

How self-reported alcohol use and masculinities are related to the reported use of intimate partner violence

Supplementary materials

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Methods

Measures

In this research, data from Waves 1 and 4 of the *Ten to Men* study were used. Wave 1 data were collected from October 2013 to July 2014 and Wave 4 data from August to December 2022. The following section includes details of the specific measures used in this research. Further information on the study design, questionnaires, statistical considerations, data files and other data resources are available via the *Ten to Men* Data User Guide (Volpe et al., 2024).

Glossary

AUDIT: the Alcohol Use Disorders Identification Test (AUDIT) score, a validated 10-item screening tool that assesses alcohol consumption, potential dependence and alcohol-related harm. The AUDIT score ranges from 0 to 40.

Confounders: variables that influence both the key predictor (factor) and outcome

Harmful alcohol use or possible dependence: an AUDIT score of 16 and above

Hazardous alcohol use: an AUDIT score from 8 to 15

Intimate Partner Violence (IPV): in this work, we adopt the definition set out in the National Plan (DSS, 2022, p. 37) as: *'Any behaviour within an intimate relationship (including current or past marriages, domestic partnerships or dates) that causes physical, sexual or psychological harm ... Intimate partner violence can occur outside of a domestic setting, such as in public, and between 2 people that do not live together.'*

Incidence: the proportion of men who initiated IPV use *between Waves 1 and 4 among those who had never used IPV as of Wave 1*. This measure is used in the longitudinal analyses to assess changes over time.

Prevalence: the proportion of men who ever used IPV *at a specific point in time (by Wave 1 or Wave 4)*. This measure is used in the cross-sectional (point in time) analyses to provide a snapshot of the condition's overall presence.

Risk: described in this report as incidence or prevalence, refers to the likelihood of using IPV

Relative Risk (RR): in this report, we define relative risk as the likelihood of using IPV for a specific group compared to another (reference) group. A high relative risk indicates a strong association between IPV and the variable of interest for one group compared to the other group.

Interaction (effect modification): When the association between alcohol use and IPV differs for men with different levels of masculine norms. In other words, interaction asks whether alcohol-related risk is stronger, weaker or unchanged depending on masculinity norms (or vice versa).

Joint effect: The level of IPV risk among men exposed to particular combinations of alcohol use and masculinity norms, compared to a baseline level (low levels of both risk factors). Joint-effects comparisons show which combined exposure groups have higher or lower risk but do not, on their own, demonstrate interaction.

Outcomes

IPV use measures

To understand the use of IPV, *Ten to Men* respondents were presented with a series of questions following the prompt, 'As an adult, have you ever experienced any of the following?', and asked to respond either 'yes' or 'no'. Respondents were also able to skip answering these questions. The questions were:

- Have you ever behaved in a manner that has made a partner feel frightened or anxious? (emotional-type abuse)
- Have you ever hit, slapped, kicked or otherwise physically hurt a partner when you were angry? (physical violence)
- Have you ever forced a partner to have sex or made them engage in any sexual activity they did not want? (sexual abuse; included in 2013-14 survey only).

The incidence of IPV use is defined as no reported IPV use by 2013-14 but reported use by 2022. Prevalence refers to the cross-sectional reports of IPV use at each time point – 2013-14 and 2022. Men were counted as having ever used IPV by 2022 if they answered 'yes' to any type of violence in either the 2013-14 or 2022 survey. The definitions and coding of the outcome variables used in both longitudinal and cross-sectional analyses are detailed in Table S1 below.

Table S1: Incidence and prevalence of IPV definitions

Outcome name	Outcome description	Outcome definition and coding
New occurrence (incidence) between 2013-14 and 2022	Use of IPV behaviours for the first time between 2013-14 and 2022	Yes = Yes to any item in 2022 and No to each item in 2013-14 No = No to each type in 2022 and 2013-14
Prevalence in 2013-14	Ever having used IPV behaviours by 2013-14	Yes = Yes to any types of IPV in 2013-14 No = Never used (No to each in 2013-14)
Prevalence in 2022	Ever having used IPV behaviours by 2022	Yes = Yes to any types of IPV in 2013-14 or 2022 No = Never used (No to each type in 2022)

Key exposures: Alcohol use measures

To assess alcohol use, we used the Alcohol Use Disorders Identification Test (AUDIT) score. The AUDIT is a validated 10-item screening tool that assesses alcohol consumption, potential dependence and alcohol-related harm (Babor et al., 2001). In addition to the total AUDIT score, we examined 2 individual items – frequency of drinking and the typical number of drinks consumed on a drinking occasion – because research shows that these patterns are strongly linked to IPV use (Cafferky et al., 2018; Leonard & Quigley, 2017). We also included age at first drink, as early onset drinking has been associated with increased risk of IPV use in adulthood (Cafferky et al., 2018).

Total AUDIT scores

The AUDIT score is the sum of responses to 10 questions, each scored from 0-4, covering 3 domains. The total score, out of 40, guides the recommended level of intervention. Based on the World Health Organization (WHO) standard measure (Babor et al., 2001), participants were grouped into low-risk alcohol use (0-7), hazardous alcohol use (8-15), harmful alcohol use (16-19) and probable dependence (20+).

Frequency of alcohol use

In each wave, disordered alcohol use in the past 12 months was assessed using an item from the AUDIT (Babor et al., 2001). Participants were asked, 'How often did you have more than a sip or taste of alcohol of any kind in the past 12 months?', with response options ranging from 1 = every day to 8 = never in the last 12 months.

Frequency of alcohol use was categorised as 0 = Never (including young men who reported just having a sip or taste); 1 = Monthly or less; 2 = 2 to 4 times a month; 3 = 2 to 3 times a week; 4 = 4 or more times a week.

Standard drinks on single occasion

In each wave, number of standard drinks on a drinking day was assessed using another item from the AUDIT (Babor et al., 2001). Participants were asked, 'How many standard drinks do you typically have on a day when you are drinking alcohol?', with response options ranging from 0 = one or two to 4 = ten or more.

Standard drinks on a single occasion were categorised as 0 = Non-drinker (i.e. those who were categorised as 0 = Never on the frequency of alcohol use measure described above); 1 = 1 or 2 standard drinks; 2 = 3 or 4 standard drinks; 3 = 5 or 6 standard drinks; 4 = 7 to 9 standard drinks; 5 = 10 or more standard drinks.

Age of first drink

In Wave 1, respondents were asked, 'How old were you when you first drank more than just a sip or taste of alcohol?' Respondents were able to enter their age in years into a free-text field. Boys and young men were categorised as '0 = Non-drinkers', '1 = Childhood (1-12 years)' if they reported having their first drink at 12 years of age or earlier; '2 = Teenage (13-17)' if they reported having their first drink between the ages of 13 and 17 years; and '3 = Adult (18+)' if they reported having their first drink after turning 18 years old.

Key exposures: Self-reported masculinity measures

Conformity to Masculine Norms Inventory (CMNI)

In Wave 1, men's views on masculinity were measured using the Conformity to Masculine Norms Inventory (CMNI). The CMNI comprises 22 items and total scores range from 0 to 22, with higher scores indicating greater conformity to masculine norms (Mahalik et al., 2003). The 22 items are also grouped into 11 distinct domains.

Traditional Masculinity-Femininity Scale (TMF)

In Wave 4, self-reported gender role identity was measured using the Traditional Masculinity-Femininity Scale (TMF). The TMF comprises 6 items, each scored from 1 ('not at all masculine') to 7 ('totally masculine'). These are added to give a total TMF score ranging from 6 to 42, with higher scores indicating greater self-ascribed masculinity (Kachel et al., 2016).

Confounders: Demographic and other measures

Age

Age was coded using 4 categories: 1 = 18-24 years 'young adult men'; 2 = 25-34 years 'early adult men'; 3 = 35-44 years 'middle adult men'; 4 = 45-57 years 'later adult men'.

Area-level socio-economic disadvantage

Disadvantage was measured with Socio-Economic Indexes for Areas (SEIFA), a measure developed by the Australian Bureau of Statistics (ABS) that ranks geographical areas of Australia according to relative socio-economic advantage and disadvantage. The 2011 SEIFA measure used in the current research is based on information from the Index of Relative Socio-Economic Disadvantage (IRSD). Detailed information about SEIFA may be sourced from the ABS website (ABS, 2021). For the current analyses, a 3-category indicator of disadvantage was generated using the 2011 SEIFA percentage variable and coded as 1 = High disadvantage (bottom 25%); 2 = Middle disadvantage (middle 50%); and 3 = Low disadvantage (top 25%).

Region

An indicator of region was generated using the Australian Statistical Geography Standard (ASGS), which defines geographical locations in terms of remoteness based on the 2011 Census of Population and Housing. Detailed information about the Remoteness structure may be sourced from the ABS website (ABS, 2021). For the current analyses, region was coded as 0 = Major cities; 1 = Inner regional; and 2 = Outer regional (also includes remote and very remote).

Sexual identity

Respondents were asked, 'Do you think of yourself as:' and asked to select one of the following options: 1 = Heterosexual; 2 = Bisexual; 3 = Homosexual; 4 = Not sure; 5 = Other. Those who selected heterosexual were coded as '0 = Heterosexual' and those who selected bisexual, homosexual, not sure or other were coded as '1 = Not heterosexual'.

Marital status

Respondents were asked, 'What is your present marital status?' Response options included 1 = Never married; 2 = Widowed; 3 = Divorced; 4 = Separated but not divorced; 5 = Married/de facto. Marital status was coded into 3 categories: '1 = Never married' for those who responded that they were never married; '2 = Currently married/partnered' for those who responded that they were married or in a de facto relationship; and '3 = Previously married/partnered' for those who indicated they were either divorced, separated or widowed.

Drug use

Men's use of illicit drugs was generated using a combination of measures assessing the use of 6 illicit substances in the past 12 months including marijuana, heroin, opiates other than heroin, amphetamines, ecstasy and cocaine. An indicator was generated for any illicit drug use in the past 12 months. If respondents selected 'None' for each drug, they were coded as '0 = No', and if respondents reported use of any substance they were coded as '1 = Yes'.

Financial stress

Financial stress was measured through a series of questions asking respondents if, over the past 12 months, they had asked for financial help from friends or family, and how many of the following could not be paid for due to a shortage of money: (a) a prescription, (b) medical care, (c) bills, (d) mortgage/rent. If respondents indicated 'No' for all of the questions, they were coded as '0 = No', and if respondents selected 'Yes' to any of the questions, they were coded as '1 = Yes'.

Social support

Social support was measured using the Medical Outcomes Study (MOS) Social Support Scale, which assesses the level of perceived support through items such as: 'someone to count on when you need to talk', 'someone to give advice during a crisis', 'someone to provide information', 'someone to confide in', 'someone whose advice you value', 'someone to share worries or fears with', 'someone to turn to for suggestions', and 'someone who understands your problems'. Respondents rated each item on a scale from 1 to 5. The mean score across all items was calculated and categorised into 3 groups: low support: mean score between 1 and 2.875; moderate support: mean score between 2.875 and 4.875; and high support: mean score equal to 5. These 3 categories were used in subsequent analyses.

Employment type

Employment was measured by asking respondents about the nature of their main job and their current employment status – whether they were employed, unemployed or neither working nor seeking work. These variables were combined to create a categorical employment variable with the following classifications: '0 = Neither working nor looking for work', '1 = Unemployed and looking for work', '2 = Self-employed', '3 = Casual or temporary or Fixed-term contract', '4 = Employed/-type unknown or Permanent or ongoing'.

Suicidal behaviours

Men were asked to respond either 'yes' or 'no' to the following questions around their experience with suicidal thoughts, plans and attempts.

- Have you seriously thought about killing yourself ever in your life? (thoughts)
- Have you ever made a plan about how you would kill yourself ever in your life? (plans)
- Have you ever tried to kill yourself ever in your life? (attempt)

These questions were coded as indicators of whether men had reported any suicidal behaviour by 2013–14 and by 2022, with '0 = No' and '1 = Yes'.

Mental health conditions

Depressive symptoms

Depressive symptoms were measured using the Patient Health Questionnaire (PHQ)-9. The PHQ-9 assesses the experience and severity of depressive symptoms over the past 2 weeks (Kroenke et al., 2001). For each respondent, a total PHQ-9 score was calculated by summing individuals' responses to 9 questions, resulting in a total score ranging from 0 to 21. Depressive symptoms were categorised as '1 = No or minimal depression' (score between 0 and 4), '2 = Mild depression' (score between 5 and 9) and '3 = Moderate or severe depression' (score of 10 or greater).

Anxiety diagnosis

Whether men had ever received an anxiety diagnosis by 2013–14 and by 2022 was measured with the question, 'Has a doctor or other health professional ever told you that you had this condition? Anxiety disorders.' Responses were coded as '0 = Never diagnosed with an anxiety disorder' and '1 = Ever diagnosed with an anxiety disorder'.

Data analysis methods

Statistical analyses were performed using R v4.5.1 and Stata v19.

Modified Poisson regression models (with a robust error variance (Zou, 2004)) were fitted to assess associations of alcohol use and masculinity for:

1. **Longitudinal analysis:** men who had not reported using any IPV behaviour by 2013–14 and who responded either 'yes' or 'no' to both questions about IPV use in 2022
2. **Cross-sectional study in Wave 1:** men who had valid answers (either no to all questions or yes to any questions) for the questions about IPV behaviours by 2013–14
3. **Cross-sectional study in Wave 4:** men who had valid answers to any of the IPV behaviour (emotional-type, physical) by 2022.

These models included adjustments for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support as detailed below.

For the research questions on masculinity, principal component analysis (PCA), a dimensionality reduction technique, was applied to the 11 CMNI masculinity domains in the longitudinal sample to simplify the data structure and reduce the number of variables under consideration (Jolliffe, 2011). PCA transforms the original, potentially correlated variables into a new set of uncorrelated variables called principal components, while preserving as much variance in the data as possible. The first 4 principal components together account for approximately 52% of the total variation in this analysis, with each component primarily associated with specific masculinity domains. An additional advantage of PCA is that the components are orthogonal (i.e. uncorrelated), meaning that including or excluding any component in a regression model does not affect the estimates of the others.

All associations were reported as relative risks, with 95% confidence intervals and *p* values.

In addition to the 2 key exposure variables examined through the main research questions, previous studies have identified several other factors associated with IPV use. These include age (Cadely et al., 2021; Clemens et al., 2023; Johnson et al., 2015), region (Edwards, 2015; Moore et al., 2023), socio-economic disadvantage (Meyer et al., 2024), marital status (Sutton & Dawson, 2021), sexual identity (Holmes et al., 2022; Trombetta & Rollè, 2023), drug use and alcohol use (Gilchrist et al., 2010; Spencer et al., 2024; Stephens-Lewis et al., 2021) and financial stress (Clare et al., 2021; Keilholtz et al., 2023).

Research question 1

In research question 1, we aimed to consider the relationship between men's alcohol use and the later use of IPV. As outlined in Table S2, the outcome variable was new incidence of IPV; that is, men who hadn't reported IPV use by 2013-14 but did report use by 2022.

As each of the exposure variables were expected to be strongly associated with each other, they were included in separate models. To account for the potential influence of other associated factors, several other indicators with known links to the outcome variable and exposure variables were included as covariate variables (see Table S2).

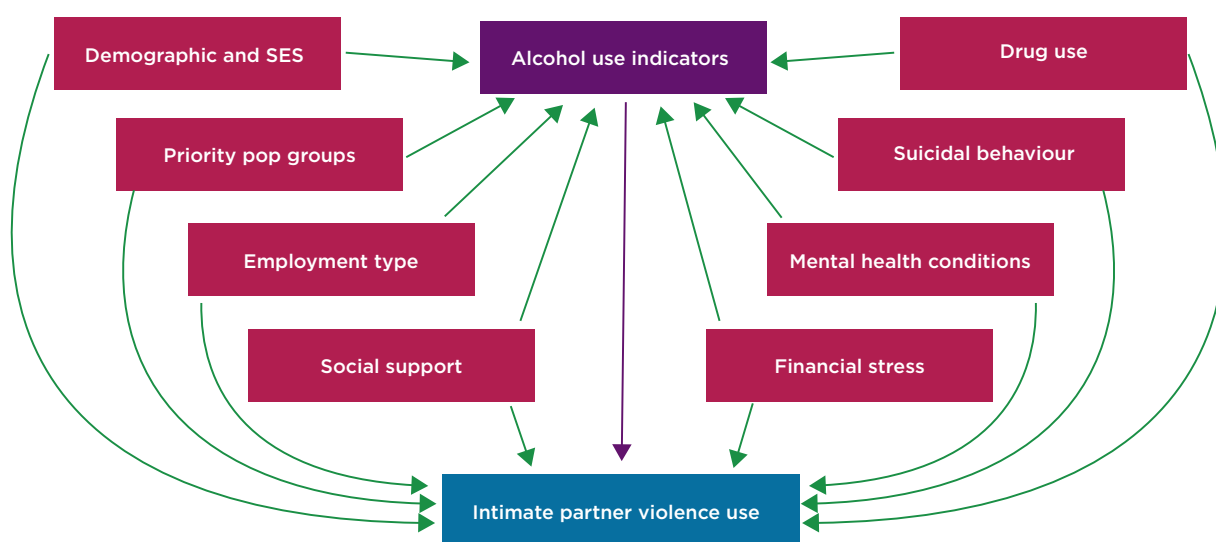
Prior research indicates that several factors act as confounders in the relationship between alcohol use and IPV use. Age is associated with both alcohol consumption patterns and IPV risk, with younger adults often reporting higher levels of both (Leggat et al., 2022; Saint-Eloi Cadely et al., 2020). Region (urban versus rural) influences alcohol availability and social norms. Disability can increase vulnerability to IPV and is linked to higher rates of alcohol misuse, partly due to stress and social isolation (Aram et al., 2023; Breiding & Armour, 2015). Relationship instability and separation are associated with increased alcohol use and IPV risk, reflecting stress and conflict dynamics (Kulak et al., 2025). Sexual minority individuals often face unique stressors that elevate IPV risk and influence alcohol use patterns (Cafferky et al., 2018). Substance use frequently co-occurs with alcohol misuse and is a strong predictor of IPV, making it a critical confounder (Cafferky et al., 2018). Economic strain predicts harmful drinking and IPV perpetration, often through increased conflict and stress in relationships (WHO, 2006). Mental ill health is also associated with both alcohol misuse and IPV (et al., 2015; Puddephatt et al., 2022).

Figures S1 and S2 describe the assumed underlying relationships between variables included in the regression models using directed acyclic graphs (DAGs), taking into account when measures were obtained. These graphs use relationships (assumed or known) between all variables (shown using directed arrows) to determine which potential confounders should be included in the regression model, and which confounders should not be included because their inclusion will result in biased results. These DAGs were created using causal inference approaches (Pearl, Glymour et al. 2016, Textor, van der Zander et al. 2017). The key exposure in each model is shown in purple, and the key outcome is shown in blue. Relationships (assumed or known) between variables are shown using directed arrows.

Table S2: Structure of the analytic model tested to address research question 1

Outcome variable	Exposure variables	Covariate variables
IPV (new occurrence or incidence)	Alcohol abuse Frequency of alcohol use Standard drinks on single occasion Age of first drink	Age Region Socio-economic disadvantage Marital status Sexual identity Employment type Drug use Financial stress Mental health conditions Suicidal behaviours Social support

Note: Exposure variables are examined one at a time.

Figure S1: Directed acyclic graphs on the assumed underlying relationships between alcohol use, IPV use and other variables

Notes: Directed acyclic graphs illustrate the assumed associations between different alcohol use indicators (including age at first drink, frequency of alcohol consumption, number of standard drinks on a typical drinking day, and AUDIT score) and IPV use. Confounders include mental health conditions, suicidal behaviour, drug use, selected priority population group variables, socio-economic indicators and demographic factors.

Research question 2

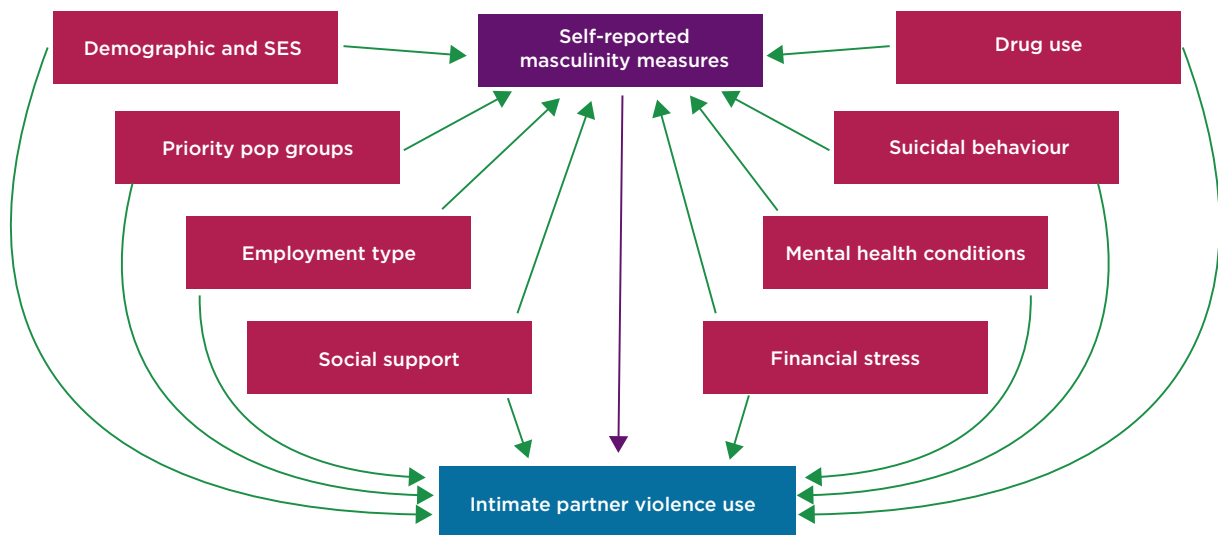
The aim of research question 2 was to examine the association between self-reported masculinities and the use of IPV. As shown in Table S3, IPV use was the outcome variable, and measures of self-reported masculinities were exposure variables.

Self-reported masculinities have been shown to be associated with age (Cazenave, 1984; Diamond, 2006), region, (Carrington, 2008; Silva, 2022), socio-economic disadvantage (Moreno-Bella et al., 2019; Nilan, 2013), marital status (Macdonald, 1987; Peel et al., 2020), sexual identity (Connell, 1992; Winer, 2024), drug use and alcohol use (Darcy, 2018; Mullen et al. 2007; Quintero, 1998), financial stress (Anelay, 2002) and mental ill health (Bonell et al., 2022; Herreen et al., 2021; Seidler et al., 2016).

Table S3: Structure of the analytic model tested to address research question 2

Outcome variable	Exposure variable	Covariate variables
IPV use (ever by 2022)	CMNI score 11 CMNI domains Principal components	Age Region Socio-economic disadvantage Marital status Sexual identity Employment type Drug use Financial stress Mental health conditions Suicidal behaviours Social support

Note: Exposure variables are examined one at a time.

Figure S2: Directed acyclic graphs on the assumed underlying relationships between self-reported masculinity measures, IPV use and other variables

Notes: Directed acyclic graphs on the assumed underlying relationships between self-reported masculinity measures (CMNI in 2013–14, TMF in 2022) and IPV use. Confounders include mental health conditions, suicidal behaviour, drug use, selected priority population group variables, socio-economic indicators, and demographic factors.

Research question 3

We assessed the combined influence of alcohol use and self-reported masculinity measures on IPV risk using 2 complementary approaches:

1. Interaction (effect modification): We tested whether the alcohol-IPV association differed across levels of self-reported masculinities by including an alcohol × masculinity interaction term in the model.
2. Joint effects: We estimated IPV risk for groups defined by combinations of alcohol risk and masculinity levels, compared with a baseline group with low levels of both exposures. These comparisons show which combined-exposure groups had higher or lower observed risk but do not on their own demonstrate interaction.

For both approaches, we used the same IPV outcome definitions and adjusted for the same covariates as the main analyses.

Results

Research question 1: Longitudinal analysis

Alcohol measures

Table S4: Associations between indicators of alcohol use in 2013-14 and incidence of IPV between 2013-14 and 2022

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
AUDIT score						<0.001				0.003
Low risk (<8)	13.6	[11.8, 15.5]	2,529	-	-		2,367	-	-	
Hazardous alcohol use (8-15)	16.4	[13.5, 19.9]	851	1.42 [1.19, 1.70]	<0.001		791	1.27 [1.05, 1.53]	0.015	
Harmful alcohol use or probable dependence (≥16)	25.5	[17.9, 35.1]	198	1.96 [1.50, 2.56]	<0.001		186	1.57 [1.18, 2.10]	0.002	
Alcohol frequency 12 months						0.658				0.484
Non-drinker	11.4	[7.8, 16.3]	350	-	-		307	-	-	
Monthly or less	14.1	[10.5, 18.5]	548	0.94 [0.67, 1.33]	0.744		509	0.94 [0.67, 1.33]	0.470	
2 to 4 times a month	14.6	[11.7, 18.1]	979	1.01 [0.74, 1.37]	0.972		909	1.01 [0.74, 1.37]	0.837	
2 to 3 times a week	14.7	[11.6, 18.4]	911	1.05 [0.77, 1.43]	0.762		856	1.05 [0.77, 1.43]	0.736	
4 or more times a week	16.8	[13.9, 20.2]	989	1.14 [0.84, 1.53]	0.407		917	1.14 [0.84, 1.53]	0.491	
Number of standard drinks on drinking day						<0.001				0.008
None	11.4	[7.8, 16.3]	350	-	-		307	-	-	
1 or 2	13.4	[11.0, 16.1]	1,417	0.86 [0.64, 1.17]	0.339		1,332	0.88 [0.65, 1.21]	0.437	
3 or 4	15.0	[12.1, 18.6]	1,094	0.99 [0.73, 1.34]	0.964		1,023	0.96 [0.7, 1.32]	0.82	
5 or 6	14.9	[10.9, 20.1]	428	1.14 [0.81, 1.61]	0.449		390	1.06 [0.75, 1.51]	0.743	
7 or 8	21.9	[14.6, 31.4]	201	1.63 [1.13, 2.36]	0.009		187	1.33 [0.9, 1.96]	0.149	
10 or more	25.1	[17.8, 34.2]	160	2.01 [1.39, 2.89]	<0.001		147	1.55 [1.05, 2.28]	0.026	
Alcohol – age first drink						0.279				0.739
Non-drinker	12.1	[7.4, 19.1]	199	-	-		172	-	-	
Childhood (1-12 years)	12.1	[6.0, 23.1]	84	1.18 [0.66, 2.13]	0.573		76	1.08 [0.57, 2.04]	0.821	
Teenage (13-17)	16.1	[14.1, 18.3]	2,179	1.11 [0.78, 1.58]	0.570		2,030	1.03 [0.7, 1.52]	0.873	
Adult (18+)	13.2	[10.8, 16.2]	1,296	0.85 [0.58, 1.24]	0.394		1,201	0.93 [0.63, 1.39]	0.732	
Total	14.7	[13.3, 16.3]	3,798							

Notes: Adjusted RR: adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use, depression symptoms category, ever diagnosed with anxiety.

Source: *Ten to Men* Waves 1 and 4

Other covariates

Table S5: Associations between confounders in 2013-14 and incidence of IPV between 2013-14 and 2022 when using Total AUDIT score as the key predictor

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
Age						<0.001				<0.001
18-24	18.5	[13.9, 24.0]	395	-	-		347	-	-	
25-34	17.0	[13.6, 21.2]	760	0.81 [0.63, 1.04]	0.097		682	0.70 [0.51, 0.96]	0.027	
35-44	16.1	[13.3, 19.3]	1,130	0.78 [0.61, 0.98]	0.036		1,017	0.58 [0.42, 0.82]	0.002	
45-57	10.5	[8.5, 12.9]	1,513	0.51 [0.40, 0.65]	<0.001		1,298	0.36 [0.26, 0.52]	<0.001	
SEIFA IRSD						0.039				0.138
High disadvantage	15.4	[12.1, 19.4]	750	-	-		647	-	-	
Middle disadvantage	15.9	[14.0, 18.0]	1,936	1.01 [0.82, 1.23]	0.954		1,709	1.06 [0.85, 1.31]	0.625	
Low disadvantage	12.0	[9.3, 15.3]	1,112	0.79 [0.63, 1.00]	0.050		988	0.86 [0.67, 1.11]	0.244	
Remoteness						0.413				0.393
Major cities	14.8	[13.1, 16.8]	2,282	-	-		2,026	-	-	
Inner regional	13.5	[10.9, 16.8]	863	0.92 [0.75, 1.12]	0.404		750	0.88 [0.71, 1.08]	0.227	
Outer regional/remote	16.1	[11.7, 21.7]	653	1.09 [0.89, 1.33]	0.425		568	1.03 [0.83, 1.29]	0.760	
Sexuality						0.773				0.172
Heterosexual	14.4	[12.9, 16.1]	3,581	-	-		3,182	-	-	
Not heterosexual	18.4	[11.4, 28.3]	184	0.95 [0.65, 1.37]	0.773		162	0.76 [0.51, 1.13]	0.172	
Marital status						0.200				0.020
Single/never married	17.6	[14.2, 21.6]	796	-	-		716	-	-	
Currently married/partnered	13.5	[11.8, 15.3]	2,794	0.85 [0.70, 1.02]	0.074		2,482	1.47 [1.12, 1.94]	0.006	
Previously married/partnered	14.0	[8.3, 22.5]	177	0.91 [0.61, 1.34]	0.620		146	1.46 [0.93, 2.31]	0.102	
Drug use 12 months						<0.001				0.016
No	13.8	[12.3, 15.6]	3,273	-	-		2,953	-	-	
Yes	20.0	[16.1, 24.5]	447	1.67 [1.38, 2.03]	<0.001		391	1.33 [1.05, 1.67]	0.016	
Experienced financial stress						0.013				0.305
No	14.0	[12.4, 15.8]	3,010	-	-		2,667	-	-	
Yes	16.9	[13.8, 20.4]	775	1.26 [1.05, 1.50]	0.013		677	0.90 [0.74, 1.10]	0.305	

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
Social support						0.002				0.001
None/little of the time	17.5	[13.9, 21.9]	657	-	-		574	-	-	
Some/most of the time	15.8	[13.8, 18.0]	2,251	0.97 [0.80, 1.19]	0.805		2,006	1.02 [0.82, 1.26]	0.807	
All of the time	9.3	[7.0, 12.2]	858	0.66 [0.51, 0.86]	0.002		764	0.65 [0.48, 0.88]	0.005	
Disability										0.031
No	12.3	[10.5, 14.3]	2,062	-	-		1,848	-	-	
Yes	17.9	[15.5, 20.6]	1,720	1.33 [1.14, 1.55]	<0.001		1,496	1.21 [1.02, 1.45]	0.031	
Employment type						0.858				0.186
Unemployed/not looking for work	13.9	[10.0, 19.0]	360	-	-		314	-	-	
Employed -- Self/casual/fixed	14.6	[11.6, 18.3]	964	1.09 [0.8, 1.48]	0.583		854	1.16 [0.84, 1.58]	0.346	
Permanent or ongoing	14.7	[12.9, 16.8]	2,470	1.07 [0.81, 1.42]	0.628		2,176	1.3 [0.96, 1.76]	0.091	
Suicidal behaviours any						<0.001				<0.001
No	13.8	[12.3, 15.5]	3,367	-	-		2,637	-	-	
Yes	22.4	[16.7, 29.3]	384	2.16 [1.85, 2.52]	<0.001		707	1.84 [1.53, 2.22]	<0.001	
Moderate to severe depression category						<0.001				0.173
No	12.9	[11.2, 14.8]	2,692	-	-		2,418	-	-	
Mild	18.1	[14.9, 21.7]	758	1.49 [1.25, 1.79]	<0.001		665	1.21 [0.99, 1.48]	0.063	
Moderate to severe	22.6	[16.5, 30.3]	299	1.81 [1.43, 2.29]	<0.001		261	1.15 [0.85, 1.56]	0.357	
Ever diagnosed with anxiety						<0.001				0.144
No	11.9	[10.4, 13.6]	2,977	-	-		3,009	-	-	
Yes	24.6	[20.6, 29.0]	807	1.47 [1.19, 1.83]	<0.001		335	1.2 [0.94, 1.52]	0.144	
Total	14.7	[13.3, 16.3]	3,798							

Notes: Adjusted RR: adjusted for all variables in this table and total AUDIT score.

Source: Ten to Men Waves 1 and 4

Research question 1: Cross-sectional at Wave 1

Alcohol measures

Table S6: Associations between indicators of alcohol use in 2013-14 and lifetime use of IPV by 2013-14

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Obs.	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
AUDIT score						<0.001				<0.001
Low risk (<8)	18.4	[17.3, 19.5]	7,916	-	-		7,108	-	-	
Hazardous alcohol use (8-15)	27.2	[25.2, 29.2]	3,305	1.46 [1.36, 1.56]	<0.001		2,991	1.34 [1.24,1.44]	<0.001	
Harmful alcohol use or probable dependence (>=16)	45.7	[42.2, 49.3]	1,082	2.42 [2.24, 2.62]	<0.001		984	1.72 [1.57,1.88]	<0.001	
Alcohol frequency 12 months						<0.001				<0.001
Non-drinker	17.5	[14.8, 20.5]	1,402	-	-		1,151	-	-	
Monthly or less	20.6	[18.4, 23.1]	1,999	1.20 [1.04, 1.37]	0.010		1,669	1.02 [0.88,1.17]	0.815	
2 to 4 times a month	21.4	[19.6, 23.4]	3,671	1.16 [1.02, 1.31]	0.024		3,020	1.06 [0.93,1.21]	0.396	
2 to 3 times a week	23.1	[21.2, 25.2]	2,872	1.23 [1.08, 1.40]	0.002		2,445	1.12 [0.98,1.28]	0.111	
4 or more times a week	30.2	[28.2, 32.3]	3,344	1.60 [1.42, 1.80]	<0.001		2,798	1.29 [1.14,1.47]	<0.001	
Number standard drinks on drinking day						<0.001				0.004
None	17.5	[14.8, 20.5]	1,402	-	-		1,151	-	-	
1 or 2	20.8	[19.2, 22.5]	4,169	1.13 [1.00, 1.28]	0.049		3,728	1.06 [0.93,1.20]	0.390	
3 or 4	22.7	[20.9, 24.7]	3,447	1.29 [1.14, 1.46]	<0.001		3,052	1.14 [1.01,1.30]	0.042	
5 or 6	27.4	[24.6, 30.3]	1,808	1.41 [1.24, 1.61]	<0.001		1,585	1.16 [1.01,1.33]	0.039	
7 or 8	30.6	[26.3, 35.2]	916	1.60 [1.38, 1.85]	<0.001		787	1.27 [1.09,1.49]	0.002	
10 or more	30.2	[26.2, 34.5]	893	1.72 [1.48, 1.98]	<0.001		780	1.25 [1.07,1.46]	0.004	
Alcohol – age first drink						<0.001				<0.001
Non-drinker	11.9	[9.1, 15.5]	847	-	-		679	-	-	
Childhood (1-12 years)	37.4	[31.5, 43.8]	410	3.17 [2.56, 3.94]	<0.001		342	1.78 [1.41,2.26]	0.001	
Teenage (13-17)	26.5	[25.2, 27.8]	7,858	2.17 [1.81, 2.60]	<0.001		6,584	1.56 [1.28,1.91]	0.003	
Adult (18+)	18.3	[16.8, 20.1]	4,062	1.50 [1.24, 1.81]	<0.001		3,385	1.25 [1.02,1.53]	0.074	
Total	23.2	[22.3, 24.1]	13,393							

Notes: Adjusted *RR*: Adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: *Ten to Men* Wave 1

Other covariates

Table S7: Associations between different confounders in 2013–14 and lifetime use of IPV by 2013–14 when using Total AUDIT score as the key predictor

Variables Wave 4	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
Age						<0.001				0.003
18–24	16.6	[14.5, 18.9]	1,904	-	-		1,576	-	-	
25–34	24.9	[23.0, 26.9]	3,006	1.49 [1.32, 1.67]	<0.001		2,504	1.24 [1.09, 1.42]	0.001	
35–44	26.5	[24.7, 28.4]	4,016	1.54 [1.38, 1.72]	<0.001		3,369	1.23 [1.08, 1.41]	0.003	
45–57	22.7	[21.0, 24.4]	4,467	1.30 [1.16, 1.45]	<0.001		3,633	1.14 [0.99, 1.31]	0.074	
SEIFA IRSD						<0.001				0.081
High disadvantage	24.7	[22.9, 26.6]	3,462	-	-		2,768	-	-	
Middle disadvantage	23.2	[22.0, 24.5]	6,759	0.93 [0.87, 1.00]	0.048		5,600	0.94 [0.87, 1.02]	0.626	
Low disadvantage	21.1	[19.2, 23.1]	3,176	0.78 [0.71, 0.85]	<0.001		2,715	0.96 [0.88, 1.04]	0.035	
Remoteness						0.138				0.270
Major cities	22.6	[21.5, 23.8]	7,906	-	-		6,607	-	-	
Inner regional	24.8	[23.1, 26.7]	2,980	1.06 [0.98, 1.14]	0.137		2,436	0.94 [0.87, 1.02]	0.131	
Outer regional/remote	24.9	[22.7, 27.2]	2,511	1.07 [0.99, 1.16]	0.093		2,040	0.96 [0.88, 1.04]	0.324	
Sexuality						0.144				0.019
Heterosexual	23.6	[22.7, 24.6]	12,259	-	-		10,391	-	-	
Not heterosexual	19.7	[16.3, 23.5]	874	0.91 [0.80, 1.03]	0.144		692	0.84 [0.73, 0.97]	0.019	
Marital status						<0.001				<0.001
Single/never married	19.1	[17.6, 20.7]	3,453	-	-		2,843	-	-	
Currently married/ partnered	24.4	[23.2, 25.7]	8,937	1.20 [1.11, 1.29]	<0.001		7,553	1.42 [1.29, 1.57]	<0.001	
Previously married/ partnered	32.5	[28.4, 36.8]	876	1.59 [1.41, 1.78]	<0.001		687	1.43 [1.24, 1.64]	<0.001	
Drug use 12 months						<0.001				<0.001
No	19.5	[18.6, 20.5]	10,628	-	-		9,071	-	-	
Yes	36.0	[33.3, 38.8]	2,439	1.81 [1.69, 1.93]	<0.001		2,012	1.38 [1.28, 1.49]	<0.001	
Experienced financial stress						<0.001				<0.001
No	18.5	[17.4, 19.5]	9,100	-	-		7,700	-	-	
Yes	33.4	[31.5, 35.4]	4,178	1.80 [1.69, 1.91]	<0.001		3,383	1.27 [1.18, 1.37]	<0.001	

Variables Wave 4	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
Social support						<0.001				<0.001
None/little of the time	28.4	[26.2, 30.8]	2,732	-	-		2,222	-	-	
Some/most of the time	23.6	[22.3, 24.9]	7,566	0.80 [0.75, 0.86]	<0.001		6,407	0.97 [0.90, 1.05]	0.471	
All of the time	17.3	[15.7, 18.9]	2,856	0.57 [0.52, 0.63]	<0.001		2,454	0.77 [0.69, 0.86]	<0.001	
Disability						<0.001				<0.001
No	17.5	[16.3, 18.7]	6,667	-	-		5,614	-	-	
Yes	29.1	[27.7, 30.5]	6,672	1.66 [1.56, 1.77]	<0.001		5,469	1.20 [1.11, 1.29]	<0.001	
Employment type						<0.001				0.090
Unemployed/not looking for work	26.3	[23.5, 29.3]	1,905	-	-		1,505	-	-	
Employed – Self/casual/fixed	22.8	[20.9, 24.8]	3,557	0.84 [0.77, 0.93]	<0.001		2,956	1.08 [0.97, 1.19]	0.172	
Permanent or ongoing	22.6	[21.4, 23.8]	7,863	0.82 [0.76, 0.90]	<0.001		6,622	1.11 [1.01, 1.23]	0.030	
Suicidal behaviours any						<0.001				<0.001
No	17.9	[16.9, 19.0]	10,159	-	-		8,501	-	-	
Yes	39.3	[37.1, 41.6]	3,122	2.23 [2.10, 2.37]	<0.001		2,582	1.64 [1.52, 1.76]	<0.001	
Depression category						<0.001				<0.001
No	18.2	[17.1, 19.3]	8,379	-	-		7,134	-	-	
Mild	29.0	[26.9, 31.2]	3,041	1.68 [1.57, 1.81]	<0.001		2,575	1.19 [1.10, 1.29]	<0.001	
Moderate to severe	36.4	[33.5, 39.4]	1,697	2.20 [2.05, 2.37]	<0.001		1,374	1.18 [1.07, 1.30]	0.001	
Ever diagnosed with anxiety						<0.001				<0.001
No	20.4	[19.5, 21.3]	11,365	-	-		9,616	-	-	
Yes	41.0	[37.8, 44.2]	1,778	1.97 [1.85, 2.11]	<0.001		1,467	1.33 [1.23, 1.44]	<0.001	
Total	23.2	[22.3, 24.1]	13,393							

Notes: adjusted RR: Adjusted for all variables in this table and Total AUDIT score.

Source: Ten to Men Wave 1

Research question 1: Cross-sectional at Wave 4

Alcohol measures

Table S8: Associations between indicators of alcohol use in 2022 and lifetime use of IPV by 2022

Variables Wave 4	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
AUDIT score						<0.001				<0.001
Low risk (<8)	27.7	[25.8, 29.8]	3,857	-	-		3,309	-	-	
Hazardous alcohol use (8-15)	38.3	[34.5, 42.3]	1,294	1.33 [1.22, 1.44]	<0.001		1,152	1.21 [1.11, 1.32]	<0.001	
Harmful alcohol use or probable dependence (>=16)	54.7	[47.2, 62.0]	374	1.86 [1.68, 2.05]	<0.001		335	1.48 [1.33, 1.65]	<0.001	
Alcohol frequency 12 months						<0.001				<0.001
Non-drinker	26.0	[22.5, 29.8]	943	-	-		704	-	-	
Monthly or less	34.9	[30.4, 39.7]	900	1.05 [0.92, 1.18]	0.483		762	0.94 [0.82, 1.08]	0.370	
2 to 4 times a month	35.9	[31.9, 40.2]	1,152	1.05 [0.94, 1.19]	0.374		1,007	0.99 [0.87, 1.12]	0.870	
2 to 3 times a week	30.8	[27.3, 34.5]	1,366	0.97 [0.86, 1.09]	0.613		1,203	0.91 [0.80, 1.03]	0.149	
4 or more times a week	42.9	[39.0, 47.0]	1,309	1.22 [1.09, 1.36]	<0.001		1,125	1.05 [0.93, 1.19]	0.438	
Number standard drinks on drinking day						<0.001				<0.001
None	28.5	[24.2, 33.1]	669	-	-		599	-	-	
1 or 2	30.1	[27.3, 33.0]	2,200	0.87 [0.78, 0.98]	0.023		1,649	0.86 [0.75, 0.98]	0.020	
3 or 4	35.7	[32.2, 39.4]	1,541	1.02 [0.90, 1.15]	0.774		1,293	0.96 [0.84, 1.10]	0.543	
5 or 6	41.3	[35.9, 46.9]	729	1.19 [1.05, 1.36]	0.008		517	1.09 [0.94, 1.26]	0.272	
7 or 8	39.2	[32.0, 47.0]	328	1.30 [1.11, 1.51]	0.001		267	1.14 [0.97, 1.35]	0.119	
10 or more	46.7	[36.6, 57.0]	206	1.38 [1.16, 1.64]	<0.001		201	1.18 [0.96, 1.44]	0.111	
Alcohol - age first drink						<0.001				0.063
Non-drinker	18.6	[14.0, 24.3]	369	-	-		293	-	-	
Childhood (1-12 years)	35.9	[26.7, 46.1]	195	1.82 [1.42, 2.32]	<0.001		155	1.16 [0.87, 1.54]	0.318	
Teenage (13-17)	41.6	[39.0, 44.2]	3,172	1.77 [1.46, 2.13]	<0.001		2,692	1.13 [0.91, 1.41]	0.280	
Adult (18+)	30.0	[26.8, 33.3]	1,683	1.35 [1.11, 1.65]	0.003		1,406	1.01 [0.80, 1.26]	0.954	
Total	34.2	[32.3, 36.1]	5,698							

Notes: adjusted *RR*: Adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: *Ten to Men* Wave 4

Other covariates

Table S9: Associations between different confounders in 2022 and lifetime use of IPV by 2022 when using Total AUDIT score as the key predictor

Variables Wave 4	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	Overall p value	Overall p value
Age						<0.001				<0.001
18–24	12.7	[9.1, 17.4]	443	-	-		362	-	-	
25–34	32.5	[28.0, 37.3]	735	2.64 [2.03, 3.44]	<0.001		626	2.20 [1.66, 2.91]	<0.001	
35–44	42.6	[38.7, 46.6]	1,131	3.41 [2.65, 4.38]	<0.001		925	2.87 [2.18, 3.79]	<0.001	
45–57	37.3	[35.0, 39.7]	3,389	2.93 [2.29, 3.75]	<0.001		2,883	2.77 [2.11, 3.63]	<0.001	
SEIFA IRSD						<0.001				<0.001
High disadvantage	36.5	[32.7, 40.5]	1,461	-	-		1,184	-	-	
Middle disadvantage	34.8	[32.3, 37.5]	2,868	0.90 [0.83, 0.97]	0.008		2,416	0.90 [0.83, 0.98]	0.021	
Low disadvantage	29.6	[26.0, 33.5]	1,348	0.75 [0.67, 0.83]	<0.001		1,196	0.81 [0.73, 0.91]	<0.001	
Remoteness						0.063				0.476
Major cities	33.1	[30.8, 35.4]	3,552	-	-		2,998	-	-	
Inner regional	35.8	[32.0, 39.7]	1,291	1.04 [0.96, 1.13]	0.345		1,094	0.93 [0.85, 1.03]	0.155	
Outer regional/remote	40.8	[35.6, 46.2]	855	1.12 [1.02, 1.23]	0.020		704	0.97 [0.87, 1.08]	0.583	
Sexuality						0.587				0.476
Heterosexual	31.3	[29.4, 33.2]	5,087	-	-		4,483	-	-	
Not heterosexual	37.6	[30.4, 45.3]	346	1.04 [0.90, 1.21]	0.549		313	0.95 [0.82, 1.10]	0.476	
Marital status						<0.001				<0.001
Single/never married	26.3	[22.1, 31.0]	792	-	-		633	-	-	
Currently married/partnered	34.6	[32.6, 36.7]	4,613	1.35 [1.20, 1.52]	<0.001		3,963	1.37 [1.19, 1.59]	<0.001	
Previously married/partnered	60.7	[52.2, 68.6]	240	2.06 [1.76, 2.42]	<0.001		200	1.56 [1.29, 1.88]	<0.001	
Drug use 12 months						<0.001				<0.001
No	31.6	[29.6, 33.8]	4,736	-	-		4,002	-	-	
Yes	42.4	[37.9, 47.0]	918	1.34 [1.24, 1.46]	<0.001		794	1.20 [1.09, 1.32]	<0.001	
Experienced financial stress						<0.001				<0.001
No	28.2	[26.4, 30.2]	4,637	-	-		4,074	-	-	
Yes	46.7	[41.8, 51.6]	854	1.63 [1.51, 1.76]	<0.001		722	1.29 [1.18, 1.42]	<0.001	

Variables Wave 4	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	Overall p value	Overall p value
Social support						<0.001				<0.001
None/little of the time	37.3	[33.5, 41.2]	1,313	-	-		1,073	-	-	
Some/most of the time	31.9	[29.5, 34.4]	2,943	0.89 [0.82, 0.97]	0.008		2,604	1.02 [0.94, 1.12]	0.61	
All of the time	24.3	[21.0, 27.9]	1,228	0.67 [0.59, 0.75]	<0.001		1,119	0.82 [0.72, 0.92]	0.001	
Disability						<0.001				<0.001
No	28.0	[25.8, 30.3]	3,411	-	-		2,906	-	-	
Yes	43.0	[40.0, 46.1]	2,282	1.50 [1.40, 1.61]	<0.001		1,890	1.17 [1.08, 1.27]	<0.001	
Employment type						<0.001				0.020
Unemployed/not looking for work	38.7	[33.1, 44.6]	624	-	-		503	-	-	
Employed – Self/casual/fixed	39.6	[36.0, 43.3]	1,577	0.99 [0.88, 1.10]	0.797		1,275	1.20 [1.05, 1.37]	0.008	
Permanent or ongoing	30.7	[28.5, 33.0]	3,419	0.83 [0.75, 0.93]	0.001		3,018	1.09 [0.97, 1.23]	0.157	
Suicidal behaviours any						<0.001				<0.001
No	25.6	[23.6, 27.6]	3,658	-	-		3,544	-	-	
Yes	48.8	[44.7, 53.0]	1,309	1.77 [1.64, 1.90]	<0.001		1,252	1.44 [1.32, 1.57]	<0.001	
Moderate to severe depression category						<0.001				<0.001
No	27.7	[25.6, 29.9]	3,620	-	-		3,105	-	-	
Mild	39.7	[35.8, 43.6]	1,312	1.46 [1.34, 1.57]	<0.001		1,104	1.17 [1.07, 1.29]	0.001	
Moderate to severe	48.7	[43.4, 54.1]	734	1.83 [1.69, 1.99]	<0.001		587	1.24 [1.11, 1.39]	<0.001	
Ever diagnosed with anxiety						<0.001				<0.001
No	30.3	[28.4, 32.3]	4,851	-	-		4,143	-	-	
Yes	54.7	[49.5, 59.7]	792	1.59 [1.47, 1.71]	<0.001		653	1.26 [1.15, 1.38]	<0.001	
Total	34.2	[32.3, 36.1]	5,698							

Notes: adjusted RR: Adjusted for all variables in this table and total AUDIT score.

Source: *Ten to Men* Wave 4

Research question 2: Longitudinal analysis

Self-reported masculinity measures

Table S10: Associations between self-reported masculinity measures in 2013-14 and incidence of IPV between 2013-14 and 2022

Variables Wave 1	Obs.	Weighted mean or proportions of variable ¹	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
CMNI score raw numeric					-	-		
cmniscor1	3,349	26.6 [26.4, 26.9]	1.02 [1.01, 1.04]	0.004		1.03 [0.92, 1.16]	0.559	
CMNI score categorical (ref = T1)²								
Tertile 1	1,363				0.057			0.517
Tertile 2	1,275	13.3% [11.0, 15.9]	-	-		-	-	
Tertile 3	711	14.7% [12.2, 17.6]	0.99 [0.82, 1.21]	0.941		0.94 [0.78, 1.15]	0.568	
Individual masculinity domain		17.0% [13.4, 21.2]	1.29 [1.04, 1.59]	0.020		1.09 [0.87, 1.35]	0.457	
Primacy	3,349	2.5 [2.4, 2.5]	1.00 [0.93, 1.08]	0.984		0.99 [0.92, 1.07]	0.830	
Dominance	3,349	2.4 [2.4, 2.5]	1.03 [0.95, 1.11]	0.492		1.02 [0.94, 1.10]	0.614	
Heterosexual	3,349	2.7 [2.6, 2.7]	0.96 [0.91, 1.01]	0.137		0.97 [0.92, 1.03]	0.284	
Women	3,349	1.1 [1.0, 1.1]	0.98 [0.89, 1.07]	0.654		0.98 [0.89, 1.07]	0.651	
Emotional control	3,349	3.2 [3.1, 3.2]	0.94 [0.88, 1.00]	0.063		0.92 [0.86, 0.98]	0.011	
Playboy	3,349	1.5 [1.5, 1.6]	1.12 [1.05, 1.19]	<0.001		1.08 [1.01, 1.15]	0.018	
Violence	3,349	2.3 [2.3, 2.4]	1.14 [1.07, 1.20]	<0.001		1.09 [1.02, 1.15]	0.005	
Pursuit	3,349	3.4 [3.4, 3.5]	1.09 [1.00, 1.19]	0.062		1.07 [0.98, 1.17]	0.131	
Help	3,349	2.5 [2.4, 2.5]	1.07 [0.98, 1.16]	0.116		0.98 [0.91, 1.07]	0.704	
Risk-Taking	3,349	2.7 [2.7, 2.8]	1.13 [1.05, 1.21]	0.001		1.10 [1.02, 1.18]	0.010	
Winning	3,349	2.4 [2.4, 2.5]	1.06 [0.97, 1.15]	0.184		1.04 [0.96, 1.12]	0.391	
Principal components								
pc1	3,349	0.1 [-0.0, 0.1]	1.09 [1.03, 1.15]	0.005		1.05 [0.99, 1.11]	0.074	
pc2	3,349	0.1 [0.0, 0.2]	1.06 [0.98, 1.14]	0.136		1.09 [1.01, 1.17]	0.019	
pc3	3,349	0.0 [-0.0, 0.1]	1.19 [1.10, 1.29]	<0.001		1.13 [1.05, 1.22]	0.001	
pc4	3,349	-0.1 [-0.1, 0.0]	0.94 [0.87, 1.03]	0.176		1.00 [0.92, 1.09]	0.929	
Total	3,349	14.6% [13.1, 16.3]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all confounders and masculinity domains. ¹The weighted proportions of IPV are calculated for the categorical variables, and weighted mean of the continuous variables. ² CMNI scores are divided into 3 equal-sized groups (tertiles) based on their distribution; that is, the number of participants in each group are roughly the same. First tertile has CMNI score ranging from 5 to 25, second tertile from 26 to 30 and the third from 31 to 48. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores.

Source: *Ten to Men* Waves 1 and 4

Other covariates

Table S11: Associations between confounders in 2013–14 and incidence of IPV use between 2013–14 and 2022 when using principal components of self-reported masculinity measures as the key predictors

Variables Wave 1	Obs.	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Age				<0.001
18–24	342	-	-	
25–34	683	0.72 [0.52, 0.98]	0.038	
35–44	1,004	0.64 [0.45, 0.91]	0.013	
45–57	1,320	0.42 [0.29, 0.61]	<0.001	
Marital status				0.060
Single/never married	700	-	-	
Previously married/partnered	155	1.48 [0.95, 2.30]	0.082	
Currently married/partnered	2,494	1.40 [1.06, 1.85]	0.018	
Employment				0.314
Neither working nor looking for work	147	-	-	
Unemployed and looking for work	162	0.70 [0.40, 1.22]	0.205	
Self-employed	451	1.04 [0.65, 1.68]	0.869	
Casual or temporary or fixed-term contract or employed/-type unknown	391	1.14 [0.73, 1.77]	0.575	
Permanent or ongoing	2,198	1.13 [0.75, 1.71]	0.564	
Remoteness (2011 Census based)				0.320
Major cities	2,016	-	-	
Inner regional	764	0.90 [0.73, 1.11]	0.324	
Outer regional	569	1.12 [0.90, 1.41]	0.308	
SEIFA IRSD (2011)				0.182
High disadvantage	605	-	-	
Middle disadvantage	1,695	1.01 [0.81, 1.26]	0.933	
Low disadvantage	1,049	0.83 [0.64, 1.07]	0.147	
Sexuality				0.123
Heterosexual	3,194	-	-	
Not heterosexual	155	0.70 [0.45, 1.08]	0.108	

Variables Wave 1	Obs.	Unadjusted RR [95% CI]	p value	Overall p value
Social support				0.005
None/little of the time	567	-	-	
Some/most of the time	2,004	1.00 [0.80, 1.26]	0.978	
All of the time	778	0.68 [0.50, 0.91]	0.009	
Experienced financial stress				0.765
No	2,676	-	-	
Yes – any financial stress	673	0.97 [0.80, 1.18]	0.735	
Depression symptom				0.002
No or minimal depression	2,431	-	-	
Mild	657	1.37 [1.12, 1.68]	0.002	
Moderate to severe	261	1.64 [1.23, 2.19]	0.001	
Ever diagnosed with anxiety				0.796
No	3,140	-	-	
Yes	209	1.05 [0.76, 1.44]	0.769	
Drug use				0.018
No	2,950	-	-	
Yes	399	1.36 [1.09, 1.70]	0.007	
Suicidal behaviours any				0.003
No	2,824	-	-	
Yes	525	1.44 [1.16, 1.78]	0.001	

Notes: Adjusted *RR*: adjusted for all variables in this table and pc1 to pc4. See Table S5 for weighted proportions and unadjusted risk ratios for the confounders.

Source: *Ten to Men* Waves 1 and 4

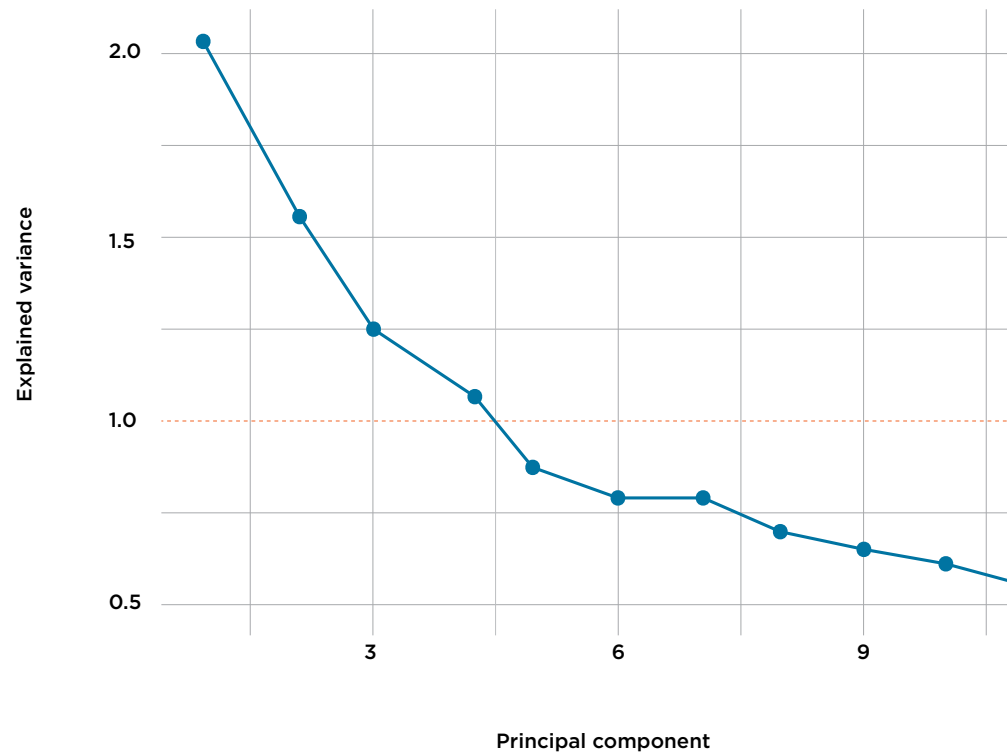
Principal component analysis

Table S12: Principal component analysis results for use of any form of IPV by 2022, for those who have not used any form of IPV by 2013-14 ($n = 3,349$).

	PC1	PC2	PC3	PC4
Primacy	0.23	0.18	-0.47	-0.25
Emotional control	0.05	-0.52	0.07	-0.38
Help	0.11	-0.49	0.02	-0.47
Dominance	0.48	0.10	-0.19	-0.02
Heterosexual	0.26	-0.29	-0.34	0.46
Women	0.39	-0.26	-0.02	0.48
Playboy	0.32	-0.06	0.36	0.02
Violence	0.25	-0.10	0.55	0.06
Pursuit	0.27	0.46	0.04	-0.22
Risk-taking	0.24	0.27	0.40	0.01
Winning	0.43	0.05	-0.16	-0.29

Source: *Ten to Men* Wave 1

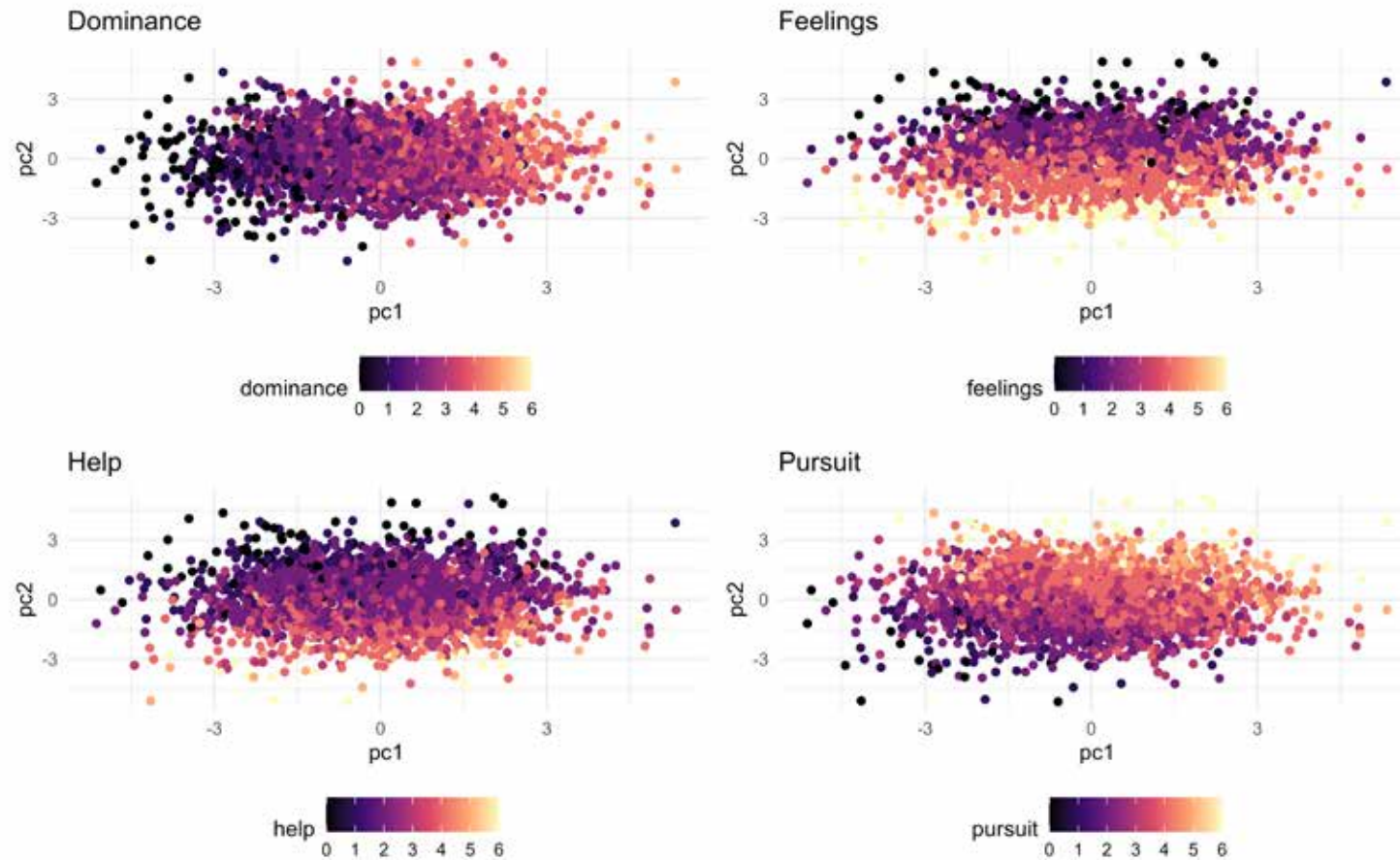
Figure S3: Scree plot showing the explained variance for each principal component derived from the CMNI masculinity domains from the longitudinal analysis data



Notes: Higher values on the vertical axis indicate components that explain more variation. The first 4 components capture most of the variation, and it helps to simplify the analysis by focusing on key patterns.

Source: *Ten to Men* Wave 1

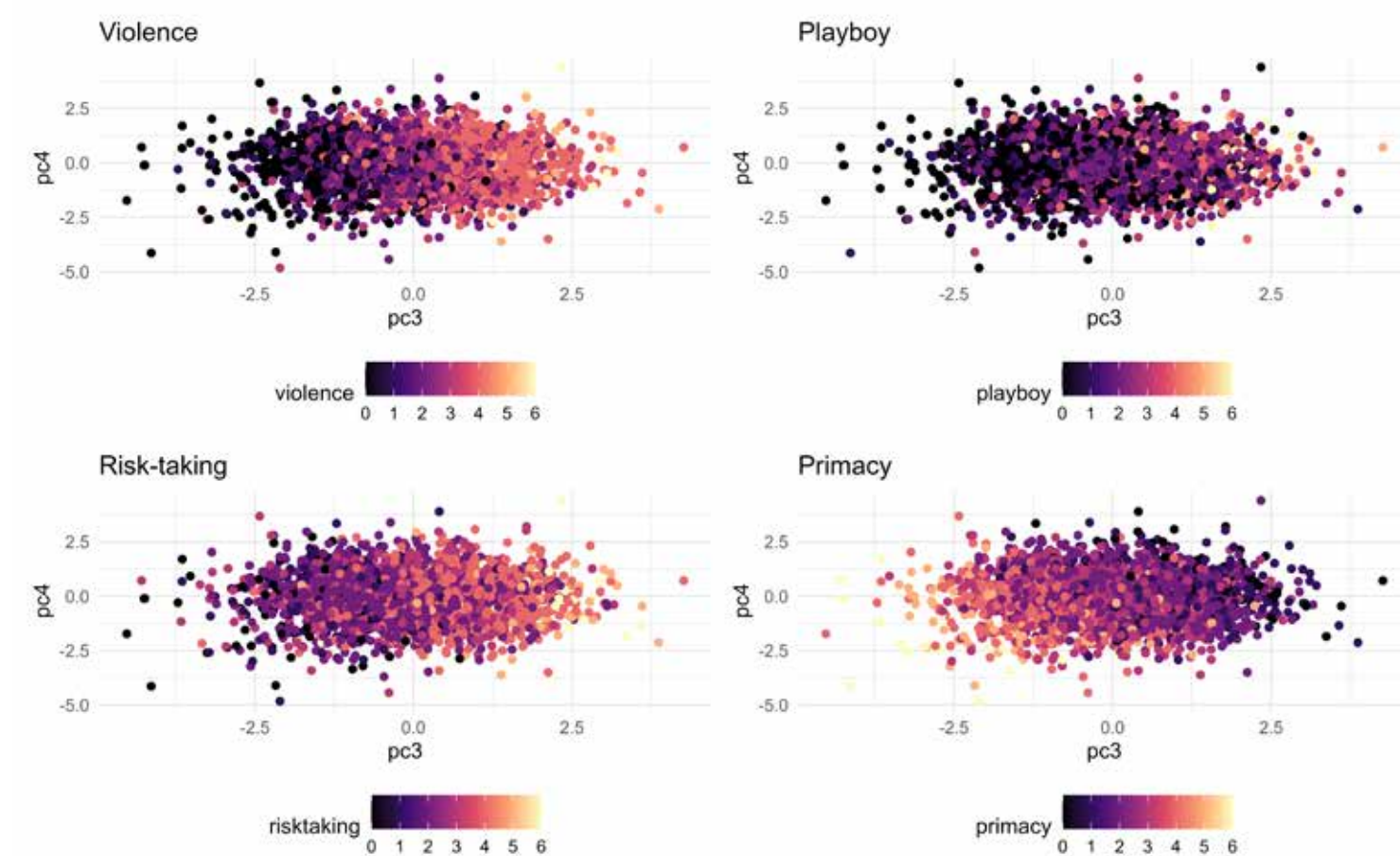
Figure S4: Graphical representation of CMNI domains that are strongly associated with principal component 2 (PC2-long) in the longitudinal analysis sample, plotted on the vertical axes, and PC1-long plotted on the horizontal axes



Notes: PC2 shows a negative relationship with the *emotional control*, and *help* CMNI domains, meaning higher PC2 values correspond to lower scores in these areas. In contrast, PC2 is positively related to the *pursuit* domain, so higher pursuit scores align with higher PC2 values. This component reflects a pattern of strong pursuit of status and importance, while also emotionally expressive and open to seeking support.

Source: *Ten to Men* Wave 1

Figure S5: Graphical representation of CMNI domains that are strongly associated with principal component 3 (PC3-long) in the longitudinal analysis sample, plotted on the horizontal axes, and PC4-long plotted on the vertical axes



Notes: *Violence*, *playboy*, *risk-taking* CMNI domains are positively associated with PC3, the higher PC3 values, the higher domain values; while *primacy* is negatively associated with PC3, the higher primacy domain score, the lower PC3 scores. This component reflects a pattern of high engagement in risk-taking and aggressive behaviours, with low prioritisation of work and study. 'Risk over responsibility' domain.

Source: *Ten to Men* Wave 1

Research question 2: Cross-sectional at Wave 1

Self-reported masculinity measures

Table S13: Associations between each self-reported masculinity measure in 2013–14 and lifetime use of IPV by 2013–14

Variables Wave 1	Obs.	Weighted mean or proportions of variable ^a	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
CMNI score raw numeric								
cmniscor1	11,180	27.6 [27.5, 27.8]	1.03 [1.02, 1.04]	<0.001		1.02 [1.02, 1.03]	<0.001	-
CMNI score categorical (ref = T1)					<0.001			<0.001
Tertile 1	3,902	20.0% [18.4, 21.7]	-	-		-	-	
Tertile 2	4,218	22.9% [21.3, 24.5]	1.16 [1.07, 1.26]	<0.001		1.13 [1.04, 1.22]	0.003	
Tertile 3	3,060	27.1% [24.9, 29.4]	1.41 [1.29, 1.53]	<0.001		1.26 [1.16, 1.37]	<0.001	
Individual masculinity domain					-			-
Primacy	11,180	2.6 [2.6, 2.6]	0.91 [0.89, 0.94]	<0.001		0.95 [0.93, 0.98]	<0.001	
Dominance	11,180	2.5 [2.5, 2.5]	1.07 [1.03, 1.10]	<0.001		1.08 [1.05, 1.11]	<0.001	
Heterosexual	11,180	2.8 [2.8, 2.9]	0.99 [0.97, 1.01]	0.245		0.99 [0.97, 1.01]	0.461	
Women	11,180	1.3 [1.2, 1.3]	1.12 [1.08, 1.16]	<0.001		1.10 [1.07, 1.13]	<0.001	
Emotional control	11,180	3.1 [3.1, 3.2]	1.00 [0.98, 1.03]	0.901		0.98 [0.95, 1.00]	0.066	
Playboy	11,180	1.7 [1.6, 1.7]	1.10 [1.08, 1.13]	<0.001		1.06 [1.04, 1.08]	<0.001	
Violence	11,180	2.4 [2.4, 2.5]	1.18 [1.15, 1.21]	<0.001		1.13 [1.10, 1.15]	<0.001	
Pursuit	11,180	3.4 [3.3, 3.4]	1.02 [0.98, 1.05]	0.295		1.06 [1.02, 1.09]	<0.001	
Help	11,180	2.6 [2.5, 2.6]	1.13 [1.10, 1.17]	<0.001		1.03 [1.00, 1.06]	0.012	
Risk-taking	11,180	2.8 [2.7, 2.8]	1.10 [1.07, 1.13]	<0.001		1.07 [1.05, 1.10]	<0.001	
Winning	11,180	2.5 [2.4, 2.5]	1.01 [0.98, 1.05]	0.381		1.02 [0.99, 1.06]	0.153	
Principal components								
pc1	11,180	0.1 [0.0, 0.1]	1.11 [1.09, 1.14]	<0.001		1.09 [1.07, 1.12]	<0.001	
pc2	11,180	0.1 [0.0, 0.1]	0.92 [0.90, 0.95]	<0.001		1.00 [0.97, 1.02]	0.731	
pc3	11,180	0.0 [0.0, 0.1]	1.20 [1.17, 1.24]	<0.001		1.14 [1.11, 1.17]	<0.001	
pc4	11,180	-0.0 [-0.0, 0.0]	1.06 [1.03, 1.10]	<0.001		1.07 [1.04, 1.10]	<0.001	
Total	11,180	23.3% [22.3, 24.2]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all confounders and masculinity domains.¹ The weighted proportions of IPV are calculated for the categorical variables, and weighted mean of the continuous variables.

Source: *Ten to Men* Wave 1

Other covariates

Table S14: Associations between different confounders in 2013–14 and lifetime use of IPV by 2013–14 when using principal components of masculinity as the key predictor

Variables Wave 1	Obs.	Adjusted RR [95% CI]	p value	Overall p value
Age				<0.001
18–24	1,587	-	-	
25–34	2,520	1.25 [1.10, 1.43]	<0.001	
35–44	3,383	1.29 [1.12, 1.48]	<0.001	
45–57	3,690	1.23 [1.07, 1.42]	0.001	
Marital status				<0.001
Single/never married	2,849	-	-	
Previously married/partnered	720	1.40 [1.22, 1.61]	<0.001	
Currently married/partnered	7,611	1.41 [1.27, 1.55]	<0.001	
Employment				0.483
Neither working nor looking for work	623	-	-	
Unemployed and looking for work	870	1.07 [0.92, 1.25]	0.371	
Self-employed	1,491	1.15 [0.99, 1.34]	0.074	
Casual or temporary or fixed-term contract or employed/-type unknown	1,479	1.11 [0.95, 1.29]	0.179	
Permanent or ongoing	6,717	1.16 [1.01, 1.32]	0.034	
Remoteness (2011 Census Based)				0.366
Major cities	6,634	-	-	
Inner regional	2,472	0.98 [0.91, 1.06]	0.684	
Outer regional	2,074	1.02 [0.94, 1.11]	0.620	
SEIFA IRSD (2011)				<0.001
High disadvantage	2,658	-	-	
Middle disadvantage	5,605	0.97 [0.90, 1.05]	0.466	
Low disadvantage	2,917	0.93 [0.84, 1.02]	0.115	
Sexuality				0.529
Heterosexual	10,506	-	-	
Not heterosexual	674	0.80 [0.69, 0.93]	0.003	

Variables Wave 1	Obs.	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Social support				<0.001
None/little of the time	2,241	-	-	
Some/most of the time	6,473	1.00 [0.93, 1.09]	0.911	
All the time	2,466	0.80 [0.72, 0.90]	<0.001	
Experienced financial stress				<0.001
No	7,755	-	-	
Yes – any financial stress	3,425	1.31 [1.22, 1.40]	<0.001	
Depression symptom				<0.001
No or minimal depression	7,222	-	-	
Mild	2,576	1.32 [1.22, 1.43]	<0.001	
Moderate to severe	1,382	1.37 [1.25, 1.52]	<0.001	
Ever diagnosed with anxiety				<0.001
No	10,286	-	-	
Yes	894	1.28 [1.17, 1.40]	<0.001	
Drug use				<0.001
No	9,140	-	-	
Yes	2,040	1.44 [1.34, 1.55]	<0.001	
Suicidal behaviours any				<0.001
No	8,861	-	-	
Yes	2,319	1.67 [1.55, 1.80]	<0.001	

Notes: Adjusted *RR*: adjusted for all variables in this table and pc1 to pc4. Refer to Table S7 for weighted proportions and unadjusted risk ratios for the confounders.

Source: *Ten to Men* Wave 1

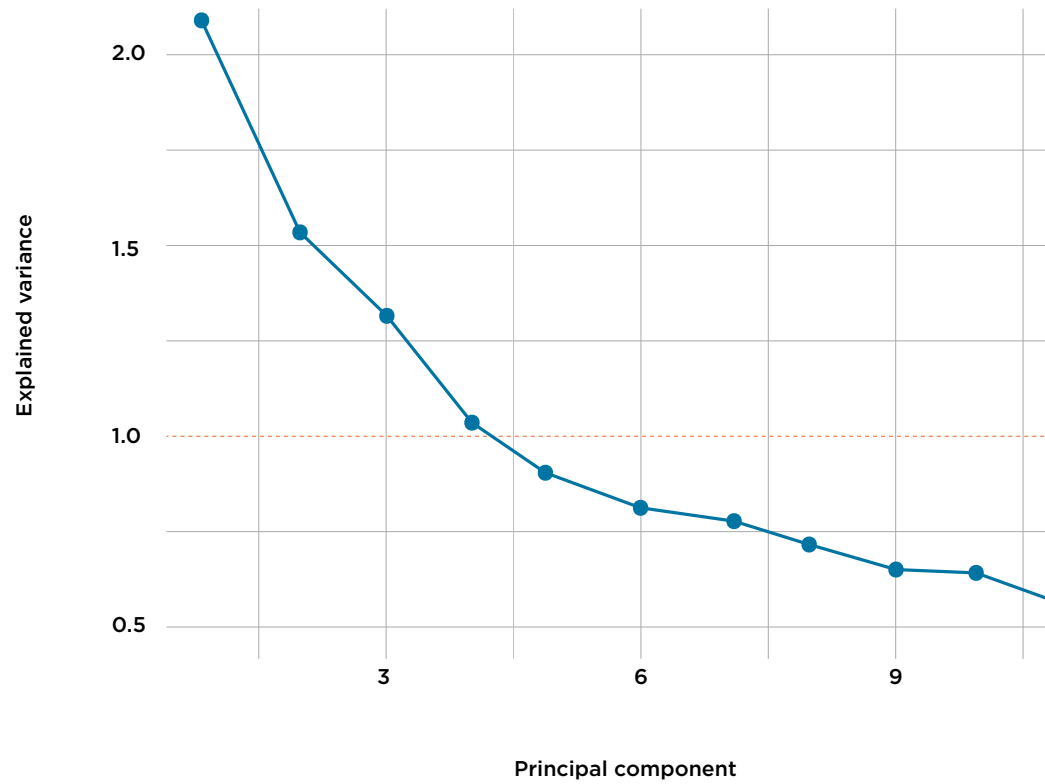
Principal component analyses

Table S15: Principal component analysis results for men who have used any form of IPV by 2013–14 ($n = 11,180$)

	PC1	PC2	PC3	PC4
Primacy	0.20	0.27	-0.40	-0.29
Emotional control	0.11	-0.48	0.09	-0.48
Help	0.16	-0.50	-0.02	-0.42
Dominance	0.47	0.16	-0.17	0.00
Heterosexual	0.27	-0.18	-0.46	0.28
Women	0.44	-0.18	-0.09	0.40
Playboy	0.33	-0.11	0.26	0.28
Violence	0.26	-0.14	0.51	0.15
Pursuit	0.20	0.50	0.16	-0.23
Risk-taking	0.20	0.20	0.47	-0.11
Winning	0.42	0.16	-0.07	-0.33

Source: *Ten to Men* Wave 1

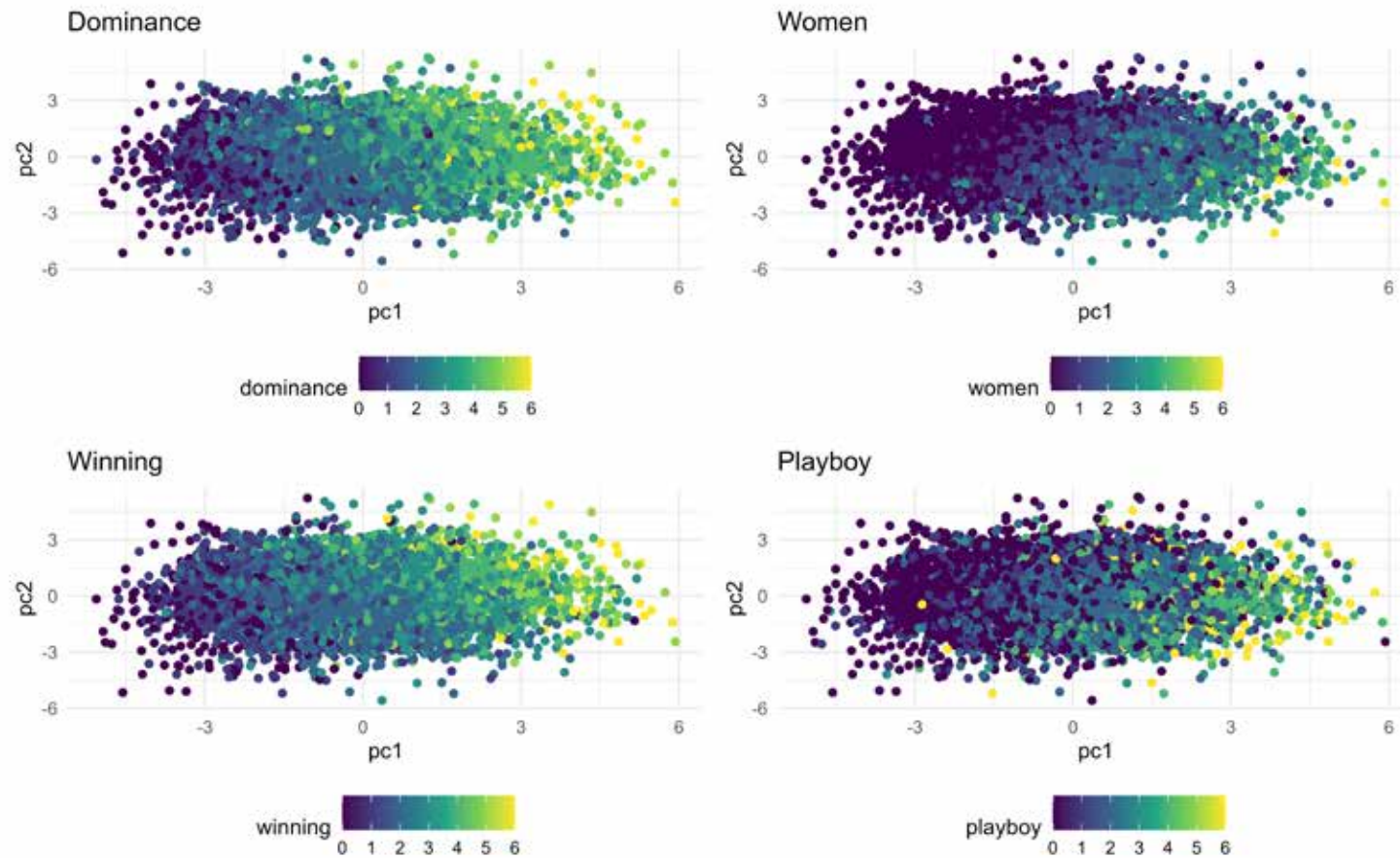
Figure S6: Scree plot showing the explained variance for each principal component derived from the CMNI measures of self-reported masculinities from the Wave 1 cross-sectional analysis data



Notes: Higher values on the vertical axis indicate components that explain more variation. The first 4 components capture most of the variation, and it helps to simplify the analysis by focusing on key patterns.

Source: *Ten to Men* Wave 1

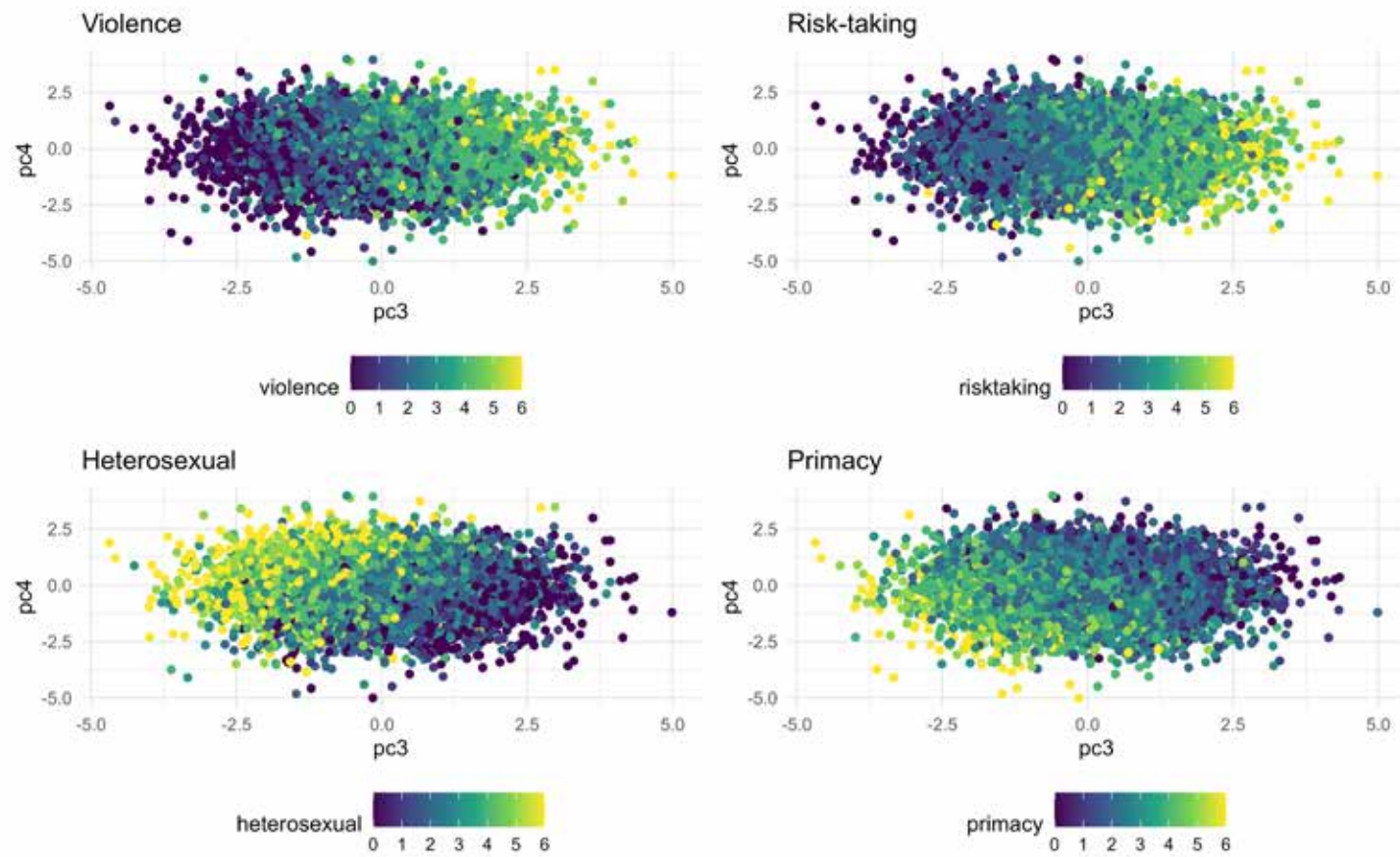
Figure S7: Graphical representation of CMNI measures of self-reported masculinities that are strongly associated with principal component 1 (PC1-W1) in the cross-sectional Wave 1 sample, plotted on the horizontal axes, and PC2-W1 plotted on the vertical axes



Notes: CMNI *dominance*, *women*, *winning* and *playboy* domains are positively associated with PC1, the higher PC1 values, the higher domain values. This component may represent an orientation that values status, control and sexual assertiveness; or a 'dominant playboy identity' component.

Source: *Ten to Men* Wave 1

Figure S8: Graphical representation of CMNI measures of self-reported masculinities that are strongly associated with principal component 3 (PC3-W1) in the cross-sectional Wave 1 sample plotted on the horizontal axes, and PC4-W1 plotted on the vertical axes



Notes: *Violence* and *risk-taking* CMNI domains are positively associated with PC3, the higher PC3 values, the higher domain values; while *primacy of work* and *heterosexual* (disdain for homosexuals) is negatively associated with PC3, the higher primacy score, the lower PC3 scores. This component reflects a pattern of high engagement in risk-taking and aggressive behaviours, with low prioritisation of work and study. PC3 can be interpreted as 'risk over responsibility' component.

Source: *Ten to Men* Wave 1

Research question 2: Cross-sectional at Wave 4

Self-reported masculinity measures

Table S16: Associations between each self-reported masculinity measure in 2022 and lifetime use of IPV by 2022

Reports of ever using IPV by W4								
Variables Wave 4	Obs.	Weighted % [95% CI]	Unadjusted RR [95% CI]	p value	Overall p value	Adjusted RR [95% CI]	p value	Overall p value
TMF score raw numeric					-	-		
TMF score	4,778	31.0 [30.7, 31.3]	0.99 [0.99, 1.00]	0.058		1.00 [1.00, 1.01]	0.429	
TMF score categorical (ref = T1) ¹					0.307	0.306		
Tertile 1	1,964	32.1% [29.2, 35.1]	-	-		-	-	
Tertile 2	1,257	35.0% [31.1, 39.0]	0.99 [0.89, 1.09]	0.774		1.04 [0.95, 1.15]	0.406	
Tertile 3	1,557	27.9% [24.8, 31.0]	0.92 [0.83, 1.01]	0.071		1.03 [0.93, 1.13]	0.605	
TMF subdomain					-	-		
Consider	4,778	5.1 [5.1, 5.2]	0.97 [0.94, 1.00]	0.049		1.03 [1.00, 1.06]	0.077	
Ideals	4,778	5.5 [5.4, 5.5]	0.97 [0.93, 1.00]	0.059		1.00 [0.97, 1.04]	0.858	
Interests	4,778	5.2 [5.1, 5.2]	0.95 [0.92, 0.98]	0.001		0.99 [0.96, 1.02]	0.373	
Attitudes	4,778	4.9 [4.9, 5.0]	0.96 [0.94, 0.99]	0.013		0.99 [0.97, 1.02]	0.729	
Behaviour	4,778	5.0 [4.9, 5.0]	0.99 [0.96, 1.02]	0.403		1.02 [0.99, 1.05]	0.260	
Appearance	4,778	5.5 [5.4, 5.5]	1.02 [0.98, 1.05]	0.288		1.04 [1.01, 1.07]	0.022	
Principal components					-	-		
pc1	4,778	-0.2 [-0.3, -0.1]	0.98 [0.96, 1.00]	0.059		1.01 [0.99, 1.03]	0.401	
pc2	4,778	-0.0 [-0.0, 0.0]	1.04 [0.99, 1.10]	0.142		1.06 [1.00, 1.11]	0.034	
pc3	4,778	-0.0 [-0.1, -0.0]	1.13 [1.06, 1.19]	<0.001		1.08 [1.02, 1.14]	0.007	
pc4	4,778	-0.0 [-0.0, 0.0]	0.91 [0.84, 0.98]	0.011		0.94 [0.88, 1.01]	0.091	
Total	4,778	31.4% [29.5, 33.2]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all confounders and masculinity domains. ¹ TMF scores are divided into 3 equal-sized groups (tertiles) based on their distribution, that is, the number of participants in each group are roughly the same. The first tertile TMF score ranged from 6 to 30, the second tertile from 31 to 35 and the third from 36 to 42. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores.

Source: *Ten to Men* Wave 4

Other covariates

Table S17: Associations between different confounders in 2022 and lifetime use of IPV by 2022 when using principal components of self-reported masculinity measures as the key predictors

Variables Wave 4	Obs.	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Age				<0.001
18–24	360	-	-	
25–34	623	2.23 [1.65, 3.00]	<0.001	
35–44	919	2.95 [2.20, 3.96]	<0.001	
45–57	2884	2.89 [2.16, 3.86]	<0.001	
Marital status				<0.001
Single/never married	624	-	-	
Previously married/partnered	3966	1.63 [1.34, 1.98]	<0.001	
Currently married/partnered	196	1.40 [1.21, 1.63]	<0.001	
Employment				0.465
Neither working nor looking for work				
Unemployed and looking for work	4283	1.02 [0.79, 1.32]	0.895	
Self-employed	122	1.19 [1.02, 1.39]	0.027	
Casual or temporary or fixed-term contract or part-time or employed/-type unknown	381	1.06 [0.88, 1.26]	0.548	
Permanent or ongoing		1.07 [0.94, 1.23]	0.317	
Remoteness (2016 Census Based)				0.628
Major cities	994	-	-	
Inner regional	371	0.96 [0.87, 1.06]	0.399	
Outer regional	243	0.99 [0.89, 1.11]	0.904	
SEIFA IRSD (2016)				<0.001
High disadvantage	990	-	-	
Middle disadvantage	2484	0.92 [0.84, 1.01]	0.066	
Low disadvantage	1312	0.81 [0.72, 0.91]	<0.001	
Sexuality				0.845
Heterosexual	4493	-	-	
Not heterosexual	293	0.88 [0.74, 1.04]	0.120	

Variables Wave 4	Obs.	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Social support				0.003
None/little of the time	1070	-	-	
Some/most of the time	2604	1.01 [0.92, 1.10]	0.888	
All of the time	1112	0.80 [0.71, 0.91]	0.001	
Experienced financial stress				<0.001
No	4121	-	-	
Yes – any financial stress	665	1.26 [1.15, 1.38]	<0.001	
Depression symptoms				<0.001
No or minimal depression	3106	-	-	
Mild	1097	1.27 [1.15, 1.39]	<0.001	
Moderate to severe	583	1.34 [1.20, 1.51]	<0.001	
Ever diagnosed with anxiety				<0.001
No	4138	-	-	
Yes	648	1.27 [1.16, 1.40]	<0.001	
Drug use				<0.001
No	3753	-	-	
Yes	1033	1.42 [1.31, 1.55]	<0.001	
Suicidal behaviours any				<0.001
No	3544	-	-	
Yes	1242	1.48 [1.36, 1.61]	<0.001	

Notes: Adjusted *RR*: adjusted for all variables in this table and pc1 to pc4. Refer to Table S9 for weighted proportions and unadjusted risk ratios for the confounders.

Source: *Ten to Men* Wave 4

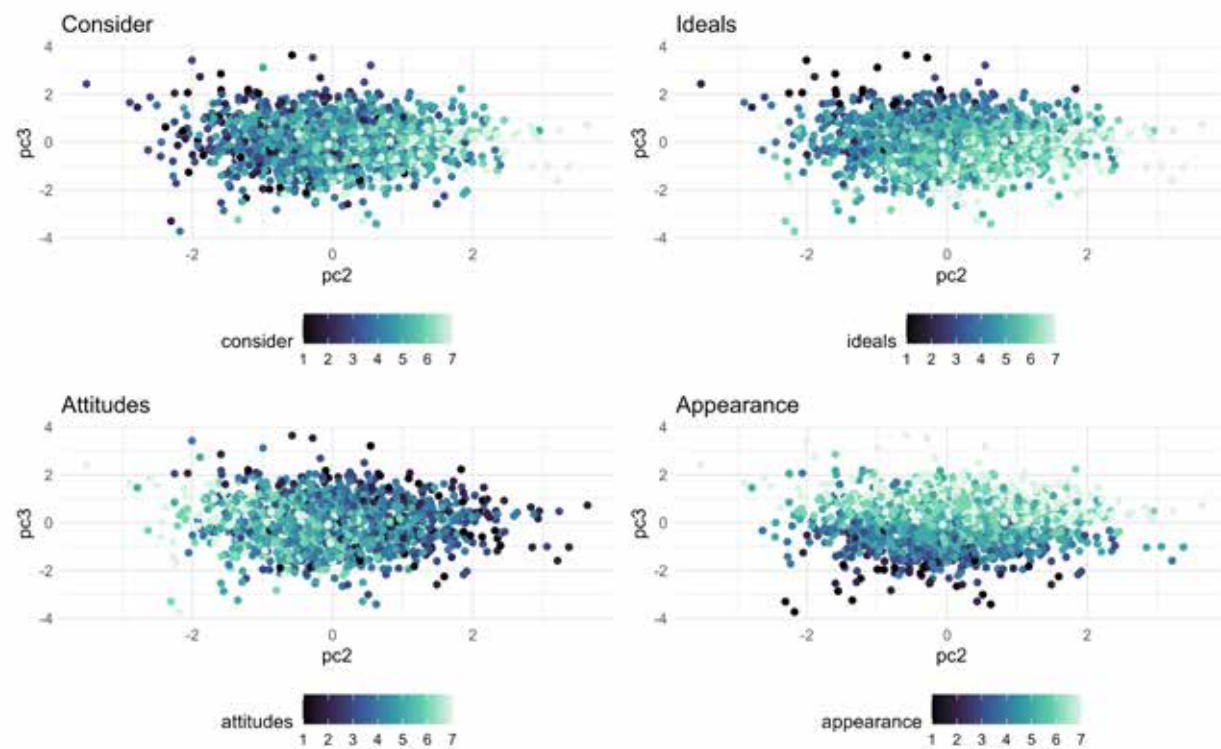
Principal component analyses

Table S18: Principal component analysis results for men who have used any form of IPV by 2022 ($n = 4,786$)

	PC1	PC2	PC3	PC4
Consider	0.42	0.49	-0.15	0.06
Ideals	0.40	0.48	-0.47	-0.09
Interests	0.41	-0.37	-0.09	0.80
Attitudes	0.42	-0.49	-0.16	-0.29
Behaviour	0.43	-0.31	0.08	-0.51
Appearance	0.38	0.25	0.84	0.05

Source: *Ten to Men* Wave 4

Figure S9: Graphical representation of TMF domains that are associated with principal components 2 and 3 (PC2-W4 and PC3-W4) in the cross-sectional Wave 4 sample



Notes: TMF consider and ideals domains are positively associated with PC2, attitudes is negatively associated with PC2. *Appearance* domain is positively associated with PC3 and *ideals* is negatively associated with PC3.

Source: *Ten to Men* Wave 4

Sensitivity analyses (for RQ1 and RQ2)

Table S19: Prevalence and new occurrence of any IPV use, as well as emotional-type and/or physical types (unweighted): comparative data from 2013–14 and 2022

Variable	Wave 1 (Yes/Total)	Wave 4 (Yes/Total)
Ever used IPV (All 3 items)	3,182/13,399 (23.75%)	2,116/5,892 (35.91%)
Ever used physical and/or emotional-type IPV	3,121/13,403 (23.29%)	2,097/5,887 (35.62%)
Ever used emotional-type IPV	2,906/13,406 (21.68%)	2,015/5,856 (34.41%)
Ever used physical IPV	999/13,411 (7.45%)	577/5,906 (9.77%)
New occurrence (any)		544/3,798 (14.32%)
New occurrence physical and/or emotional-type IPV		553/3,821 (14.47%)
New occurrence emotional-type IPV		571/3,886 (14.69%)
New occurrence physical IPV		127/4,840 (2.62%)

Source: *Ten to Men* Waves 1–4

Table S20: The association between emotional-type and physical IPV use

	Emotional IPV		
	No	Yes	Total
Prevalence of physical IPV use (Yes/Total)			
Wave 1	213 (21.4%)	784 (78.6%)	997 (100%)
Wave 4	51 (9.3%)	495 (90.7)	546 (100%)
Incidence of physical IPV use in Wave 4 (restricted to those who said 'No' in Wave 1) (Yes/Total)	Wave 4	13 (10.5%)	111 (89.5)
			124 (100%)

Source: *Ten to Men* Waves 1–4

Table S21: Types of IPV used by 2013–14 and changes by 2022

Wave 1	Neither	Emotional-type only	Wave 4 Physical only	Both	Total
Emotional-type only	0	778	0	68	846
Physical only	0	0	39	28	67
Both	0	0	0	341	347
Neither	3,268	491	8	49	3,816
Total	3,268	1,269	47	486	5,070

Source: *Ten to Men* Waves 1–4

Alcohol

Physical and/or emotional-type IPV use only as outcome (regardless of other responses)

Table S22: Longitudinal analysis: associations between indicators of alcohol use in 2013–14 and incidence of physical and/or emotional-type IPV use between 2013–14 and 2022

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
AUDIT score						0.001				0.002
Low risk (<8)	13.6	[11.8, 15.6]	2,538	-	-		2,367	-	-	
Hazardous alcohol use (8–15)	16.8	[13.8, 20.3]	857	1.42 [1.19, 1.70]	<0.001		791	1.27 [1.05, 1.53]	0.014	
Harmful alcohol use or probable dependence (≥16)	25.8	[18.3, 35.2]	205	1.95 [1.5, 2.54]	<0.001		186	1.56 [1.18, 2.07]	0.002	
Alcohol frequency 12 months						0.599				0.452
Non-drinker	11.5	[7.9, 16.4]	353	-	-		307	-	-	
Monthly or less	14.1	[10.6, 18.6]	550	0.92 [0.66, 1.29]	0.645		509	0.86 [0.61, 1.21]	0.386	
2 to 4 times a month	14.5	[11.6, 18.0]	985	0.97 [0.72, 1.32]	0.868		909	0.93 [0.68, 1.27]	0.650	
2 to 3 times a week	15.0	[11.9, 18.8]	915	1.02 [0.75, 1.38]	0.905		856	1.02 [0.75, 1.40]	0.888	
4 or more times a week	17.1	[14.1, 20.4]	997	1.12 [0.83, 1.50]	0.454		917	1.09 [0.80, 1.50]	0.583	
Number standard drinks on drinking day						<0.001				0.010
None	11.5	[7.9, 16.4]	353	-	-		307	-	-	
1 or 2	13.4	[11.1, 16.2]	1,423	0.84 [0.63, 1.13]	0.255		1,332	0.85 [0.63, 1.16]	0.304	
3 or 4	15.3	[12.4, 18.9]	1,102	0.97 [0.72, 1.31]	0.861		1,023	0.95 [0.69, 1.29]	0.726	
5 or 6	14.9	[10.9, 20.1]	431	1.11 [0.80, 1.56]	0.530		390	1.03 [0.73, 1.46]	0.849	
7 or 8	22.4	[15.1, 32.0]	202	1.61 [1.12, 2.31]	0.010		187	1.30 [0.89, 1.90]	0.174	
10 or more	25.0	[17.7, 34.0]	162	1.92 [1.34, 2.75]	<0.001		147	1.47 [1.01, 2.15]	0.046	
Alcohol – age first drink						0.051				0.833
Non-drinker	12.2	[7.5, 19.2]	201	-	-		172	-	-	
Childhood (1–12 years)	12.1	[6.0, 23.1]	84	1.16 [0.64, 2.07]	0.629		76	1.05 [0.56, 1.97]	0.889	
Teenage (13–17)	16.1	[14.1, 18.3]	2,192	1.08 [0.76, 1.54]	0.650		2,030	1.00 [0.68, 1.47]	0.990	
Adult (18+)	13.6	[11.1, 16.5]	1,304	0.85 [0.59, 1.23]	0.387		1,201	0.92 [0.62, 1.37]	0.691	
Total	14.9	[13.4, 16.5]	3,821							

Notes: Adjusted *RR*: adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: *Ten to Men* Waves 1 and 4

Table S23: Cross-sectional at Wave 1: associations between indicators of alcohol use in 2013–14 and lifetime use of physical and/or emotional-type IPV use by 2013–14

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Obs.	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
AUDIT score						<0.001				<0.001
Low risk (<8)	18.1	[17.0, 19.3]	7,920	-	-		7,111	-	-	
Hazardous alcohol use (8–15)	26.6	[24.6, 28.6]	3,305	1.46 [1.36, 1.56]	<0.001		2,991	1.32 [1.22, 1.43]	<0.001	
Harmful alcohol use or probable dependence (>=16)	44.6	[41.2, 48.1]	1,082	2.42 [2.24, 2.62]	<0.001		984	1.70 [1.55, 1.86]	<0.001	
Alcohol frequency 12 months						<0.001				<0.001
Non-drinker	16.9	[14.3, 19.9]	1,405	-	-		1,153	-	-	
Monthly or less	20.5	[18.3, 23.0]	1,999	1.20 [1.04, 1.37]	0.010		1,785	1.05 [0.91, 1.21]	0.486	
2 to 4 times a month	21.0	[19.2, 22.9]	3,671	1.16 [1.02, 1.31]	0.024		3,259	1.09 [0.95, 1.24]	0.226	
2 to 3 times a week	22.7	[20.8, 24.8]	2,873	1.23 [1.08, 1.40]	0.002		2,609	1.14 [0.99, 1.31]	0.066	
4 or more times a week	29.7	[27.7, 31.8]	3,344	1.60 [1.42, 1.80]	<0.001		2,995	1.33 [1.17, 1.52]	<0.001	
Number standard drinks on drinking day						<0.001				0.003
None	16.9	[14.3, 19.9]	1,405	-	-		1,153	-	-	
1 or 2	20.5	[19.0, 22.2]	4,170	1.13 [1.00, 1.28]	0.049		3,794	1.09 [0.96, 1.25]	0.189	
3 or 4	22.2	[20.3, 24.1]	3,447	1.29 [1.14, 1.46]	<0.001		3,116	1.17 [1.02, 1.33]	0.024	
5 or 6	27.1	[24.4, 30.0]	1,808	1.41 [1.24, 1.61]	<0.001		1,611	1.19 [1.03, 1.37]	0.017	
7 or 8	30.2	[25.9, 34.8]	916	1.60 [1.38, 1.85]	<0.001		801	1.31 [1.12, 1.53]	0.001	
10 or more	29.6	[25.7, 33.7]	893	1.72 [1.48, 1.98]	<0.001		801	1.28 [1.10, 1.50]	0.002	
Alcohol – age first drink						<0.001				<0.001
Non-drinker	11.5	[8.7, 15.0]	850	-	-		681	-	-	
Childhood (1–12 years)	37.1	[31.2, 43.5]	411	3.17 [2.56, 3.94]	<0.001		362	1.86 [1.46, 2.37]	<0.001	
Teenage (13–17)	26.1	[24.9, 27.4]	7,858	2.17 [1.81, 2.60]	<0.001		7,060	1.62 [1.32, 1.99]	<0.001	
Adult (18+)	17.8	[16.2, 19.5]	4,062	1.50 [1.24, 1.81]	<0.001		3,607	1.29 [1.05, 1.60]	0.017	
Total	22.8	[21.8, 23.7]	13,397							

Notes: Adjusted *RR*: adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: *Ten to Men* Wave 1

Table S24: Cross-sectional at Wave 4: associations between indicators of alcohol use in 2022 and lifetime use of physical and/or emotional-type IPV use by 2022

Variables Wave 4	Weighted %	95% CI	Obs.	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Obs.	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
AUDIT score						<0.001				<0.001
Low risk (<8)	27.6	[25.6, 29.6]	3,854	-	-		3,308	-	-	
Hazardous alcohol use (8–15)	38.1	[34.3, 42.0]	1,294	1.32 [1.22, 1.44]	<0.001		1,152	1.21 [1.10, 1.32]	<0.001	
Harmful alcohol use or probable dependence (>=16)	54.5	[47.0, 61.8]	374	1.85 [1.67, 2.05]	<0.001		335	1.47 [1.32, 1.64]	<0.001	
Alcohol frequency 12 months						<0.001				0.102
Non-drinker	25.6	[22.2, 29.4]	943	-	-		704	-	-	
Monthly or less	34.8	[30.3, 39.6]	899	1.05 [0.92, 1.19]	0.476		761	0.93 [0.82, 1.07]	0.324	
2 to 4 times a month	35.8	[31.8, 40.1]	1,150	1.06 [0.94, 1.19]	0.365		1,007	0.99 [0.87, 1.12]	0.867	
2 to 3 times a week	30.5	[27.1, 34.2]	1,366	0.97 [0.86, 1.09]	0.621		1,203	0.91 [0.80, 1.03]	0.144	
4 or more times a week	42.8	[38.8, 46.8]	1,307	1.22 [1.09, 1.36]	<0.001		1,125	1.05 [0.93, 1.19]	0.449	
Number standard drinks on drinking day						<0.001				<0.001
None	27.9	[23.7, 32.6]	669	-	-		599	-	-	
1 or 2	29.9	[27.1, 32.9]	2,197	0.87 [0.77, 0.98]	0.023		1,649	0.86 [0.75, 0.98]	0.021	
3 or 4	35.5	[32.0, 39.2]	1,539	1.01 [0.90, 1.15]	0.811		1,292	0.96 [0.83, 1.09]	0.512	
5 or 6	41.3	[35.9, 46.9]	729	1.20 [1.06, 1.37]	0.006		517	1.09 [0.94, 1.27]	0.237	
7 or 8	38.9	[31.7, 46.6]	328	1.29 [1.10, 1.51]	0.001		267	1.13 [0.96, 1.34]	0.152	
10 or more	46.7	[36.6, 57.0]	206	1.38 [1.16, 1.64]	<0.001		201	1.19 [0.97, 1.45]	0.097	
Alcohol – age first drink						<0.001				0.057
Non-drinker	18.2	[13.6, 23.8]	369	-	-		293	-	-	
Childhood (1–12 years)	35.9	[26.7, 46.1]	195	1.84 [1.44, 2.35]	<0.001		155	1.17 [0.88, 1.56]	0.285	
Teenage (13–17)	41.3	[38.8, 43.9]	3,170	1.77 [1.47, 2.14]	<0.001		2,692	1.14 [0.91, 1.42]	0.248	
Adult (18+)	29.8	[26.6, 33.1]	1,680	1.35 [1.11, 1.65]	0.003		1,405	1.02 [0.81, 1.28]	0.895	
Total	34.0	[32.1, 35.9]	5,693							

Notes: Adjusted *RR*: adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: *Ten to Men* Wave 4

*Physical abuse only as outcome (regardless of other responses)***Table S25:** Longitudinal analysis: associations between indicators of alcohol use in 2013–14 and incidence of physical IPV use between 2013–14 and 2022

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
AUDIT score						<0.001				0.016
Low risk (<8)	2.1	[1.6, 2.8]	3,090	-	-		2,896	-	-	
Hazardous alcohol use (8–15)	3.9	[2.6, 5.7]	1,149	1.91 [1.30, 2.83]	0.001		1,070	1.55 [1.01, 2.39]	0.047	
Harmful alcohol use or probable dependence (≥16)	3.9	[2.3, 6.6]	320	3.47 [2.09, 5.75]	<0.001		301	2.19 [1.23, 3.88]	0.007	
Alcohol frequency 12 months						0.627				0.451
Non-drinker	1.6	[0.7, 3.6]	412	-	-		366	-	-	
Monthly or less	3.3	[2.0, 5.5]	680	1.3 [0.59, 2.84]	0.513		633	0.97 [0.44, 2.15]	0.940	
2 to 4 times a month	2.1	[1.3, 3.2]	1,254	1.11 [0.53, 2.32]	0.786		1,166	0.79 [0.37, 1.70]	0.547	
2 to 3 times a week	1.7	[0.9, 3.3]	1,160	0.95 [0.45, 2.04]	0.904		1,091	0.78 [0.35, 1.73]	0.540	
4 or more times a week	4.3	[3.0, 6.1]	1,309	1.74 [0.86, 3.51]	0.122		1,208	1.19 [0.55, 2.55]	0.663	
Number standard drinks on drinking day						<0.001				0.036
None	1.6	[0.7, 3.6]	412	-	-		366	-	-	
1 or 2	2.3	[1.6, 3.4]	1,805	0.93 [0.45, 1.91]	0.836		1,690	0.75 [0.36, 1.57]	0.442	
3 or 4	2.2	[1.4, 3.5]	1,387	1.15 [0.56, 2.38]	0.701		1,299	0.86 [0.40, 1.85]	0.705	
5 or 6	5.2	[3.2, 8.4]	561	2.21 [1.05, 4.67]	0.038		513	1.72 [0.80, 3.69]	0.166	
7 or 8	5.8	[3.4, 9.7]	267	2.75 [1.21, 6.23]	0.015		248	1.12 [0.45, 2.78]	0.805	
10 or more	2.2	[1.1, 4.6]	222	2.05 [0.81, 5.21]	0.131		206	1.41 [0.53, 3.74]	0.489	
Alcohol – age first drink						0.476				0.641
Non-drinker	2.3	[0.9, 5.7]	229	-	-		201	-	-	
Childhood (1–12 years)	0.3	[0.1, 1.5]	115	0.75 [0.16, 3.66]	0.725		105	0.35 [0.07, 1.87]	0.219	
Teenage (13–17)	2.9	[2.2, 3.8]	2,874	1.22 [0.54, 2.75]	0.637		2,673	0.68 [0.29, 1.59]	0.377	
Adult (18+)	2.7	[1.7, 4.1]	1,569	0.93 [0.40, 2.18]	0.871		1,459	0.68 [0.29, 1.59]	0.374	
Total	3.5	[2.8, 4.3]	3,741							

Notes: Adjusted *RR*: adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: *Ten to Men* Waves 1 and 4

Table S26: Cross-sectional at Wave 1: associations between indicators of alcohol use in 2013-14 and lifetime use of physical IPV by 2013-14

Variables Wave 1	Weighted %	95% CI	Obs.	Unadjusted RR [95% CI]	p value	Overall p value	Obs.	Adjusted RR [95% CI]	p value	Overall p value
AUDIT score						<0.001				<0.001
Low risk (<8)	5.8	[5.1, 6.7]	7,924	-	-		7,112	-	-	
Hazardous alcohol use (8-15)	8.2	[6.9, 9.8]	3,307	1.52 [1.32, 1.76]	<0.001		2,994	1.49 [1.27, 1.75]	<0.001	
Harmful alcohol use or probable dependence (>=16)	16.3	[13.5, 19.5]	1,082	3.22 [2.75, 3.77]	<0.001		984	2.38 [1.98, 2.86]	<0.001	
Alcohol frequency 12 months						<0.001				<0.001
Non-drinker	7.6	[5.7, 9.9]	1,405	-	-		1,153	-	-	
Monthly or less	7.1	[5.6, 9.0]	2,000	1.04 [0.82, 1.33]	0.732		1,785	0.98 [0.75, 1.27]	0.867	
2 to 4 times a month	5.9	[4.9, 7.0]	3,671	0.80 [0.64, 1.01]	0.06		3,259	0.84 [0.65, 1.08]	0.178	
2 to 3 times a week	6.9	[5.7, 8.3]	2,876	0.95 [0.75, 1.20]	0.653		2,611	1.03 [0.80, 1.33]	0.825	
4 or more times a week	10.4	[9.1, 11.8]	3,348	1.48 [1.19, 1.83]	<0.001		2,997	1.31 [1.03, 1.67]	0.029	
Number standard drinks on drinking day						<0.001				<0.001
None	7.6	[5.7, 9.9]	1,405	-	-		1,153	-	-	
1 or 2	5.9	[4.9, 7.0]	4,173	0.81 [0.65, 1.02]	0.073		3,795	0.87 [0.68, 1.11]	0.266	
3 or 4	6.6	[5.7, 7.8]	3,451	0.95 [0.75, 1.19]	0.636		3,119	0.97 [0.75, 1.24]	0.787	
5 or 6	8.8	[7.1, 10.8]	1,807	1.30 [1.02, 1.65]	0.033		1,611	1.17 [0.90, 1.53]	0.251	
7 or 8	9.9	[7.3, 13.4]	916	1.47 [1.13, 1.93]	0.005		801	1.40 [1.04, 1.88]	0.026	
10 or more	11.5	[9.0, 14.6]	892	1.77 [1.37, 2.29]	<0.001		801	1.49 [1.12, 2.00]	0.007	
Alcohol – age first drink						<0.001				0.001
Non-drinker	5.0	[3.1, 8.1]	850	-	-		681	-	-	
Childhood (1-12 years)	15.4	[11.2, 20.8]	410	3.57 [2.45, 5.20]	<0.001		361	1.86 [1.22, 2.86]	0.004	
Teenage (13-17)	7.8	[7.0, 8.7]	7,860	1.76 [1.28, 2.41]	<0.001		7,061	1.39 [0.98, 1.98]	0.066	
Adult (18+)	6.5	[5.5, 7.7]	4,069	1.30 [0.94, 1.81]	0.116		3,611	1.14 [0.79, 1.64]	0.493	
Total	7.5	[6.8, 8.2]	13,300							

Notes: Adjusted RR: adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: Ten to Men Wave 1

Table S27: Cross-sectional at Wave 4: associations between indicators of alcohol use in 2022 and lifetime use of physical IPV by 2022

Variables Wave 4	Weighted %	95% CI	Obs.	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Obs.	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
AUDIT score						<0.001				<0.001
Low risk (<8)	7.6	[6.5, 8.9]	3,922	-	-		3,376	-	-	
Hazardous alcohol use (8–15)	8.7	[6.9, 10.9]	1,343	1.26 [1.04, 1.53]	0.019		1,191	1.06 [0.86, 1.31]	0.589	
Harmful alcohol use or probable dependence (≥16)	19.0	[13.7, 25.7]	377	2.58 [2.06, 3.23]	<0.001		337	1.85 [1.42, 2.40]	<0.001	
Alcohol frequency 12 months						0.007				0.445
Non-drinker	8.4	[6.4, 10.9]	941	-	-		711	-	-	
Monthly or less	10.1	[7.6, 13.3]	911	1.01 [0.77, 1.31]	0.951		783	0.91 [0.67, 1.25]	0.561	
2 to 4 times a month	8.4	[6.4, 11.0]	1,155	0.82 [0.63, 1.07]	0.139		1,029	0.86 [0.63, 1.17]	0.328	
2 to 3 times a week	8.1	[6.1, 10.6]	1,381	0.78 [0.6, 1]	0.051		1,234	0.75 [0.55, 1.03]	0.074	
4 or more times a week	12.5	[10.0, 15.4]	1,304	1.14 [0.9, 1.45]	0.273		1,152	0.92 [0.7, 1.23]	0.586	
Number standard drinks on drinking day						<0.001				0.001
None	9.9	[7.3, 13.3]	663	-	-		498	-	-	
1 or 2	7.2	[5.7, 9.0]	2,217	0.67 [0.52, 0.86]	0.002		1,953	0.67 [0.49, 0.92]	0.012	
3 or 4	10.3	[8.3, 12.8]	1,556	0.84 [0.64, 1.09]	0.186		1,362	0.87 [0.63, 1.20]	0.396	
5 or 6	10.6	[8.2, 13.7]	729	1.20 [0.91, 1.60]	0.197		649	1.14 [0.81, 1.60]	0.452	
7 or 8	11.7	[7.9, 17.0]	323	1.34 [0.96, 1.87]	0.089		283	1.23 [0.83, 1.83]	0.307	
10 or more	15.5	[9.3, 24.9]	206	1.41 [0.97, 2.07]	0.074		168	1.16 [0.72, 1.87]	0.530	
Alcohol – age first drink						<0.001				0.272
Non-drinker	3.9	[2.0, 7.3]	369	-	-		283	-	-	
Childhood (1–12 years)	9.1	[5.2, 15.5]	195	2.94 [1.70, 5.09]	<0.001		159	1.78 [0.88, 3.61]	0.107	
Teenage (13–17)	11.6	[10.1, 13.3]	3,169	2.15 [1.37, 3.37]	0.001		2,779	1.23 [0.67, 2.25]	0.511	
Adult (18+)	8.3	[6.6, 10.4]	1,691	1.77 [1.11, 2.81]	0.016		1,468	1.25 [0.68, 2.32]	0.474	
Total	9.4	[8.4, 10.6]	5,709							

Notes: Adjusted *RR*: adjusted for age, marital status, employment type, financial stress, remoteness, SEIFA IRSD, sexuality, social support, suicidal behaviours, drug use 12 months, depression symptom category, ever diagnosed with anxiety.

Source: *Ten to Men* Wave 4

Self-reported masculinity measures

Longitudinal analysis: Physical and/or emotional-type abuse only as outcome (regardless of other responses)

Table S28: Longitudinal analysis: associations between self-reported masculinity measures in 2013-14 and incidence of physical and/or emotional-type IPV use between 2013-14 and 2022

Variables Wave 1	Obs.	Weighted mean or proportions of variable	Unadjusted RR [95% CI]	p value	Overall p value	Adjusted RR [95% CI]	p value	Overall p value
CMNI score raw numeric					-			-
CMNI score	3,349	26.6 [26.4, 26.9]	1.02 [1.01, 1.04]	0.004		1.01 [0.99, 1.03]	0.188	
CMNI score categorical (ref = T1)¹					0.060			0.517
Tertile 1	1,363	13.3% [11.0, 15.9]	-	-		-	-	
Tertile 2	1,275	14.7% [12.2, 17.6]	0.99 [0.82, 1.21]	0.941		0.94 [0.78, 1.15]	0.568	
Tertile 3	711	17.0% [13.4, 21.2]	1.29 [1.04, 1.59]	0.020		1.09 [0.87, 1.35]	0.457	
Individual masculinity domain								-
Primacy	3,349	2.5 [2.4, 2.5]	1.00 [0.93, 1.08]	0.984		0.99 [0.92, 1.07]	0.830	
Dominance	3,349	2.4 [2.4, 2.5]	1.03 [0.95, 1.11]	0.492		1.02 [0.94, 1.10]	0.614	
Heterosexual	3,349	2.7 [2.6, 2.7]	0.96 [0.91, 1.01]	0.137		0.97 [0.92, 1.03]	0.284	
Women	3,349	1.0 [1.0, 1.1]	0.98 [0.89, 1.07]	0.654		0.98 [0.89, 1.07]	0.651	
Emotional control	3,349	3.2 [3.1, 3.2]	0.94 [0.88, 1.00]	0.063		0.92 [0.86, 0.98]	0.011	
Playboy	3,349	1.5 [1.5, 1.6]	1.12 [1.05, 1.19]	<0.001		1.08 [1.01, 1.15]	0.018	
Violence	3,349	2.3 [2.2, 2.4]	1.14 [1.07, 1.20]	<0.001		1.09 [1.02, 1.15]	0.005	
Pursuit	3,349	3.4 [3.4, 3.5]	1.09 [1.00, 1.19]	0.062		1.07 [0.98, 1.17]	0.131	
Help	3,349	3.2 [3.2, 3.2]	1.07 [0.98, 1.16]	0.116		0.98 [0.91, 1.07]	0.704	
Risk-taking	3,349	2.7 [2.7, 2.8]	1.13 [1.05, 1.21]	0.001		1.10 [1.02, 1.18]	0.010	
Winning	3,349	2.4 [2.4, 2.5]	1.06 [0.97, 1.15]	0.184		1.04 [0.96, 1.12]	0.391	
Principal components²					-			-
pc1	3,349	0.1 [0.0, 0.1]	1.09 [1.03, 1.15]	0.005		1.05 [0.99, 1.11]	0.074	
pc2	3,349	0.1 [0.0, 0.2]	1.06 [0.98, 1.14]	0.136		1.09 [1.01, 1.17]	0.019	
pc3	3,349	0.0 [-0.0, 0.1]	1.19 [1.10, 1.29]	<0.001		1.13 [1.05, 1.22]	0.001	
pc4	3,349	-0.0 [-0.1, 0.0]	0.94 [0.87, 1.03]	0.176		1.00 [0.92, 1.08]	0.929	
Total	3,349	14.6% [13.1, 16.3]						

Notes: Adjusted RR: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted RR are calculated on men with valid values across all masculinity domains. ¹ CMNI scores are divided into 3 equal-sized groups (tertiles) based on their distribution; that is, the number of participants in each group are roughly the same. First tertile has CMNI score ranging from 5 to 25, second tertile from 26 to 30 and the third from 31 to 48. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores. ² Principal component scores were standardised and centred around zero. Accordingly, the mean score for each component is expected to be zero; however, minor numerical precision and rounding errors mean values may appear as very small positive or negative numbers (e.g. -0.0, 0.0 or 0.1 when rounded to one decimal place).

Source: Ten to Men Waves 1 and 4

*Physical abuse only as outcome (regardless of other responses)***Table S29:** Longitudinal analysis: associations between self-reported masculinity measures in 2013–14 and incidence of physical IPV use between 2013–14 and 2022

Variables Wave 1		Weighted mean or proportions of variable	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
CMNI score raw numeric					-			-
CMNI score	4,278	26.8 [26.6, 27.0]	1.02 [0.98, 1.06]	0.376		1.01 [0.97, 1.04]	0.784	
CMNI score categorical (ref = T1)¹					0.233			0.377
Tertile 1	1,685	2.4% [1.6, 3.6]	-	-		-	-	
Tertile 2	1,631	2.3% [1.6, 3.4]	0.85 [0.54, 1.34]	0.492		0.80 [0.51, 1.25]	0.327	
Tertile 3	962	2.6% [1.7, 4.2]	1.31 [0.82, 2.10]	0.252		1.13 [0.72, 1.78]	0.593	
Individual masculinity domain					-			-
Primacy	4,278	2.4 [2.4, 2.5]	1.09 [0.91, 1.31]	0.350		1.11 [0.93, 1.34]	0.255	
Dominance	4,278	2.5 [2.4, 2.5]	1.16 [0.97, 1.39]	0.099		1.13 [0.95, 1.35]	0.168	
Heterosexual	4,278	2.6 [2.6, 2.7]	1.01 [0.88, 1.15]	0.936		1.08 [0.94, 1.24]	0.256	
Women	4,278	1.1 [1.1, 1.1]	1.05 [0.85, 1.29]	0.660		1.03 [0.84, 1.27]	0.766	
Emotional control	4,278	3.2 [3.1, 3.2]	0.91 [0.78, 1.06]	0.208		0.88 [0.75, 1.04]	0.126	
Playboy	4,278	1.6 [1.5, 1.6]	1.12 [0.98, 1.28]	0.110		1.02 [0.88, 1.17]	0.788	
Violence	4,278	2.4 [2.4, 2.5]	1.05 [0.91, 1.20]	0.512		0.99 [0.87, 1.13]	0.915	
Pursuit	4,278	3.4 [3.4, 3.4]	0.99 [0.78, 1.25]	0.923		0.97 [0.76, 1.24]	0.802	
Help	4,278	2.5 [2.5, 2.6]	1.06 [0.88, 1.28]	0.526		0.99 [0.81, 1.21]	0.931	
Risk-taking	4,278	2.7 [2.7, 2.8]	1.00 [0.84, 1.18]	0.963		0.95 [0.80, 1.12]	0.519	
Winning	4,278	2.4 [2.4, 2.4]	1.01 [0.85, 1.21]	0.906		0.97 [0.81, 1.16]	0.728	
Principal components²					-			-
pc1	4,278	0.0 [-0.0, 0.1]	1.10 [0.94, 1.28]	0.237		1.04 [0.91, 1.20]	0.566	
pc2	4,278	0.1 [0.0, 0.1]	1.03 [0.86, 1.22]	0.764		1.03 [0.85, 1.25]	0.733	
pc3	4,278	0.0 [-0.0, 0.1]	1.00 [0.83, 1.20]	0.993		0.87 [0.72, 1.06]	0.167	
pc4	4,278	-0.0 [-0.1, 0.0]	1.03 [0.86, 1.23]	0.753		1.12 [0.92, 1.36]	0.253	
Total	4,278	2.4% [1.9, 3.1]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all masculinity domains. ¹ CMNI scores are divided into 3 equal-sized groups (tertiles) based on their distribution; that is, the number of participants in each group are roughly the same. First tertile has CMNI score ranging from 5 to 25, second tertile from 26 to 30 and the third from 31 to 48. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores. ² Principal component scores were standardised and centred around zero. Accordingly, the mean score for each component is expected to be zero; however, minor numerical precision and rounding errors mean values may appear as very small positive or negative numbers (e.g. -0.0, 0.0 or 0.1 when rounded to one decimal place).

Source: *Ten to Men* Waves 1 and 4

Principal component analysis

The principal component analysis summaries for using physical and/or emotional-type IPV use as outcomes are the same as in the main analyses as the samples used are the same.

Table S30: Principal component analysis results for use of physical IPV between 2013–14 and 2022 in the longitudinal analysis ($n = 4,278$).

	PC1	PC2	PC3	PC4
Primacy	0.24	0.18	-0.45	-0.27
Emotional control	0.08	-0.51	0.11	-0.38
Help	0.14	-0.49	0.05	-0.46
Dominance	0.47	0.12	-0.19	-0.01
Heterosexual	0.27	-0.27	-0.36	0.44
Women	0.41	-0.24	-0.02	0.47
Playboy	0.33	-0.02	0.36	0.07
Violence	0.25	-0.07	0.56	0.09
Pursuit	0.25	0.48	0.04	-0.20
Risk-taking	0.20	0.30	0.39	-0.02
Winning	0.42	0.07	-0.14	-0.32

Source: *Ten to Men* Wave 1

Cross-sectional at Wave 1

*Physical and/or emotional-type abuse only as outcome (regardless of other responses)***Table S31:** Cross-sectional at Wave 1: associations between self-reported masculinity measures in 2013–14 and lifetime use of physical and/or emotional-type IPV by 2013–14

Variables Wave 1	Obs.	Weighted mean or proportions of variable	Unadjusted RR [95% CI]	p value	Overall p value	Adjusted RR [95% CI]	p value	Overall p value
CMNI score raw numeric					-			
CMNI score	11,180	27.5 [27.3, 27.7]	1.03 [1.02, 1.03]	<0.001		1.02 [1.01, 1.03]	<0.001	
CMNI score categorical (ref = T1)					<0.001			<0.001
Tertile 1	3,902	19.9% [18.3, 21.6]	-	-		-	-	
Tertile 2	4,218	22.5% [21.0, 24.2]	1.17 [1.09, 1.27]	<0.001		1.13 [1.04, 1.22]	0.004	
Tertile 3	3,060	26.3% [24.1, 28.6]	1.38 [1.28, 1.50]	<0.001		1.24 [1.14, 1.34]	<0.001	
Individual masculinity domain					-			-
Primacy	11,180	2.6 [2.6, 2.6]	0.91 [0.88, 0.93]	<0.001		0.95 [0.92, 0.98]	<0.001	
Dominance	11,180	2.5 [2.5, 2.5]	1.05 [1.02, 1.08]	0.002		1.07 [1.04, 1.10]	<0.001	
Heterosexual	11,180	2.8 [2.8, 2.9]	0.99 [0.97, 1.01]	0.284		0.99 [0.97, 1.01]	0.284	
Women	11,180	1.3 [1.2, 1.3]	1.12 [1.09, 1.15]	<0.001		1.09 [1.06, 1.13]	<0.001	
Emotional control	11,180	3.1 [3.1, 3.2]	1.00 [0.98, 1.03]	0.720		0.97 [0.95, 1.00]	0.720	
Playboy	11,180	1.7 [1.6, 1.7]	1.10 [1.07, 1.12]	<0.001		1.06 [1.03, 1.08]	<0.001	
Violence	11,180	2.4 [2.4, 2.5]	1.18 [1.15, 1.21]	<0.001		1.13 [1.10, 1.16]	<0.001	
Pursuit	11,180	3.4 [3.3, 3.4]	1.02 [0.99, 1.05]	0.174		1.06 [1.02, 1.09]	0.174	
Help	11,180	2.6 [2.5, 2.6]	1.13 [1.10, 1.16]	<0.001		1.02 [0.99, 1.05]	<0.001	
Risk-taking	11,180	2.8 [2.7, 2.8]	1.10 [1.07, 1.12]	<0.001		1.07 [1.04, 1.10]	<0.001	
Winning	11,180	2.5 [2.4, 2.5]	1.01 [0.98, 1.04]	0.451		1.02 [0.99, 1.05]	0.451	
Principal components²					-			-
pc1	11,180	0.1 [0.0, 0.1]	1.11 [1.09, 1.13]	<0.001		1.08 [1.06, 1.11]	<0.001	
pc2	11,180	0.1 [0.0, 0.1]	0.91 [0.89, 0.93]	<0.001		1.00 [0.97, 1.02]	0.763	
pc3	11,180	0.0 [0.0, 0.1]	1.19 [1.16, 1.34]	<0.001		1.14 [1.11, 1.17]	<0.001	
pc4	11,180	-0.0 [-0.0, 0.0]	1.06 [1.03, 1.09]	0.001		1.07 [1.04, 1.11]	<0.001	
Total	11,180	22.7% [21.7, 23.7]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all confounders and masculinity domains. ¹ CMNI scores are divided into 3 equal-sized groups (tertiles) based on their distribution; that is, the number of participants in each group are roughly the same. First tertile has CMNI score ranging from 5 to 25, second tertile from 26 to 30 and the third from 31 to 48. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores. ² Principal component scores were standardised and centred around zero. Accordingly, the mean score for each component is expected to be zero; however, minor numerical precision and rounding errors mean values may appear as very small positive or negative numbers (e.g. -0.0, 0.0 or 0.1 when rounded to one decimal place).

Source: *Ten to Men Waves 1*

*Physical abuse only as outcome (regardless of other responses)***Table S32:** Cross-sectional at Wave 1: associations between self-reported masculinity measures in 2013–14 and lifetime use of physical IPV by 2013–14

Variables Wave 1	Obs.	Weighted mean or proportions of variable	Unadjusted RR [95% CI]	p value	Overall p value	Adjusted RR [95% CI]	p value	Overall p value
CMNI score raw numeric					-			
CMNI score	11,190	27.6 [27.5, 27.8]	1.05 [1.04, 1.06]	<0.001		1.05 [1.04, 1.06]	<0.001	
CMNI score categorical (ref = T1)¹					<0.001			<0.001
Tertile 1	3,903	6.1% [5.1, 7.2]	-	-		-	-	
Tertile 2	4,223	6.5% [5.6, 7.6]	1.31 [1.11, 1.56]	0.002		1.34 [1.14, 1.59]	0.001	
Tertile 3	3,064	9.2% [7.8, 10.8]	1.77 [1.49, 2.09]	<0.001		1.76 [1.49, 2.09]	<0.001	
Individual masculinity domain								
Primacy	11,190	2.6 [2.6, 2.6]	0.98 [0.93, 1.03]	0.421		1.04 [0.98, 1.09]	0.206	
Dominance	11,190	2.5 [2.5, 2.5]	1.13 [1.07, 1.21]	<0.001		1.17 [1.10, 1.25]	<0.001	
Heterosexual	11,190	2.8 [2.8, 2.9]	1.04 [1.00, 1.09]	0.060		1.05 [1.01, 1.09]	0.023	
Women	11,190	1.3 [1.2, 1.3]	1.29 [1.22, 1.38]	<0.001		1.27 [1.19, 1.34]	<0.001	
Emotional control	11,190	3.1 [3.1, 3.2]	1.00 [0.95, 1.06]	0.870		0.99 [0.94, 1.04]	0.734	
Playboy	11,190	1.7 [1.6, 1.7]	1.18 [1.13, 1.24]	<0.001		1.13 [1.08, 1.19]	<0.001	
Violence	11,190	2.4 [2.4, 2.5]	1.18 [1.13, 1.23]	<0.001		1.15 [1.10, 1.20]	<0.001	
Pursuit	11,190	3.4 [3.3, 3.4]	0.98 [0.92, 1.05]	0.607		1.08 [1.01, 1.15]	0.027	
Help	11,190	2.6 [2.5, 2.6]	1.16 [1.09, 1.23]	<0.001		1.03 [0.97, 1.09]	0.359	
Risk-taking	11,190	2.8 [2.7, 2.8]	1.09 [1.03, 1.15]	0.002		1.10 [1.04, 1.16]	0.001	
Winning	11,190	2.5 [2.4, 2.5]	1.02 [0.96, 1.09]	0.475		1.06 [0.99, 1.12]	0.076	
Principal components²								
pc1	11,190	0.1 [0.0, 0.1]	1.21 [1.15, 1.26]	<0.001		1.21 [1.16, 1.27]	<0.001	
pc2	11,190	0.1 [0.0, 0.1]	0.89 [0.84, 0.94]	<0.001		0.99 [0.93, 1.04]	0.650	
pc3	11,190	0.0 [0.0, 0.1]	1.13 [1.07, 1.20]	<0.001		1.09 [1.03, 1.15]	0.003	
pc4	11,190	-0.0 [-0.0, 0.0]	1.16 [1.08, 1.24]	<0.001		1.13 [1.06, 1.20]	<0.001	
Total	11,190	7.1% [6.5, 7.9]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all confounders and masculinity domains. ¹ CMNI scores are divided into 3 equal-sized groups (tertiles) based on their distribution; that is, the number of participants in each group are roughly the same. First tertile has CMNI score ranging from 5 to 25, second tertile from 26 to 30 and the third from 31 to 48. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores. ² Principal component scores were standardised and centred around zero. Accordingly, the mean score for each component is expected to be zero; however, minor numerical precision and rounding errors mean values may appear as very small positive or negative numbers (e.g. -0.0, 0.0 or 0.1 when rounded to one decimal place).

Source: *Ten to Men* Wave 1

*Principal component analysis***Table S33:** Principal component analysis results for use of physical IPV by 2013–14 in the cross-sectional analysis at Wave 1 ($n = 11,190$).

	PC1	PC2	PC3	PC4
Primacy	0.20	0.27	-0.40	-0.29
Emotional control	0.11	-0.48	0.09	-0.48
Help	0.16	-0.50	-0.03	-0.42
Dominance	0.47	0.16	-0.17	0.00
Heterosexual	0.27	-0.18	-0.45	0.28
Women	0.44	-0.18	-0.09	0.39
Playboy	0.33	-0.11	0.26	0.28
Violence	0.26	-0.14	0.51	0.15
Pursuit	0.20	0.50	0.17	-0.23
Risk-taking	0.20	0.20	0.48	-0.11
Winning	0.42	0.16	-0.07	-0.33

Source: *Ten to Men* Wave 1

Cross-sectional at Wave 4

*Physical and/or emotional-type abuse only as outcome (regardless of other responses)***Table S34:** Cross-sectional at Wave 4: associations between self-reported masculinity measures in 2022 and lifetime use of physical and/or emotional-type IPV by 2022

Variables Wave 4	Obs.	Weighted mean or proportions of variable	Unadjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
TMF score raw numeric					-			-
TMF score	4,778	31.2 [30.9, 31.5]	0.99 [0.99, 1.00]	0.041		1.00 [1.00, 1.01]	0.429	
TMF score categorical (ref = T1)¹					0.307			0.807
Tertile 1	1,964	31.9% [29.1, 34.7]	-	-		-	-	-
Tertile 2	1,257	34.9% [31.3, 38.7]	0.96 [0.87, 1.06]	0.407		1.04 [0.95, 1.14]	0.406	
Tertile 3	1,557	27.6% [24.8, 30.6]	0.87 [0.79, 0.96]	0.004		1.03 [0.94, 1.14]	0.605	
TMF subdomain					-			-
Consider	4,778	5.1 [5.1, 5.2]	0.97 [0.94, 1.00]	0.029		1.03 [1.00, 1.06]	0.077	
Ideals	4,778	5.5 [5.4, 5.5]	0.96 [0.93, 1.00]	0.026		1.00 [0.97, 1.04]	0.858	
Interests	4,778	5.2 [5.1, 5.2]	0.95 [0.93, 0.98]	0.001		0.99 [0.96, 1.02]	0.373	
Attitudes	4,778	4.9 [4.9, 5.0]	0.97 [0.94, 0.99]	0.013		0.99 [0.97, 1.02]	0.729	
Behaviour	4,778	5.0 [4.9, 5.0]	0.99 [0.96, 1.01]	0.325		1.02 [0.99, 1.05]	0.260	
Appearance	4,778	5.5 [5.4, 5.5]	1.02 [0.99, 1.05]	0.262		1.04 [1.01, 1.07]	0.022	
Principal components²	4,778				-			-
pc1	4,778	-0.2 [-0.3, -0.1]	0.98 [0.97, 1.00]	0.041		1.01 [0.99, 1.03]	0.401	
pc2	4,778	-0.0 [-0.0, 0.0]	0.96 [0.91, 1.01]	0.115		1.06 [1.00, 1.11]	0.034	
pc3	4,778	-0.0 [-0.1, -0.0]	1.13 [1.07, 1.19]	<0.001		1.08 [1.02, 1.14]	0.007	
pc4	4,778	-0.0 [-0.0, 0.0]	0.91 [0.84, 0.98]	0.009		0.94 [0.88, 1.01]	0.091	
Total	4,778	31.6% [29.7, 33.6]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all confounders and masculinity domains. ¹ TMF scores are divided into 3 equal-sized groups (tertiles) based on their distribution, that is, the number of participants in each group are roughly the same. The first tertile TMF score ranged from 6 to 30, the second tertile from 31 to 35 and the third from 36 to 42. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores. ² Principal component scores were standardised and centred around zero. Accordingly, the mean score for each component is expected to be zero; however, minor numerical precision and rounding errors mean values may appear as very small positive or negative numbers (e.g. -0.0, 0.0 or 0.1 when rounded to one decimal place).

Source: *Ten to Men* Wave 4

*Physical abuse only as outcome (regardless of other responses)***Table S35:** Cross-sectional at Wave 4: associations between self-reported masculinity measures in 2022 and prevalence of physical IPV use in 2022

Variables Wave 4	Obs.	Weighted % [95% CI]	Unadjusted RR [95% CI]	p value	Overall p value	Adjusted RR [95% CI]	p value	Overall p value
TMF score raw numeric					-			-
TMF score	4,888	31.2 [30.9, 31.5]	1.00 [0.99, 1.01]	0.812		1.00 [0.99, 1.02]	0.779	
TMF score categorical (ref = T1)¹					0.778			0.470
Tertile 1	2,007	8.0% [6.4, 9.9]	-	-		-	-	
Tertile 2	1,301	8.6% [6.7, 10.9]	1.04 [0.84, 1.28]	0.720		1.16 [0.93, 1.45]	0.198	
Tertile 3	1,580	8.7% [6.9, 11.0]	1.06 [0.88, 1.29]	0.524		1.11 [0.88, 1.40]	0.393	
TMF subdomain					-			-
Consider	4,888	5.1 [5.1, 5.2]	0.96 [0.90, 1.03]	0.259		0.99 [0.92, 1.07]	0.814	
Ideals	4,888	5.5 [5.4, 5.5]	1.00 [0.93, 1.08]	0.963		1.02 [0.93, 1.11]	0.696	
Interests	4,888	5.2 [5.1, 5.2]	0.96 [0.90, 1.02]	0.203		0.96 [0.89, 1.04]	0.314	
Attitudes	4,888	4.9 [4.9, 5.0]	1.02 [0.96, 1.09]	0.474		1.02 [0.95, 1.10]	0.539	
Behaviour	4,888	5.0 [4.9, 5.0]	1.08 [1.01, 1.15]	0.029		1.06 [0.98, 1.15]	0.135	
Appearance	4,888	5.5 [5.4, 5.5]	1.03 [0.96, 1.10]	0.468		1.01 [0.93, 1.09]	0.823	
Principal components²					-			-
pc1	4,888	-0.2 [-0.3, -0.1]	1.00 [0.97, 1.05]	0.808		1.01 [0.96, 1.06]	0.627	
pc2	4,888	-0.0 [-0.0, 0.0]	1.07 [0.94, 1.22]	0.274		0.97 [0.86, 1.11]	0.681	
pc3	4,888	-0.0 [-0.1, -0.0]	1.11 [0.98, 1.25]	0.095		0.99 [0.87, 1.12]	0.838	
pc4	4,888	-0.0 [-0.0, 0.0]	0.69 [0.59, 0.81]	<0.001		0.75 [0.63, 0.90]	0.002	
Total	4,888	8.3% [7.3, 9.6]						

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support. Weighted proportions, mean and unadjusted *RR* are calculated on men with valid values across all confounders and masculinity domains. ¹ TMF scores are divided into 3 equal-sized groups (tertiles) based on their distribution, that is, the number of participants in each group are roughly the same. The first tertile TMF score ranged from 6 to 30, the second tertile from 31 to 35 and the third from 36 to 42. Equal-sized groups are chosen due to the light-tailed distribution, with few men that have very high or very low scores. ² Principal component scores were standardised and centred around zero. Accordingly, the mean score for each component is expected to be zero; however, minor numerical precision and rounding errors mean values may appear as very small positive or negative numbers (e.g. -0.0, 0.0 or 0.1 when rounded to one decimal place).

Source: *Ten to Men* Wave 4

Principal component analysis

Table S36: Principal component analysis results for use of physical IPV by 2022 in the cross-sectional analysis at Wave 4 (*n* = 4,888).

	PC1	PC2	PC3	PC4
Consider	0.42	-0.48	0.16	0.07
Ideals	0.40	-0.47	0.48	-0.09
Interests	0.41	0.38	0.09	0.80
Attitudes	0.42	0.49	0.15	-0.30
Behaviour	0.43	0.30	-0.09	-0.50
Appearance	0.38	-0.27	-0.84	0.04

Source: *Ten to Men* Wave 4

Research question 3: Longitudinal analysis

Do self-reported masculinities modify the effect of alcohol on use of IPV?

Table S37 : Effect modification - Alcohol risk category and CMNI tertiles (low, middle, high) in relation to initiating IPV between 2013-14 and 2022

Term	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Main effect			0.1197
CMNI tertile 2 × low risk drinkers	0.92 [0.72, 1.18]	0.522	
CMNI tertile 3 × low risk drinkers	1.03 [0.77, 1.37]	0.859	
Hazardous alcohol use × among CMNI tertile 1	1.32 [0.96, 1.83]	0.088	
Harmful alcohol use / probable dependence × among CMNI tertile 1	1.23 [0.70, 2.16]	0.482	
Interaction terms (multiplicative modifiers)			
Hazardous alcohol use × CMNI tertile 2	0.92 [0.59, 1.44]	0.707	
Harmful alcohol use / probable dependence × CMNI tertile 2	1.30 [0.62, 2.70]	0.486	
Hazardous alcohol use × CMNI tertile 3	0.93 [0.57, 1.50]	0.761	
Harmful alcohol use / probable dependence × CMNI tertile 3	1.37 [0.66, 2.84]	0.400	
Hazardous alcohol use × CMNI tertile 2	0.92 [0.59, 1.44]	0.707	

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: Ten to Men Waves 1 and 4

Table S38: Joint effects model – Initiating IPV between 2013-14 and 2022 across combined alcohol risk categories and CMNI tertiles in 2013-14

Term	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Reference category (low alcohol risk and CMNI tertile 1)	-	-	0.1197
Low alcohol risk & Tertile 2	0.92 [0.72, 1.18]	0.522	
Low alcohol risk & Tertile 3	1.03 [0.77, 1.37]	0.859	
Hazardous alcohol use & Tertile 1	1.32 [0.96, 1.83]	0.088	
Hazardous alcohol use & Tertile 2	1.12 [0.83, 1.51]	0.448	
Hazardous alcohol use & Tertile 3	1.26 [0.92, 1.74]	0.155	
Harmful alcohol use / probable dependence & Tertile 1	1.23 [0.70, 2.16]	0.482	
Harmful alcohol use / probable dependence & Tertile 2	1.47 [0.91, 2.37]	0.114	
Harmful alcohol use / probable dependence & Tertile 3	1.72 [1.10, 2.70]	0.018	

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: Ten to Men Waves 1 and 4

Alcohol risk and CMNI domains

Table S39: Risk of initiating IPV between 2013-14 and 2022 per 1 unit increase in each CMNI domains across different alcohol risk categories

CMNI domain (per 1 unit increase)	Alcohol: Increasing risk (vs low)		Alcohol: Higher risk / possible dependence (vs low)	
	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	<i>RR</i> [95% CI]	<i>p</i> value
Primacy	1.27 [0.81, 2.00]	0.291	1.08 [0.55, 2.13]	0.814
Dominance	1.95 [1.25, 3.06]	0.003	1.46 [0.73, 2.91]	0.283
Heterosexual	1.25 [0.86, 1.83]	0.245	1.19 [0.67, 2.13]	0.546
Power over women	1.24 [0.93, 1.64]	0.142	1.73 [1.13, 2.67]	0.012
Emotional control	0.85 [0.53, 1.38]	0.517	1.26 [0.63, 2.52]	0.507
Playboy	1.32 [0.96, 1.81]	0.082	1.11 [0.65, 1.89]	0.701
Violence	1.12 [0.76, 1.63]	0.575	0.89 [0.46, 1.71]	0.730
Status	1.76 [0.89, 3.48]	0.106	1.72 [0.68, 4.38]	0.252
Self reliance	1.02 [0.62, 1.68]	0.952	2.99 [1.63, 5.47]	<0.001
Risk taking	1.38 [0.85, 2.26]	0.193	1.10 [0.49, 2.47]	0.818
Winning	1.33 [0.83, 2.13]	0.238	1.89 [1.06, 3.36]	0.032

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: Ten to Men Waves 1 and 4

Research question 3: Cross-sectional at Wave 1

Table S40: Effect modification - Alcohol risk category and CMNI tertiles (low, middle, high) in relation to ever using IPV by 2013/14

Term	Adjusted <i>RR</i> [95% CI]	<i>p</i> value
Main effect		
The effect of CMNI among low-risk drinkers		
CMNI tertile 2 (vs tertile 1)	1.11 [0.99, 1.23]	0.065
CMNI tertile 3 (vs tertile 1)	1.19 [1.06, 1.35]	0.004
The effect of alcohol among CMNI tertile 1 group		
Hazardous alcohol use × among CMNI tertile 1	1.23 [1.06, 1.43]	0.005
Harmful alcohol use / probable dependence × among CMNI tertile 1	1.82 [1.54, 2.14]	<0.001
Interaction terms (multiplicative modifiers)		
Hazardous alcohol use × CMNI tertile 2	1.06 [0.87, 1.28]	0.580
Harmful alcohol use / probable dependence × CMNI tertile 2	0.94 [0.76, 1.16]	0.564
Hazardous alcohol use × CMNI tertile 3	1.10 [0.91, 1.34]	0.323
Harmful alcohol use / probable dependence × CMNI tertile 3	0.86 [0.70, 1.07]	0.170
Hazardous alcohol use × CMNI tertile 2	1.06 [0.87, 1.28]	0.580

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: Ten to Men Waves 1 and 4

Table S41: Joint effects model – Initiating IPV between 2013-14 and 2022 across combined alcohol risk categories and CMNI tertiles in 2013/14

Joint group	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Reference category (low alcohol risk and CMNI tertile 1)	-	-	<0.001
Low alcohol risk & Tertile 2	0.92 [0.72, 1.18]	0.522	
Low alcohol risk & Tertile 3	1.03 [0.77, 1.37]	0.859	
Hazardous alcohol use & Tertile 1	1.32 [0.96, 1.83]	0.088	
Hazardous alcohol use & Tertile 2	1.12 [0.83, 1.51]	0.448	
Hazardous alcohol use & Tertile 3	1.26 [0.92, 1.74]	0.155	
Harmful alcohol use / probable dependence & Tertile 1	1.23 [0.70, 2.16]	0.482	
Harmful alcohol use / probable dependence & Tertile 2	1.47 [0.91, 2.37]	0.114	
Harmful alcohol use / probable dependence & Tertile 3	1.72 [1.10, 2.70]	0.018	

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: Ten to Men Waves 1 and 4

Alcohol risk and CMNI domains

Table S42: CMNI domains (per 1 unit increase) by alcohol risk group (Ever IPV use, Wave 1)

CMNI domain (per 1 unit increase)	Alcohol: Increasing risk (vs low)		Alcohol: Higher risk / possible dependence (vs low)	
	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	<i>RR</i> [95% CI]	<i>p</i> value
Primacy	0.90 [0.87, 0.92]	<0.001	0.99 [0.96, 1.02]	0.445
Dominance	1.01 [0.98, 1.05]	0.519	1.12 [1.08, 1.16]	<0.001
Heterosexual	0.94 [0.92, 0.97]	<0.001	1.03 [1.00, 1.05]	0.043
Power over women	1.01 [0.97, 1.05]	0.526	1.17 [1.13, 1.22]	<0.001
Emotional control	0.92 [0.90, 0.95]	<0.001	1.00 [0.97, 1.03]	0.910
Playboy	1.01 [0.98, 1.04]	0.635	1.09 [1.06, 1.13]	<0.001
Violence	1.07 [1.05, 1.10]	<0.001	1.16 [1.13, 1.19]	<0.001
Status	0.99 [0.96, 1.03]	0.712	1.07 [1.04, 1.11]	<0.001
Self reliance	0.95 [0.92, 0.98]	0.003	1.04 [1.01, 1.07]	0.013
Risk taking	1.01 [0.98, 1.04]	0.595	1.09 [1.06, 1.12]	<0.001
Winning	0.95 [0.92, 0.99]	0.006	1.05 [1.02, 1.09]	0.003

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: *Ten to Men* Waves 1 and 4

Alcohol risk and CMNI principal components

Table S43: Risk of ever using IPV between 2013-14 and 2022 per 1 unit increase in CMNI principal components across different alcohol risk categories

PC (per 1 unit increase)	Low-risk drinkers		Increasing-risk drinkers		Higher risk/possible dependence	
	<i>RR</i> [95% CI]	<i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value
PC1-long	1.08 [1.04, 1.11]	<0.001	1.04 [0.99, 1.10]	0.109	1.04 [0.97, 1.10]	0.270
PC2-long	1.00 [0.97, 1.04]	0.885	0.98 [0.92, 1.04]	0.434	0.97 [0.90, 1.04]	0.414
PC3-long	1.14 [1.10, 1.18]	<0.001	0.99 [0.93, 1.06]	0.749	1.01 [0.94, 1.09]	0.768
PC4-long	1.06 [1.01, 1.10]	0.009	1.02 [0.95, 1.10]	0.602	1.08 [0.99, 1.19]	0.090

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: *Ten to Men* Waves 1 and 4

Research question 3: Cross-sectional at Wave 4

Alcohol risk and TMF total (tertiles)

Table S44: Effect modification - Alcohol risk category and TMF tertiles (low, middle, high) in relation to ever using IPV by 2022

Term	Adjusted <i>RR</i> [95% CI]	<i>p</i> value
Main effect		
The effect of TMF among low-risk drinkers		
CMNI tertile 2 (vs tertile 1)	1.31 [1.11, 1.55]	0.002
CMNI tertile 3 (vs tertile 1)		
The effect of alcohol among TMF tertile 1 group	1.46 [1.18, 1.82]	0.001
Hazardous alcohol use × among CMNI tertile 1	1.06 [0.91, 1.25]	0.449
Harmful alcohol use / probable dependence × among CMNI Tertile 1	1.02 [0.87, 1.20]	0.818
Interaction terms (multiplicative modifiers)		
Hazardous alcohol use × CMNI tertile 2	0.97 [0.74, 1.26]	0.803
Harmful alcohol use / probable dependence × TMF tertile 2	1.04 [0.80, 1.34]	0.766
Hazardous alcohol use × CMNI tertile 3	1.16 [0.83, 1.64]	0.381
Harmful alcohol use / probable dependence × TMF I tertile 2	1.02 [0.71, 1.48]	0.899

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: *Ten to Men* Waves 1 and 4

Joint effects: Which alcohol risk categories and TMF tertiles

Table S45: Joint risk model – ever using IPV by 2022 across combined alcohol risk categories and CMNI tertiles in 2022

Joint group	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Overall <i>p</i> value
Reference category (Low risk alcohol × TMF tertile 1)	–	–	<0.001
Low alcohol risk & Tertile 2	1.06 [0.91, 1.25]	0.449	
Low alcohol risk & Tertile 3	1.02 [0.87, 1.20]	0.818	
Hazardous alcohol use & Tertile 1	1.31 [1.11, 1.55]	0.002	
Hazardous alcohol use & Tertile 2	1.35 [1.11, 1.64]	0.002	
Hazardous alcohol use & Tertile 3	1.39 [1.15, 1.68]	0.001	
Harmful alcohol use / probable dependence & Tertile 1	1.46 [1.18, 1.82]	0.001	
Harmful alcohol use / probable dependence & Tertile 2	1.82 [1.40, 2.35]	<0.001	
Harmful alcohol use / probable dependence & Tertile 3	1.53 [1.14, 2.04]	0.004	

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: *Ten to Men* Waves 1 and 4

Alcohol risk and TMF items

Table S46: TMF items (per 1 unit increase) by alcohol risk group (Ever IPV use, Wave 4)

CMNI domain (per 1 unit increase)	Alcohol: Increasing risk (vs low)		Alcohol: Higher risk / possible dependence (vs low)	
	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	<i>RR</i> [95% CI]	<i>p</i> value
Consider	1.07 [1.03, 1.12]	0.001	1.11 [1.06, 1.16]	<0.001
Ideals	1.04 [0.99, 1.09]	0.103	1.07 [1.02, 1.12]	0.008
Interests	1.03 [0.99, 1.07]	0.187	1.06 [1.01, 1.11]	0.011
Attitudes/beliefs	1.04 [1.00, 1.09]	0.029	1.07 [1.02, 1.12]	0.002
Behaviour	1.06 [1.02, 1.10]	0.007	1.09 [1.04, 1.14]	<0.001
Appearance	1.07 [1.03, 1.12]	0.001	1.10 [1.05, 1.16]	<0.001

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: *Ten to Men* Waves 1 and 4

Alcohol risk and TMF principal components

Table S47: Risk of ever using IPV between 2022 per 1 unit increase in TMF principal components across different alcohol risk categories

PC (per 1 unit increase)	Low-risk drinkers		Increasing-risk drinkers		Higher risk/possible dependence	
	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value	Adjusted <i>RR</i> [95% CI]	<i>p</i> value
PC1-long	1.01 [0.97, 1.04]	0.727	1.04 [0.99, 1.10]	0.264	1.03 [0.96, 1.10]	0.468
PC2-long	1.06 [0.96, 1.16]	0.242	1.01 [0.87, 1.17]	0.532	1.08 [0.90, 1.30]	0.791
PC3-long	1.15 [1.05, 1.26]	0.002	0.95 [0.80, 1.12]	0.011	0.97 [0.82, 1.15]	0.101
PC4-long	0.94 [0.84, 1.07]	0.352	0.87 [0.71, 1.07]	0.406	1.12 [0.84, 1.52]	0.275

Notes: Adjusted *RR*: adjusted for age, marital status, employment, educational status, financial stress, remoteness, SEIFA IRSD, sexuality, depression, anxiety, suicidal behaviours, drug use and social support.

Source: *Ten to Men* Waves 1 and 4

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