatively, those using the 'reformulation' approach re-invent a framework of masculinity that is attainable, endorsing elements of masculinity that are achievable, but

rejecting those unattainable (Gerschick & Miller, 1995). A study among survivors of paralytic polio found that many men, while initially struggling to come to terms with their inability to meet standards of hegemonic masculinity in terms of physical competence, independence, and self-reliance, developed a masculine identity built around ideals of mental fortitude (D. Wilson, 2004). Finally, the third option identified in Gerschick and Miller's (1995) heuristic is that of 'rejection', whereby men with a disability distance themselves from dominant masculinity and renegotiate a masculinity that sits in counterpoint to hegemonic masculinity. While some men in Gerschick and Miller's (1995) study were observed to reject hegemonic masculinity, no participants neatly fell into any of the three types of responses. In more recent work, Rainey (2017) documented the way in which dis-identification, a process in which men with disability neither assimilate nor oppose dominant masculine ideologies, serves to facilitate a broader acceptance of their masculine identity.

Disability

There are three key perspectives that guide contemporary conceptualizations of disability. The medical model conceives of disability as a characteristic or attribute of a person that has arisen as a consequence of an injury, illness, or health condition that requires medical intervention to address or "correct" the problem. By contrast, the social model (Oliver, 1990) regards disability occurring as a direct result of unaccommodating environments. It shifts the focus away from the individual and their impairment, towards the social structures and processes that impact the lives of persons with disabilities (Shakespeare, 2014). While early iterations of the social model provided the ideological bedrock of the disability rights movement (Crow, 1996), it has generated criticism for its marginalization of the body (Pearson & Pini, 2017), and its disregard for the role of impairment (Goering, 2015; Shakespeare, 2006).

The biopsychosocial model integrates medical and social models of disability, and regards disability as the result of biological, social and individual forces (Engel, 1977). Accordingly, disability is not simply a direct outcome of a particular health condition or impairment, but arises in interaction with societal barriers such as discrimination, attitudes, and inaccessible environments that ultimately serve to exclude people with disabilities from many domains of everyday living. This has been incorporated into definitions of disability in the International Classification of Functioning (ICF) Disability and Health (World Health Organization, 2013). In the ICF, functioning is evident across three domains; body structures and function; activity limitations; and participation restrictions. All of these are influenced by both personal factors (e.g. personality, gender, age) and environmental factors (e.g. barriers, assistive technologies, attitudes). The ICF informs the collection of data on disability around the world.

Worldwide, it is estimated that approximately 15 percent of the population has a disability, and 2-4 percent are classified as having a very significant disability (World Health Organization, 2011). The Australian Bureau of Statistics (ABS) measures disability prevalence using a short module of disability based on the ICF and estimates that almost one fifth of Australians (18.3 percent or 4.3 million) are living with a disability – a third of these with a profound or severe disability (Australian Bureau of Statistics, 2015). Estimates of disability prevalence can vary substantially however, and other estimates based on the Washington Group short set of disability questions indicate that the prevalence of disability in Australia is 6.7 percent (Australian Bureau of Statistics, 2016).

Another important dimension of disability is ‘disability identity’. Disability identity is a subjective concept. Individuals with health conditions or impairments may not identify as disabled at all, or they may have a negative sense of self, owing to stigma and exclusion or the difficulties of life with illness or impairment. In recent decades, the possibilities of a

positive disability identity, or affirmation, have become available to more people affected by health conditions or impairments (Campbell & Oliver, 1996; Darling, 2013).

Social norms

A social norms approach provides a useful lens with which to understand the influence of masculine norms. Social norms are socially prescribed standards that shape, constrain, and direct individual thoughts and behavior (Addis, Reigeluth, & Schwab, 2016; Cialdini & Trost, 1998). Gender role norms are considered to operate in the same way as social norms, but define, guide, and direct masculine and feminine behavior. The distinction that Cialdini and Trost (1998) make between types of social norms is also usefully applied to gender norms. In particular, they distinguish between descriptive norms, that define consensual expectations about what group members *do* or *don't do* (e.g. men don't wear dresses), and injunctive norms, that define what *should* be done (e.g. men should be emotionally tough and not cry) (Cialdini & Trost, 1998). These gender role norms are observed from very early in life (Blakemore, 2003; Oransky & Marecek, 2009), and individuals quickly learn and understand what society expects of them in terms of masculine and feminine behaviors (Mahalik et al., 2003). The extent to which an individual conforms to, or rejects gender role norms can impose costs, as well as benefits (Mahalik, Talmadge, Locke, & Scott, 2005). For example, men who conform to norms related to emotional suppression and power over women may have difficulty maintaining personal relationships, while men conforming to norms regarding the breadwinner role, status and winning may achieve employment success, and derive self-satisfaction, self-identity, and social prestige from this. On the other hand, those not conforming to norms related to high-risk behaviors and violence may avoid the negative health consequences of such behavior, or they may be penalized for being non-conformant. Differences between the ways that many men with a disability participate in society, compared to those without a disability, may have an impact

on the ways that they experience and enact masculine norms. For example, men with a disability are less likely to be employed (Berthoud, 2008), and this is likely to have an impact on the domains of masculinity related to the breadwinner role, with potential positive and negative consequences. Given that masculinity is societally constructed, there is a need to examine its expression in specific contexts, and to our knowledge, no previous study has compared the way men with and without disabilities enact and conform to masculine norms in Australia.

The Present Study

While there is a relatively established literature examining disability and gender independently as social determinants of health, there is a noted dearth of research examining the inter-relationships between disability and gender (Thomas, 2006) and disability and masculinity (Loeser, Crowley, & Pini, 2017). Furthermore, research that has been conducted in the area has been largely qualitative. While this has provided a rich theoretical underpinning to understandings, it has not provided population-level understanding of masculinity among men with a disability compared to those without a disability. This is crucial if we are to better meet the needs of a sizeable minority of the population who have a disability. We are unaware of any studies that have examined the ways that men with a disability experience masculinity using a large dataset. Furthermore, this research is particularly timely given that Australia is currently implementing the National Disability Insurance Scheme, one of the largest social welfare reforms in Australian history that promises to revolutionize the delivery of disability services.

In this study, we quantify the relationships between disability and masculinity using two validated instruments for measuring disability and masculinity – the Washington Group short set of questions on disability and the Conformity to Masculine Norms Inventory.

Using the *Ten to Men* Study, a Longitudinal Cohort Study of over 15,000 Australian men and boys that represents the largest cohort of its kind in the world (Pirkis, Currier, et al., 2017), this study sought to investigate associations between disability and conformity to traditional norms of masculinity, both overall, and across different masculinity subscales.

Based on extant research, we hypothesized that: a) conformity to masculine norms would differ between men with and without a disability; b) associations between disability and masculinity would vary across domains of masculinity.

Methods

Participants

Participants were drawn from the *Ten to Men* study, the Australian Longitudinal Study on Male Health (Pirkis, Currier, et al., 2017). *Ten to Men* is a longitudinal cohort study that was established in 2011 to provide information about five broad domains (physical health, mental health and wellbeing, health behaviors, social determinants of health, health service use and knowledge) to address the preventable morbidity and premature mortality experienced by Australian men. The *Ten to Men* study received approval from the University's Human Research Ethics Committee and conformed to the principles embodied in the Declaration of Helsinki.

Details of the *Ten to Men* study have been published elsewhere (Pirkis, Currier, et al., 2017), but briefly the study commenced in 2013/2014 with a cohort of 15988 males aged 10-55 years. Participants were recruited using a stratified, multi-stage, cluster random sampling design with the primary sampling unit being the household (Pirkis, Currier, et al., 2017). For this paper, analysis was restricted to respondents aged 18-55 years (M=38.2, SD=10.59), as we were interested in understanding masculinity as it is enacted in an adult population, rather than among a younger cohort where masculinity is still being trialed and established.

Compared to the Australian male population, the *Ten to Men* cohort is older, contains a higher proportion of men who have been born in Australia. Additionally, compared to the Australian male population, a higher proportion of the *Ten to Men* sample reside in inner and outer regional areas - this reflecting the sampling strategy of the *Ten to Men* study (Pirkis, Currier, et al., 2017).

The sample characteristics are shown in Table 1. The proportion of those in the sample identifying as being of Aboriginal and Torres Strait Islander descent (2.2%), is aligned with that of the 2011 Australian male population (2.3%). The sample also contained a smaller proportion of overseas born males (23.0%) than that recorded among the Australian male population in 2011 (30.8%) (Australian Bureau of Statistics, 2017). The prevalence of disability in the analytic sample was 6.7%. Compared to those with no disability, a higher proportion of men with disability were in the older age group (aged 45-55 years), lived in disadvantaged areas, were of Aboriginal or Torres Strait Islander identity, and had lower levels of education.

Table 1: *Sample demographic characteristics*

Characteristic	No Disability (n=11,588) %(95%CI)	Disability (n=830) %(95%CI)	$\chi^{2,}$
Age			
18-24 years	13.7 (12.7, 14.8)	13.4 (10.7, 16.8)	22.75**
25-34 years	23.3 (21.8, 24.9)	19.6 (15.9, 23.8)	
35-44 years	30.6 (29.4, 31.9)	26.8 (22.9, 31.1)	
45-55 years	32.4 (31.0, 33.8)	40.2 (36.0, 44.5)	
Country of Birth			
Australian born	73.0 (71.1, 74.9)	80.5 (76.5, 84.0)	22.20***
Overseas born	27.0 (25.2, 28.9)	19.5 (16.1, 23.5)	
Indigenous Identity			
Aboriginal and/or Torres Strait Islander	1.7 (1.3, 2.3)	4.3 (3.0, 6.3)	28.44***
Not Aboriginal and/or Torres Strait Islander	98.3 (97.7, 98.7)	95.7 (93.7, 97.0)	
Area level disadvantage			
1 -Most disadvantaged	20.1 (16.8, 23.9)	28.4 (22.9, 34.5)	78.54***
2	18.8 (15.6, 22.5)	25.8 (20.7, 31.6)	
3	23.6 (19.6, 28.1)	20.2 (15.7, 25.7)	
4	18.2 (14.9, 22.0)	12.8 (9.5, 17.0)	
5- Least disadvantaged	19.3 (15.8, 23.4)	12.9 (9.3, 17.6)	
Education			
Completed Year 12	66.3 (64.5, 68.0)	43.2 (38.8, 47.8)	180.25***
Did not complete Year 12	33.7 (32.0, 35.5)	56.8 (52.2, 61.2)	

Note: CI = confidence interval

*p<.05 **p<0.01 ***p<0.001

Materials

The *Ten to Men* survey was self-completed by all participants over the age of 18 years. A wide range of different domains and constructs were included in surveys, with content guided by the Australian National Male Heath Policy. This included items on physical health, mental health, health behaviors, health service utilization and knowledge, as well as social determinants of health. Specific measures that were drawn on for the present study are detailed below.

Disability Status. Participants were classified as having a disability based on their responses to the Washington Group short set of questions on disability. Questions asked individuals about difficulties experienced in six functional domains (seeing, hearing, walking, cognition, communication, and self-care), on a four-point severity scale: no difficulty; some difficulty; a lot of difficulty; cannot do at all. Following the precedent of other studies and recommendations by the Washington Group, individuals were categorized as having a disability if they reported 'a lot of difficulty' or 'cannot do at all' on at least one domain (Madans & Loeb, 2013). The Washington Group Short Set of questions build on the ICF model of disability, and are designed to capture common functional limitations, and identify those in the population at greatest risk of participation exclusions or restrictions (Madans, Loeb, & Altman, 2011). Having been well utilized and extensively tested and validated in many countries, they permit cross-national comparisons (Madans & Loeb, 2013).

Conformity to Masculine Norms. Masculinity was measured using the Conformity to Masculine Norms Inventory (CMNI-22). The CMNI is based on the social norms perspective, and is designed to assess cognitive, behavioral and affective conformity to masculinity, and measures masculinity across eleven domains (Mahalik et al., 2003).

The CMNI-22 is an abbreviated version of the original 94-item scale, using the two highest loading statements to assess conformity to each masculine norms subscale (Owen, 2011). The original 94-item CMNI had good internal consistency, construct validity, and discriminant validity (Mahalik et al., 2005), and the 22-item instrument has been shown to correlate well with the original scale (Thompson & Bennett, 2015). The CMNI also correlates well with other measures of masculinity, such as the Gender Role Conflict Scale, the Brannon Masculinity Scale, and the masculine Gender Role Stress Scale (Iwamoto et al., 2012). Additionally, the CMNI has been widely used and

was positively regarded in a recent review of instruments measuring masculine ideologies (Thompson & Bennett, 2015). Pairs of statements correspond to eleven subscales: (1) Primacy of Work; (2) Dominance; (3) Risk-Taking; (4) Heterosexual Presentation; (5) Power over Women; (6) Emotional Control; (7) Playboy; (8) Violence; (9) Pursuit of Status; (10) Winning; and (11) Self-Reliance.

Respondents were instructed to consider their actions, feelings, and beliefs in relation to each statement. Response options range from "strongly disagree" (0) to "strongly agree" (3). We summed responses to provide a conformity score for each subscale ranging from 0 to 6, with higher scores indicating greater conformity (Mahalik et al., 2005). Scores from all subscales were summed to present a continuous, global score of conformity to masculine norms from 0-66. Given concerns about the internal consistency of the overall CMNI-22 score (Owen, 2011), we examined the subscales as well as the overall measure.

Covariates. Based on previous research, we identified several covariates that may be prior common causes of disability and masculinity. To address potential bias due to confounding, we included the following covariates in analytical models: age (18-24 years, 25-34 years, 35-44 years, 45-55 years), country of birth (Australian born, overseas born), Indigenous identity (Aboriginal and/or Torres Strait Islander, non-Aboriginal or Torres Strait Islander) education (did not complete year 12, completed year 12), and small area socioeconomic disadvantage (categorized into quintiles based on the Index of Relative Socio-Economic Disadvantage (IRSD) (Wise & Mathews, 2011) with the lowest quintile reflecting areas of greatest disadvantage).

Procedure and Analytic Approach

Data were analyzed using Stata (StataCorp, 2017). The scale properties of the CMNI were firstly assessed; we examined the internal reliability of the overall scale, and also

conducted confirmatory factor analysis. We then compiled descriptive characteristics of the analytic sample, presenting proportions and confidence intervals for those with and without disability (Table 1). Mean and standard deviation scores for conformity to masculine norms are presented for those with and without disability in Table 2. To assess the relationship between disability and conformity to masculine norms, we conducted population-weighted linear regression, adjusting for age, country of birth, education level, Indigenous identity, and area level disadvantage. These linear regression models were performed using the 'regress' command. The 'regress' command uses the ordinary least squares (OLS) method to estimate the unknown parameters in linear regression models. OLS does this by minimizing the sum of the squares of the differences between observed and predicted dependent variables in the linear function. Sampling weights, developed to address bias in estimation due to unequal sampling fractions and to account for non-response when estimating population parameters (Spittal et al., 2016) were used in analytical models. These sampling weights were calculated as the inverse of the individual probability of participation in the study (Spittal et al., 2016).

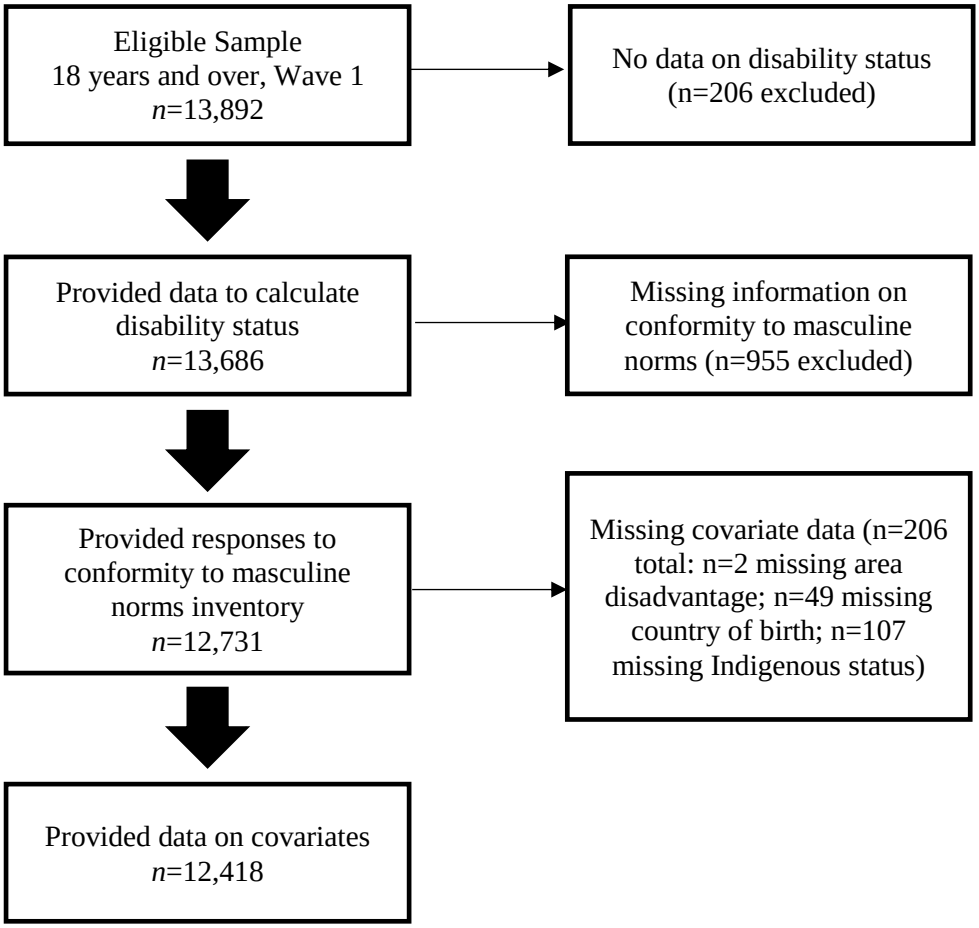
Results

Preliminary Analyses

Data cleaning was conducted by the *Ten to Men* project team prior to analysis. Of the 13,892 respondents aged 18-55 who participated in the baseline survey, 12,418 were included in the analytic sample (11,588 men without disability and 830 men with disability). Figure 1 presents a flow chart depicting entry into the sample. There was a small amount of missing data on disability status (n=206, 1.5%). A further 955 respondents were missing information on one or more of the outcome measures (6.9%), and n=313 (2.3%) were missing covariate data. In relation to the covariates, there was no missing data on age, minimal missing data on Indigenous identity (n=77, 0.6%), and country of birth (n=37, 0.3%) and only two

respondents were missing information on area disadvantage. A total of n=228 respondents were missing information on education (1.6%).

Figure 1: Flow chart describing entry into the analytic sample



There is evidence supporting the use of available case analysis when there is low-level item missingness (Parent, 2013), with further evidence that multiple imputation provides little gain when there is less than 5% missing (Lee, Roberts, Doyle, Anderson, & Carlin, 2016). Further, multiple imputation of exposure or outcome provides little gain (Lee & Carlin, 2012; Lee et al., 2016). Therefore, given that there was minimal missing data for the covariates, multiple imputation is unlikely to improve estimates, and for this reason, we do not present it as the main analyses. In sensitivity analysis, we imputed the missing data

and conducted analysis on the imputed data set (see Supplementary Table S1). However for the main analysis, we conducted complete case analysis.

We conducted confirmatory factor analysis to assess the factor structure of the CMNI. To accommodate the assumed correlated nature of the factors we specified an oblique rotation. Following Kaiser criteria, we retained eigenvalues of 1 or higher. In the derived 11-factor structure, with factor loadings of 0.3 or higher, the items loaded neatly on the 11 factors of the scale (see Supplementary Tables 2 & 3). We assessed the internal consistency of the overall CMNI using Guttman's λ-4; this was calculated to be 0.83.

Primary Analyses

Table 2 compares conformity to masculine norms for men with and without disability, both overall and for each subscale. There were few observable differences in conformity to masculine norms means between men with and without a disability, both overall and on the subscales (see Table 2). Notable exceptions were on the Self-Reliance and Pursuit of Status subscales. Men with a disability reported higher mean scores on Self-Reliance conformity than men without a disability (mean 3.13, 95% CI 3.01, 3.26 for those with a disability compared to mean 2.53, 95% CI 2.51, 2.56 for those without a disability). Conformity to Pursuit of Status norms was also lower among men with a disability (mean 3.05 95% CI 2.94, 3.16 for those with a disability compared to mean 3.36 95% CI 3.33, 3.39 for those without a disability).

Table 2: *Mean CMNI scores in analytical sample*

	No disability		Disability	
CMNI Norm Subscale	Mean (SD)	[95% CI]	Mean (SD)	[95% CI]
Pursuit of Status	3.36 (1.01)	[3.33, 3.39]	3.05 (1.16)	[2.94, 3.16]
Dominance	2.51 (1.09)	[2.48, 2.54]	2.34 (1.14)	[2.24, 2.45]
Emotional Control	3.13 (1.35)	[3.09, 3.17]	3.17 (1.61)	[3.02, 3.32]
Heterosexual Presentation	2.86 (1.56)	[2.81, 2.91]	2.76 (1.66)	[2.62, 2.91]
Playboy	1.63 (1.35)	[1.59, 1.67]	1.75 (1.59)	[1.61, 1.89]
Power Over Women	1.27 (1.02)	[1.24, 1.30]	1.29 (1.17)	[1.19, 1.39]
Primacy of Work	2.61 (1.20)	[2.57, 2.64]	2.43 (1.29)	[2.31, 2.56]
Risk-Taking	2.76 (1.17)	[2.73, 2.79]	2.61 (1.34)	[2.49, 2.73]
Self-Reliance	2.53 (1.12)	[2.51, 2.56]	3.13 (1.37)	[3.01, 3.26]
Violence	2.39 (1.47)	[2.35, 2.43]	2.51 (1.52)	[2.39, 2.63]
Winning	2.48 (1.07)	[2.45, 2.51]	2.30 (1.19)	[2.20, 2.41]
Total Score	27.52 (5.54)	[27.38, 27.67]	27.35 (6.08)	[26.88, 27.83]

Note: CI = confidence interval

Regression Analyses: Disability Status and Conformity to Masculine Norms

Table 3 presents the results of the unadjusted and adjusted linear regression models of disability status and conformity to masculine norms. Our discussion of the results focuses on adjusted analyses. While there was no evidence that there were differences in conformity between men with and without disability to masculine norms on the total CMNI scale, there was evidence on multiple subscales including: Self-Reliance, Violence, Pursuit of Status, Heterosexual Presentation, Primacy of Work and Dominance.

Examining specific findings, in adjusted analyses, having a disability was associated with significantly higher conformity to Self-Reliance (β=.54, p-value <0.001), and Violence (β=.12, p-value=.047). Disability was also associated with lower conformity to Pursuit of Status (β= -.21, p <0.001), Heterosexual Presentation (β= -.21, p =.006), Primacy of Work (β= -.17, p =.008), and Dominance (β= -.12, p=.032).

Sensitivity analysis conducted on the imputed dataset provided support for the results, producing estimates that were largely similar to those of the main analyses (see Supplementary Table S1).

Table 3: *Linear regression: Disability and conformity to masculine norms*

	Unadjusted				*Adjusted*[a]			
CMNI subscales	ß	SE	CI	p-value	ß	SE	CI	p-value
Pursuit of Status	-.31	.06	[-.42, -.20]	<0.001	-.21	.06	[-.32, -.10]	<.001
Dominance	-.17	.05	[-.27, -.06]	0.002	-.12	.05	[-.23, -.01]	.032
Emotional Control	.04	.08	[-.11, .20]	0.579	-.01	.08	[-.16,.14]	.897
Heterosexual Presentation	-.10	.07	[-.24, .05]	0.188	-.21	.08	[-.36.-.06]	.006
Playboy	.12	.07	[-.03, .26]	0.106	.13	.07	[-.01, .27]	.076
Power Over Women	.03	.05	[-.08, .13]	0.632	.00	.05	[-.10,.10]	.986
Primacy of Work	-.17	.06	[-.30, -.05]	0.007	-.17	.07	[-.30, -.05]	.008
Risk Taking	-.15	.06	[-.27, -.03]	0.019	-.11	.06	[-.24,.01]	.077
Self-Reliance	.60	.07	[.47, .73]	<0.001	.54	.07	[.41,.67]	<.001
Violence	.12	.06	[-.00, .24]	0.058	.12	.06	[.00,.24]	.047
Winning	-.18	.06	[-.29, -.07]	0.002	-.10	.06	[-.22,.01]	.080
Total score	-.17	.25	[-.65, .32]	0.497	-.14	.25	[-.63,.34]	.564

Note: CI = confidence interval

[a]Adjusted for age, area disadvantage, education, country of birth, and Indigenous Identity

Discussion

This study is the first large scale population-based study comparing conformity to masculinity among men with and without a disability. While there was little difference between the groups of men when examining the overall CMNI score, inspection of the different subscales revealed key differences in conformity to masculine norms. Notable was the much greater endorsement of Self-Reliance among men with a disability. To a lesser extent, men with a disability reported greater conformity to norms endorsing violence. We also found that men with a disability reported lower conformity to Pursuit of Status and Primacy of Work (the breadwinner role, status and prestige), Heterosexual Presentation, Risk-Taking and Dominance norms.

As far as we are aware, no other quantitative study has sought to compare conformity to masculine norms between those with and without a disability, however our results align with qualitative work highlighting the dynamic process of identity construction among men with disabilities (Barrett, 2014). We note the fact that in our results, the overall CMNI score

revealed little difference between men with and without a disability, yet scores across the different subscales reveal some substantial differences in masculine identities between those with and without a disability. On some dimensions, men with a disability showed stronger conformity to masculine norms, while on other dimensions there was decreased conformity. This implies that men with disabilities piece together a masculinity mosaic that aligns with their experiences, ideals, preferences, and capabilities. Concordant with qualitative work (Barrett, 2014; Coles, 2008; Gerschick & Miller, 1995), this suggests that men with a disability may actively interrogate masculinity norms to reject certain standards, reformulate the meaning of a masculine identity, and commit to masculine identities that fit within the parameters of their current social and psychological context, as well as the resources available.

Conformity to specific masculine norms

It has been observed that tension between the conflicting identities or statuses of 'masculinity' and 'disability' is most patently exemplified when considering labor force participation, where, as men, there is a social expectation of participation in the labor force, however as someone with a disability, they are often excluded, as evidenced by lower employment rates (Berthoud, 2008). Thus, the role of breadwinner, central to prevailing conceptions of masculinity, may be more difficult to realize for men with disability (Barrett, 2014). In this study, the extent to which lower commitment to the Primacy of Work and Pursuit of Status norms of masculinity is adaptive or maladaptive is unknown. On the one hand it may indicate that the men in this sample found ways to retain or recast their masculine identity by decoupling the standard of idealized masculinity that involves labor force participation from that of their own masculine identity. Alternatively, it may indicate a sense of helplessness at their inability to engage in what are perceived to be core practices of masculinity. In their review of precarious manhood, Vandello and Bosson (2013) argue that

the workplace is a key setting in which masculinity is enacted and proven, and anticipated or experienced job loss is a major masculine stressor. In support of this, a US study of 816 men and women found that involuntarily unemployment was a greater threat to the gender status of men compared to women (e.g. "not a real man/woman" or "less of a man/woman") (Michniewicz, Vandello, & Bosson, 2016). Future work will examine differences between men with and without a disability in relation to how conformity to masculine norms is associated with mental wellbeing, and thereby seek to understand whether reconstituting masculinity in this way is beneficial or detrimental to men with disabilities.

These results also showed that men with a disability express lower conformity to Heterosexual Presentation, however it is unclear whether this result indicates greater openness to non-heterosexual behaviors and identities, or a reduced emphasis on sex and sexuality. It is recognized that stigmatizing attitudes toward intimacy and sexuality among men with disabilities persist (Shakespeare & Richardson, 2018). For the men with disability in our sample, it is possible that being a man did not depend on conquest of, or domination over, women. This is somewhat aligned with other work in which men with disabilities reported that the negative stereotype that people with disabilities are asexual or uninterested in sexual activity also offers potential for more equal and friendly relations with women (Shakespeare, 1999). This aligns with Pearson and Pini's (2017) work showing that for some men, in recasting their own masculinity they rejected some elements of the "typical male role model" with its "false macho thing" (Pearson & Pini, 2017, p 181), and embraced vulnerability and emotional range to enjoy friendships with women that they had not previously had.

The reduced endorsement of norms of Dominance and Risk-Taking also suggest that the men with disabilities in this sample had constructed their masculine identities with a reduced emphasis on these normative elements of masculinity. Based on other research, this

is likely to differ according to type of impairment. For example among a group of men with Lyme disease, Pearson and Pini (2017) noted a sense of frustration and grief at their material body, and its inability to enable them to partake in typical physical masculine practices and behaviors such as employment and leisure activities. On the other hand, among wheelchair rugby playing men with quadriplegia, a hyper-masculinity was observed, with aggressive and high-risk displays of physical power and dominance challenging conceptions of disability (Lindemann & Cherney, 2008). This highlights the importance of further research investigating differences in conformity to masculine norms according to type of impairment.

While frustration at perceived dependence on others and powerlessness has been noted in previous research among men with disabilities (Joseph & Lindegger, 2007; Ostrander, 2008), a sense of agency, independence and self-reliance are fundamental to normative constructions of masculinity (Barrett, 2014; Joseph & Lindegger, 2007). The high conformity to Self-Reliance observed in this sample may indicate that for many men with disabilities, self-reliance constitutes a dimension of masculinity that is attainable and that coheres with their own construction of masculinity. Alternatively, this high conformity to Self-Reliance may indicate explicit rejection of any suggestion that as disabled men, they were inevitably dependent on others, and lacked autonomy.

While being self-reliant is clearly a valuable quality, there is evidence that conformity to Self-Reliance is not always advantageous. Self-Reliance has been associated with increased risk of suicidal thinking among men (Pirkis, Currier, et al., 2017), and mental health problems among adolescents (Labouliere, Kleinman, & Gould, 2015). It is therefore possible that this strong endorsement of masculine norms related to self-reliance is deleterious to the wellbeing of men with disabilities.

The high conformity to Violence observed in the sample of men with disabilities (compared to men without) may be related to individuals' own personal experiences, as there

is evidence that a higher proportion of people with disabilities are victims of violence (Hughes et al., 2012; Krnjacki et al., 2018). Alternatively, this conformity to Violence may represent enactment of certain hyper-masculine norms regarding aggression and violence. By embodying and replicating the physical intensity, aggression and violence of able-bodied male sport, wheelchair rugby players in Lindemann's (2008) study challenged stereotypes and expectations of men with disabilities.

In summary

Reflecting on the broader literature regarding masculine identity among men with disability, our results comport with qualitative studies indicating a reformulation or re-assembling of masculine identities (Barrett, 2014; Coles, 2008; Gerschick & Miller, 1995) and can be situated within the theoretical frameworks related to this work. Research among the broader male population has argued that masculinity is a precarious social status, and the process of establishing and proving one's masculine identity is stressful and anxiety-provoking (Vandello & Bosson, 2013). Employment and heteronormativity are integral to this elusive and tenuous state (Berdahl, Cooper, Glick, Livingston, & Williams, 2018), are key to marking one's status on masculine hierarchies (Connell, 2005), and thereby provide differential access to power and status. The extent to which the differences in conformity to masculine norms between men with and without a disability observed in this study represent reformulations that are positive or dysfunctional is not known. While it is possible that these differences reflect a frustrating realization that certain normative masculine identities cannot be attained, it is also conceivable that the differences represent a reconfiguration or reinterpretation of masculine identities that are not necessarily disadvantageous to wellbeing. It is possible that the results may reflect some generalizability of Anderson's (2010) recent work among young men that revealed a more inclusive masculinity. As noted, there is some qualitative evidence that for some men with Lyme Disease, a rejection of some hegemonic

masculine norms regarding stoicism and emotional control facilitated an appreciation of platonic relationships with women and enabled them to embrace a wider emotional range (Pearson & Pini, 2017). Understanding the extent to which these variations in conformity to masculine norms are positive or negative represents a critical direction for further quantitative work.

Strengths and Limitations

There are several strengths of this analysis. We used a large dataset, which provides a strong basis for statistical inference. We also note the use of validated measures of disability and masculinity. While the Washington Group short set of questions on disability do not capture all experiences of disability, the questions have been extensively tested and validated in many countries, cover most common functional limitations, and permit cross-national comparisons (Madans & Loeb, 2013).

There are several limitations of this study. We note that disability is a highly contested concept, and it is possible that the questions used to assess disability in this study did not sufficiently measure it. The International Classification of Functioning (ICF) defines disability in terms of functioning across multiple life domains (World Health Organization, 2013), however in practice, a variety of approaches are taken when defining disability (Simeonsson et al., 2003). As noted above, it is also known that the Washington Group questions (used in this analysis) underestimate disability prevalence, and do not adequately capture mental health conditions (Sabariego et al., 2015). There are known associations between masculinity and mental health (Milner, Kavanagh, King, & Currier, 2018; Pirkis, Spittal, Keogh, Mousaferiadis, & Currier, 2017), and it is therefore possible that our findings may have been different, had psychosocial disabilities been included in the measure of disability. We note however the causal pathways between these associations must be carefully examined, and the direction of these associations is likely to be both ways: while

mental health conditions may influence conformity to masculine norms, conformity to masculine norms may also influence mental health. Longitudinal data is needed to identify and define the temporal ordering between masculinity and mental health.

While it is known that there are different costs and benefits to men conforming to traditional and non-traditional masculine norms, it is not known how the differences observed between men with and without a disability in terms of conformity to masculine norms, are associated with detrimental or beneficial effects. The inability to enact self-reliance, and the failure of others (including carers and service providers) to recognize the importance of independence and self-reliance to the self-identity of men with disabilities, may impose an adverse effect on the mental health of these men. Future work will examine this, specifically seeking to understand the association between conformity to masculine norms and mental health among men with disabilities compared to those with no disability. Further work should also seek to understand the settings and domains in which self-reliance and independence are enacted.

Further, men with disabilities are a diverse group. Our measure of disability operationalized disability according to self-reported functioning on six domains. It is likely however, that the domains of functioning measured here are not equivalent – that is, impaired functioning on one domain is not equivalent to impaired functioning on other domains. Further to this, the relationship between disability and masculinity is complex, and likely to vary by impairment type. Some have argued, for example, that men who have intellectual disabilities may conform less to normative masculine ideals (N. Wilson, Parmenter, Stancliffe, & Shuttleworth, 2013). This research is unable to tease out the nuances of such associations. There is a patent need for further research to examine associations between different impairment types and masculinity, particularly among men with intellectual

disabilities and men with psychosocial disabilities, who are likely to be under-represented here.

Experiences of masculinity and disability are also likely to vary depending on whether a disability is present at birth or acquired later in life. For men who acquire a disability later in life, their masculine identity precedes their disability, whereas for those born with a disability, their masculine identity is forged concurrent with their identity as having a disability. This study was unable to examine how associations between disability and masculinity might vary according to time of disability acquisition.

While the CMNI is positively regarded, it is based on prevailing American beliefs about being male, and its psychometric properties have been largely based on White samples (Hsu & Iwamoto, 2014). There is evidence that masculinity may be understood, experienced and expressed differently across different ethnic groups and cultural contexts (Griffith, Gunter, & Watkins, 2012). While the proportion of Indigenous men in the sample analyzed here was small, they were over-represented in the group of men with a disability. Our regression models controlled for Indigenous identity, so this is unlikely to have driven differences between those with and without a disability, however it highlights the need to understand how masculinity is experienced and expressed in different racial and ethnic groups. Related to this, emerging discussion has noted the Western focus of hegemonic masculinity discourse and called for a decolonizing approach to enhance understanding of hegemony and masculinity (Connell, 2016).

As both disability and masculinity were self-reported, dependent measurement error between self-reported disability and masculinity is possible. Dependent measurement error may arise when variables are based on self-reported subjective responses (such as disability or masculinity) from the same respondent (VanderWeele & Hernán, 2012). The net effect of such an error is difficult to quantify however it may induce spurious associations. It should

also be noted that respondents self-completed questionnaires for this research. Those with an intellectual disability or visual impairment are therefore likely to be under-represented in this analysis.

As a final point for consideration, we note that there is a small risk that our omission of occupation from the set of covariates included as confounders introduced some bias. The relationship between disability, masculinity and occupation is highly complex. While education, country of birth, indigenous identity, and age are all clearly confounders of the relationship between disability and masculinity, it is less clear that occupation is a confounder and for this reason, our regression models did not control for occupation. Disability could be a prior cause of occupation (in which case occupation is a mediator), and occupation could be a prior cause of disability (in which case it is a confounder). We considered that the mediation pathway (disability to occupation) would apply to a larger proportion of men with a disability. Given the strong risk of bias associated with the inclusion of a mediator in our set of confounders, we considered it most methodologically sound to omit occupation from the analysis. As conformity to masculinity is known to vary by occupation group (Milner et al., 2018), future research is required to understand how this relationship might differ for men with disabilities.

Study Implications

These results have important implications for the delivery of services to men with disabilities. In particular, the high endorsement of Self-Reliance norms reported among men with disabilities suggest the need to privilege and respect the importance of independence and self-reliance among this group. This is particularly important given that men with disabilities are more likely to rely on help and support from others, and points to the critical role of disability carers, personal assistants, and support workers in supporting men with disabilities in a way that recognizes the importance of self-

reliance among men with disabilities. Caregivers are recognized as having a significant impact on the lives of people with disabilities (N. Wilson, Stancliffe, Parmenter, & Shuttleworth, 2011). While our work did not directly explore practice or service delivery, some researchers argue that the development and enhancement of social relationships between employed caregivers and users is lacking in some disability services (Clegg & Lansdall-Welfare, 2010). There is also evidence that the gender of caregivers impacts on the type of care and care outcomes among men with intellectual disabilities, indicating that gender should be an important consideration in the planning of care provision (N. Wilson et al., 2011). It is argued that the moral suppositions and judgements among workers providing services to those with intellectual disabilities must be dismantled to advance the provision of care to those with disability (Clegg & Lansdall-Welfare, 2010). Although these studies have typically focussed on the care of people with intellectual disabilities, they point to important considerations in relation to the care of men with disabilities. Most notably, in the context of this broader literature, our results highlight the importance of training disability carers, personal assistants, and support workers to recognise and support the essentiality of self-reliance and independence among men with disabilities, and devise means of respecting and accommodating this.

Conclusion

In conclusion, we present the first quantitative study that we are aware of documenting conformity to masculinity norms between men with and without a disability using a large sample. The study provides support for the premise that men with a disability differ from those without a disability on some key masculinity subscales. In particular, we found evidence that men with a disability report greater conformity to Self-Reliance norms, and less conformity to norms related to the breadwinner role (Pursuit of Status and Primacy

of Work), and Heterosexual Presentation. As others have noted, the deconstruction and reformulation of a masculine identity divergent from hegemonic masculine identities among men with disabilities occurs in a similar way to the reformulation of masculine identities of other marginalized groups (such as gay men). The extent to which this is adaptive, and represents a positive reformulation, or a maladaptive with consequent mental health impacts is not known, and will be the subject of future research. This research contributes to wider debates on the diversity of masculinities arising from the interplay of sexuality, ethnicity, disability and other factors.

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