


Canadian French Translation and Preliminary Validation of the Conformity to Masculine Norms Inventory: A Pilot Study

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Abstract

Conformity to masculine norms has been linked to poor mental and physical health outcomes. Its valid assessment among subgroups of the population is therefore a crucial step in the investigation of intercultural variability in the enactment of masculinity, as well as its causes, costs, and benefits. The present pilot study aimed to adapt and conduct a preliminary validation of a French version of the Conformity to Masculine Norms Inventory (CMNI-22), a self-report questionnaire designed to assess overall conformity to male gender standards. The French adaptation of the CMNI-22 (CanFr-CMNI-22) was developed using a forward-backward translation process. The data from a sample of 57 Canadian French men (23–81 years old), collected at two time points 2 weeks apart, were then analyzed to investigate the psychometric properties and factor structure of the CanFr-CMNI-22. Findings indicated adequate internal reliability of the global scores and highly satisfactory test–retest reliability. Correlations with the Male Role Norms Inventory-Short Form (MRNI-SF) at both time points also showed strong convergent validity. Overall, the CanFr-CMNI-22 appears to be a reliable and valid instrument to assess conformity to traditional masculine gender norms in French-speaking men from the general population. This study is a key step in a research process aiming to validate the Canadian French version of the CMNI and contributes to enhance inclusive research and clinical care to foster men's health.

Keywords

Reliability, validity, men, conformity to masculine norms

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Social norms refer to standards exhibited by society that influence and guide people's behavior (Cialdini & Trost, 1998). Broadly, social norms constitute shared implicit or explicit rules of conduct that different social groups tend to conform to (Sanderson & Safdar, 2012). Throughout their socialization process, men and women observe how others act, and learn what is acceptable and unacceptable behavior for their sex. Notably, men of a variety of socio-cultural backgrounds are often expected to be predominantly independent and assertive, whereas women are often expected to be caring and nurturing (Eagly et al.,

2012). These gender-specific standards are known as gender role norms, and they are omnipresent in modern American culture (Mahalik et al., 2003). Gender role norms are generally shaped by the most dominant groups of society and are communicated to others through descriptive, injunctive, and cohesive standards. A person's level of conformity to these norms depends, among other factors, on different group and individual characteristics, such as socioeconomic status, same-sex others' traits and attributes, as well as racial identity (Mahalik et al., 2003). There are both costs and benefits to adherence to these



expectations and consequently, an individual may or may not choose to do so (Mahalik et al., 2003).

Men's physical and mental health tend to be worse than women's (Rochelle, 2019). To elucidate this, researchers have often turned to conformity and nonconformity to masculine norms (e.g., Addis & Mahalik, 2003). Adherence to masculine norms has been associated with poor mental health (Milner et al., 2018), suicide (Pirkis et al., 2017), irritability, anger, and resentment (Mahalik et al., 2003). While most research in the past decades has repeatedly documented negative outcomes with regard to the link between adherence to masculine norms and men's health (Rochelle, 2019), scholars must not disregard the potential benefits of conformity to masculine norms on health outcomes among men. For instance, in a cross-cultural study, Rochelle (2019) noted that adherence to masculine norms predicted engagement in health behaviors among Hong Kong Chinese, Mainland Chinese, and White men. In addition, violence, a variable commonly related to masculine norms, has been associated with courage and exercising in response to depression in a content analysis examining 17 studies (Gerdes & Levant, 2018). In the same study, risk taking was positively linked to three positive outcome variables: courage, endurance, and resilience.

Nonetheless, many studies contradict these findings, documenting that traditional masculine gender norms lead to lower rates of health-protective behaviors such as exercising (Mahalik et al., 2007), healthy eating habits (Griffith et al., 2012), and regular annual screenings (Morrison, 2012). A recent meta-analytic synthesis of research focusing on conformity to masculine norms supports the notion of deleterious interpersonal consequences linked to adherence to masculinity standards, revealing the latter's moderate yet positive association with poorer mental health and poorer psychological help-seeking (Wong et al., 2017). With the growing evidence of the importance of masculine norms on men's experiences and mental/physical health outcomes, there is a greater need to validate rigorous instruments among subgroups of the population. Given the determinant social role of language in health (de Moissac & Bowen, 2019), translating these tools into other languages is crucial.

Several instruments have been developed to assess the various dimensions of traditional masculine norms (Hsu & Iwamoto, 2014). The Male Role Norms Inventory-Short Form (MRNI-SF; Levant et al., 2013), developed from the Male Role Norms Inventory-Revised (MRNI-R; Levant et al., 2007), is designed to assess seven dimensions of masculinity ideology: Avoidance of femininity, Negativity toward sexual minorities, Self-reliance through mechanical skills, Toughness, Dominance, Importance of sex, and Restrictive emotionality. The 21-item scale asks participants to rate, from a Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), their level of agreement or disagreement with different statements of traditional masculine standards (e.g., *When the going gets tough, men should get tough*). The total score of the MRNI-SF is obtained by computing the mean of all items, where a higher score indicates higher adherence to traditional masculine ideologies (Levant et al., 2013). Numerous studies have documented the satisfactory internal consistency (Gerdes et al., 2018; Levant et al., 2013; McDermott et al., 2017; Rosenberg et al., 2017) and concurrent validity (Levant et al., 2016) of the MRNI-SF. A confirmatory factor analysis also confirmed that the theoretical construct is adequately represented by the seven-factor structure of the scale (Levant et al., 2013). To the best of our knowledge, the temporal stability of the MRNI-SF has not been tested in the past.

Although forms of the MRNI assess adherence to masculine norms more comprehensively than other scales do, their items still measure a limited amount of potentially salient masculine standards (Mahalik et al., 2003). Furthermore, most questionnaires assessing adherence to masculine norms, including the MRNI-SF, only measure cognitive conformity. The Conformity to Masculine Norms Inventory (CMNI; Mahalik et al., 2003) broke away from these practices, examining a larger number of dimensions of masculinity and adding measures of behavioral and affective conformity to its scale (Thompson & Bennett, 2015). Thus, the CMNI was adapted in accordance with mainstream American cultural beliefs and values about what being a man entails. Specifically, this tool has been developed in correspondence with predominant

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male groups in society, characterized as Western, North American, White, heterosexual, and middle- to upper-class (Kivisalu et al., 2015). The CMNI is a self-reported questionnaire originally comprised of 94 items. An exploratory factor analysis indicated 11 well defined factors: Winning, Emotional control, Risk taking, Violence, Dominance, Being a playboy, Self-reliance, Primacy of work, Power over women, Heterosexual self-representation, and Pursuit of status. Since its first version, multiple shorter forms of the CMNI have been adapted and validated, including a refined version composed of only 22 items (CMNI-22; Owen, 2011).

Although the items of the CMNI-22 were selected according to the two highest loading items from the 11 subscales of the original inventory (Owen, 2011), this scale is generally used to evaluate overall conformity to masculine gender standards (Rochlen et al., 2008). The 22-item version of the CMNI asks the participant to rate, from a Likert-type scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*), their level of agreement or disagreement with regard to different statements of traditional masculine norms. For example, an item included in the Primacy of work subscale of the CMNI-22 is: “*My work is the most important part of my life.*” The total score of the CMNI-22 is computed by calculating the sum of all items (Kivisalu et al., 2015) and can range from 0 to 66. Nine of the 22 items are reverse-scored and after the fact, a higher score indicates higher adherence to masculine norms (Hammer et al., 2013).

Several studies have documented the satisfactory psychometric properties of the CMNI-22. First, Cronbach α coefficients for the CMNI-22’s global score vary from .64 to .78 in different samples of men, demonstrating low to moderate, yet mostly acceptable reliability (Berger et al., 2012; Burns & Mahalik, 2008; Hamilton & Mahalik, 2009; McGraw et al., 2021; Owen, 2011; Rice et al., 2016; Rochlen et al., 2008). When analyzing internal consistency separately for each subscale, Milner et al. (2018) reported Cronbach α coefficients ranging from .44 (Primacy of work) to .81 (Being a playboy). Another article examining the reliability generalization of the CMNI-22 reported Cronbach α ranging from .60 to .78, with a mean of .72, coefficients considerably inferior to the CMNI-46 and the CMNI-94, which respectively had mean reliability coefficients of .86 and .91 (Kivisalu et al., 2015). To the best of our knowledge, temporal stability for the CMNI-22 has not been previously tested; however, the test–retest coefficient for the CMNI-94 global score was .95 after a 2–3-week period and varied from .51 (pursuit of status) to .96 (heterosexual self-representation) when the 11 subscales were examined separately (Mahalik et al., 2003). Excellent convergent validity has previously been confirmed for the CMNI-22, with a Pearson correlation coefficient of .92 with the original CMNI (Burns & Mahalik, 2008). In turn, the original CMNI has been positively linked,

in Mahalik et al.’s (2003) validation study, to other masculinity scales, such as the Gender Role Conflict Scale (GRCS; O’Neil et al., 1986), the Brannon Masculinity Scale (BMS; Brannon & Juni, 1984), and the Masculine Gender Role Stress Scale (MGRSS; Eisler et al., 1988). Although Rochlen et al. (2008) mentioned that the CMNI-22 is a measure of overall conformity to masculine gender norms, when modeled to load on one global masculinity factor, this tool demonstrated a poor fit (Owen, 2011). As indicated by Gerdes et al. (2018), this suggests that conformity to masculine norms may be represented more adequately as a multidimensional concept and emphasizes the importance of analyzing each of the CMNI’s subscale findings separately.

Generally, the English version of the CMNI-22 has proven to be a valid and reliable tool to assess conformity to masculine norms among men. However, its use is limited, due to a lack of studies validating translated versions of it. Although the CMNI has already been translated to Chinese (Rochelle & Yim, 2015) and Spanish (Cuéllar-Flores et al., 2011), a French adaptation has yet to be validated. The rigorous validation of translated questionnaires is important to facilitate meaningful research with these tools. Fulfilling this gap in the literature will therefore allow for more research with this masculinity scale, thus enhancing psychologists’ capability to empirically estimate ideologies about what it means to be a man in modern American cultures (Thompson & Bennett, 2015). Hence, the objectives of the present study were (a) to translate the CMNI-22 into French and (b) to test its internal reliability, test–retest reliability over a 2-week period, and convergent validity in a sample of French-speaking men from the general population in New Brunswick and Québec, Canada. The CMNI-22 was selected to be adapted into French over and above other versions of the CMNI for two main reasons: its feasibility (ease of administration and shorter time to complete) and its appropriateness for observational studies. Most researchers of masculinity scales, such as the CMNI, have used samples of college-age respondents, generally omitting adult men and older men (Thompson & Bennett, 2015). Therefore, to elucidate whether the CMNI-22 can be validly administered to a wider age range, a further aim of this study is to validate a French adaptation of the CMNI-22 in a sample that includes older-aged men. This will be assessed with the help of the MRNI-SF, our comparison scale.

Method

French Translation Procedure

Translation of the CMNI-22 into Canadian French (CanFr-CMNI-22) was conducted using a forward-backward method developed by the Mapi Research Institute collaboration (Acquadro et al., 2008) and used in different studies (see Varni et al., 2002). First, three bilingual research

professionals from different scientific backgrounds (health policy sciences, biochemistry, and public health) translated independently the original CMNI-22 questionnaire items from English into French. In a consensus meeting between the three translators and the study principal investigator, the translated versions were compared and observed inconsistencies or differences in terms were discussed (with the principal investigator acting as referee) to reach consensus on a final agreed upon choice. Cohen's kappa coefficient was developed to calculate inter-rater reliability and is used here to measure agreement among the translators (McHugh, 2012). After reviewing, a unique French version of the questionnaire was created. Then, the revised French version was back-translated independently from French to English by two research professionals, totally blinded to the original version. Third, the back-translations were independently compared with the original CMNI-22 to assess equivalence. We observed a Cohen's kappa coefficient of 87%, indicating an almost perfect inter-rater reliability (McHugh, 2012). We thus considered the revised version as the provisional version of the CMNI-22. Finally, once the provisional French version was obtained, a pretest involving six adult men and older men (mean age = 65.67, SD = 8.29, range = 53–76), who were native speakers of French, was conducted to further ensure the validity of the translated questionnaire. The pretest assessed the quality of the translation, the comprehensibility of the content, and the feasibility of the instrument (assessment of time needed to fill in the questionnaire). Men were also invited to give written recommendations to improve the intelligibility of the items. Based on the participants' feedback, minor changes were made to two items of the scale: Item 4 went from "*Ce serait affreux si quelqu'un pensait que j'étais homosexuel*" to "*Ce serait affreux si quelqu'un pensait que j'étais gay (homosexuel)*," and item 5 went from "*J'aime ça quand les hommes prennent en charge des femmes*" to "*J'aime ça quand les hommes sont en charge des femmes.*" The final version of the CanFr-CMNI-22 is presented in Appendix A (supplementary file).

Participants

Three strategies were used to solicit participation: media calls, invitation posters displayed in the community, and presentations during meetings of community organizations (e.g., Lions Club, Rotary Club, and the Knights of Columbus). A total of 64 participants were recruited from social media and the community, using passive calls (i.e., publication of solicitation and presentation of the project) and a snow-ball technique. Inclusion criteria were to be a native speaker of French, to be over 19 years old, and to be located in New Brunswick or Québec, Canada. Data collection was carried out between June and October 2018. A total of 57 participants (89%) were

eligible and returned the T-Baseline (100%) and the T-2Weeks (100%) questionnaires.

Measures

Sociodemographic Characteristics. Participants completed a self-report questionnaire of variables comprising age, race/ethnicity, sexual orientation, marital status, education, occupation, and gross home income.

Conformity to Masculine Norms. The CanFr-CMNI-22 and the MRNI-SF were administered twice, 2 weeks apart. The MRNI-SF was translated into French by Houle et al. (2015) using a forward-backward method. In their sample of French-speaking men, Cronbach α s for each three-item subscale ranged between .62 and .85, with two values being less than .70.

Statistical Analyses

Reliability. To assess internal reliability, coefficient alphas and corrected item-total correlations were calculated for the CanFr-CMNI-22 at both T-Baseline and T-2Weeks. A Cronbach α coefficient of more than .70 was considered satisfactory internal consistency (Nunnally & Bernstein, 1994). To assess test-retest reliability of the CanFr-CMNI-22 and the MRNI-SF, intraclass correlations were calculated between the scores at both time points.

Validity. Convergent validity was assessed by examining the correlations between the CanFr-CMNI-22 and the MRNI-SF at both time points.

Ethical Considerations

This pilot study was approved by the university's Research Ethics Committee. Written information about the purpose of the study was given and explained to each participant. Participation was voluntary. Participants were instructed to complete two self-report questionnaires 2 weeks apart. They were informed that they could leave the study at any time and have the right to choose whether their data are kept or excluded from the analysis. All participants signed a written informed consent before completing the questionnaire. Participants received a \$25 gift card at completion of the T-2weeks questionnaire.

Results

Descriptive Statistics

Table 1 reports the sociodemographic characteristics for the sample of men from the general population (aged 23–81, with a mean of 50.61).

Table 1. Descriptive Statistics and Sociodemographic Characteristics of Participants ($N = 57$).

Sociodemographic Variables	N (%)
Age (years)	
29	7 (12.3)
30–39	4 (7)
40–49	11 (19.3)
50–59	17 (29.8)
60	17 (29.8)
Missing	1 (1.8)
Gender	
Male	57 (100)
Ethnicity	
White	57 (100)
Marital status	
Married	37 (64.9)
Common law relationship	16 (28)
Separated	1 (1.8)
Single, never married	3 (5.3)
Educational level	
8 th grade	6 (10.5)
High school (without diploma)	13 (22.8)
High school (with diploma)	16 (28.1)
College	21 (36.8)
University (undergraduate)	1 (1.8)
Sex orientation	
Heterosexual	57 (100)
Income	
<\$25,000	4 (7)
\$25,000–\$60,000	25 (43.9)
>\$60,000	24 (42.1)
Prefer not to answer	4 (7)
Employment	
Full-time employee	36 (63.1)
Part-time employee	4 (7)
Full-time self-employed	6 (10.5)
Part-time self-employed	1 (1.8)
Unemployed	1 (1.8)
Retired	7 (12.3)
Other or missing	2 (3.5)

Reliability

Inspection of Table 2 reveals that both questionnaires' global scores met reliability standards, with Cronbach α coefficients equivalent to .70 or higher at both time points. When the internal consistency for the 11 subscales of the CMNI-22 is estimated separately, Cronbach α s range from .08 to .70, demonstrating non-satisfactory internal reliability for all dimensions of the CMNI-22, with the exception of the Emotional control subscale at T1. However, this is to be expected as the CMNI-22 is a measure of global masculinity and does not explicitly contain subscales (Wong et al., 2017). Consistent with

Table 2. Psychometric Properties of Our French Translation of the CMNI-22 and the French Version of the MRNI-SF.

Measures	Cronbach's α		Test–Retest
	T1	T2	
CMNI-22	.70	.74	.90***
Winning	.35	.31	
Emotional control	.70	.43	
Risk-taking	.31	.27	
Violence	.49	.44	
Dominance	.08	.09	
Being a playboy	.59	.63	
Self-reliance	.29	.62	
Primacy of work	.39	.27	
Power over women	.25	.54	
Heterosexual self-representation	.63	.54	
Pursuit of status	.68	.45	
MRNI-SF	.93	.94	.96***

Note. CMNI-22 = Conformity to Masculine Norms Inventory, 22 items; MRNI-SF = Male Role Norms Inventory-Short Form.

*** p -value < .001.

prior research, Cronbach's α for the MRNI-SF surpasses the recommended .90 (Tavakol & Dennick, 2011). Temporal stability measured with test–retest reliability was highly satisfactory for both the CanFr-CMNI-22 and the MRNI-SF, with strong and positive Pearson correlations at both time points. Corrected item-total correlations and corrected subscale total correlations of the CanFr-CMNI-22 are presented in Table 3 and Table 4, respectively. Corrected subscale total correlations were similar to those reported in Mahalik et al. (2003)'s article. However, when considering both time points, nearly half of the subscales did not meet the standard criteria of .30 (Cohen, 1988).

Validity

Convergent validity was assessed separately at both time points by calculating Pearson correlations between the total scores of the French versions of the CMNI-22 and the MRNI-SF. Positive and strong coefficients equivalent to Carlson and Herdman's (2012) recommended .70 were observed at both T1 ($r = .70, p < .001$) and T2 ($r = .71, p < .001$), demonstrating acceptable convergent validity.

Discussion

Men often endure poorer mental and physical health experiences than do women (Rochelle, 2019), and this tendency has repeatedly been elucidated by conformity to male gender norms (e.g., Addis & Mahalik, 2003; Mahalik et al., 2003; Mahalik et al., 2007; Milner et al.,

Table 3. Corrected Item-Total Correlations of Our French Translation of the CMNI-22 at Both Time Points.

CMNI-22 Items	T1	T2
1. My work is the most important part of my life.	.21	.11
2. I make sure people do as I say.	.35	.40
3. In general, I do not like risky situations.	.16	.06
4. It would be awful if someone thought I was gay.	.30	.38
5. I love it when men are in charge of women.	.47	.59
6. I like to talk about my feelings.	.26	.28
7. I would feel good if I had many sexual partners.	.38	.44
8. It is important to me that people think I am heterosexual.	.17	.19
9. I believe that violence is never justified.	.43	.32
10. I tend to share my feelings.	.29	.25
11. I should be in charge.	.04	.12
12. I would hate to be important.	.27	.27
13. Sometimes violent action is necessary.	.35	.28
14. I don't like giving all my attention to work.	-.002	.04
15. More often than not, losing does not bother me.	.33	.32
16. If I could, I would frequently change sexual partners.	.12	.30
17. I never do things to be an important person.	.32	.36
18. I never ask for help.	.04	.39
19. I enjoy taking risks.	.27	.41
20. Men and women should respect each other as equals.	.25	.27
21. Winning isn't everything, it's the only thing.	.50	.52
22. It bothers me when I have to ask for help.	.15	.25

Note. CMNI-22 = Conformity to Masculine Norms Inventory, 22 items.

Table 4. Corrected Subscale Total Correlations of Our French Translation of the CMNI-22 at Both Time Points.

CMNI-22 Subscales	T1	T2
1. Winning	.53	.55
2. Emotional control	.26	.30
3. Risk-taking	.26	.30
4. Violence	.45	.33
5. Dominance	.28	.42
6. Being a playboy	.23	.33
7. Self-reliance	.10	.35
8. Primacy of work	.08	.01
9. Power over women	.48	.49
10. Heterosexual self-representation	.20	.26
11. Pursuit of status	.27	.36

Note. CMNI-22 = Conformity to Masculine Norms Inventory, 22 items.

2018; Pirkis et al., 2017). The CMNI is the first masculinity inventory that includes measures of cognitive, affective, and behavioral masculinity conformity to its scale. Yet, its use is limited, due to a lack of validated translated versions. The aim of the current pilot study was to address this gap in the literature by translating the Conformity to Masculine Norms Inventory-Short Form (CMNI-22) into French and by conducting a preliminary examination of

its psychometric properties. Overall, the results of this study suggest that the French adaptation of the CMNI-22 is a reliable and valid tool to assess conformity to male gender norms in men from the general population.

The first goal of this study was to develop a French adaptation of the CMNI-22 by following a rigorous translation process. Three research professionals forward-translated the English version of the CMNI-22 to the French language. This allowed the detection and correction of any inconsistencies between each of the three translated versions. The French translation of the CMNI-22 then followed a back-translation to its original English form, to ensure accuracy. The independent back-translation performed by two research professionals showed an almost perfect inter-rater agreement of 87%. After a preliminary pilot test with a small sample of men, and correction of the wording of two items, we concluded that the Canadian French translation of the CMNI-22 (CanFr-CMNI-22) was adequate for use in the present study.

The second goal of the study was to pretest and explore the reliability and the validity of the CanFr-CMNI-22. The psychometric properties of the CanFr-CMNI-22 documented in this study were quite similar to those reported in prior research on the English version (Berger et al., 2012; Burns & Mahalik, 2008; Hamilton & Mahalik, 2009; Owen, 2011; Rice et al., 2016; Rochlen et al.,

2008). Indeed, Cronbach α coefficients for the total scores of the French adaptation of this tool varied near the cut-off criteria of .70 (Nunnally & Bernstein, 1994). Greater variability was observed when calculating internal reliability for individual subscales, however this was anticipated seeing as the CMNI-22 is generally used as a measure of global masculinity (Rochlen et al., 2008). As far as we know, ours is the first analysis of temporal stability for the CMNI-22. The test–retest correlation for the current sample was satisfactory after a period of 2 weeks, with a strong and positive coefficient well above the cut-off criteria for excellent reliability of .75, recommended by Fleiss (1986, as cited in Oremus et al., 2012). The convergent validity of the CanFr-CMNI-22 was also supported. In fact, strong correlations equivalent to the suggested .70 (Carlson & Herdman, 2012) with the MRNI-SF, another measure of masculinity, were observed at both time points.

A further aim of this study was to shed light on whether the CMNI-22 is a measure that compliments younger as well as older generations' masculinity ideologies. The majority of research on the CMNI has used college-aged male participants, thus neglecting older aged men (Thompson & Bennett, 2015). Important strengths of this study involve the pretest on six adult men and older men, and the wider age range of the pilot study sample. Indeed, the comprehensibility of the content by older aged men was qualitatively assessed by conducting the pretest on men aged between 53 and 76 years old. Findings of the pilot study were also similar to those reported on college-aged male participants (Owen, 2011), thus providing initial support for the use of the CMNI-22 in men of various age groups.

Sex/Gender

In spite of this questionnaire having men as its population of interest, it is important for researchers to also assess women's conformity to masculine norms. Masculinity is a concept that goes beyond biological sex; its demeanor further depends on gender socialization. As masculine gender norms, a social construct, can influence both men and women, studies only assessing men's conformity to masculinity neglect to differentiate sex and gender. The CMNI, like most masculinity or femininity measures, was adapted in order to estimate the process of gender socialization, not biological sex (Owen, 2011). Additionally, there is evidence that the social construction of gender may have a strong influence on health outcomes (Caroli & Weber-Baghdiguian, 2016). This underlines the importance of considering both sexes while conducting studies that involve gender norms. We consider the absence of female participants in the present study a limit, and future research should incorporate both sexes in their studies to ensure more robust results.

Conformity to masculine norms questionnaires may also help researchers investigate how gender norms evolve over time, as well as the positive and negative effects of these changes on mental and physical health outcomes. With gender neutrality and gender-neutral parenting on the rise (Saguy & Williams, 2019), it is important for future research to address the shift in gender norms, and to document the challenges, consequences, and impacts of one's resistance to traditional gender stereotypes.

Limitations

These results are presented in the context of several limitations including the sample size and the ratio of respondents to questions validated. Specifically, with 57 participants and 22 items, we did not meet the recommended guideline of 5 to 1 respondent-to-item ratio (Tsang et al., 2017). The small number of participants reduces the statistical power needed to validate the questionnaire and limits the generalizability of the results. Nevertheless, this preliminary pilot study is informative in determining whether the items of the translated instrument adequately assess the construct of interest and whether changes to the CanFr-CMNI-22 are needed before conducting a thorough analysis of its psychometric properties in a larger and more diversified sample (Tsang et al., 2017).

The composition of the sample may also limit the generalizability of our results. As the recruited sample identified as white and heterosexual, the instruments may not be valid for gay men, transgender men, or men from non-White ethnic or cultural backgrounds. Additional research is needed to assess the validity of the CanFr-CMNI-22 among more diverse Francophone men. Finally, certain masculine norms have been deemed politically incorrect (e.g., being a playboy) or even illegal (e.g., violence). This could be problematic, because it could lead to biased answers due to social desirability (Mahalik et al., 2003). We recommend the concomitant use of a social desirability questionnaire, such as the Marlowe-Crowne Social Desirability Scale-Short Form (Reynolds, 1982), when administering the CMNI-22, to control for this in future validation studies.

Clinical Implications

Conformity to masculine norms is linked to many adverse mental and physical health outcomes (Mahalik et al., 2003; McGraw et al., 2021; Milner et al., 2019; Salgado et al., 2019). For example, adherence to Violence, Dominance as well as Risk-taking has been linked to psychological distress through somatization among men (Mahalik et al., 2003). More recently, McGraw and colleagues' (2021)

study revealed that Emotional control, Self-reliance, and Violence predicts different generations' likelihood of decreased regular health service use. Language also plays a determinant role in health (Bowen, 2001; de Moissac & Bowen, 2019). Creating, translating, and validating multi-dimensional masculinity questionnaires, such as the CMNI, is thus crucial to increase their administration to a larger portion of the population. This study represents an important starting point to allow the improvement of research and care in the French population, as it provides a robust instrument capable of assessing general adherence to masculine norms among French-speaking men. By evaluating the affective, behavioral, and cognitive dimensions of masculine norms, the CanFr-CMNI-22 can give researchers and practitioners a better understanding of the variability in the enactment of masculinity in French-speaking men, as well as in understanding the causes, costs, and benefits of this variability.

Integrating the administration of the CanFr-CMNI-22 into assessment and treatment could also potentially enhance clinical care by improving clinicians' ability to identify the predominant aspects of masculinity for a given French-speaking client (Mahalik et al., 2003). It could be useful for health-care providers and clinicians to evaluate with their male clients whether their enactment of masculinity contributes stress to their lives and, when appropriate, explore ways for them to construct a healthier personal masculinity (Gerdes et al., 2018; Mahalik et al., 2003). Recent studies exploring the positive impact of masculinity on men's health indicated that pursuing specific dimensions of masculinity can drive preventative health behaviors (McGraw et al., 2021; Rochelle, 2019). As such, psychotherapy could build upon masculine norms to help men improve their health and well-being (Mahalik et al., 2003).

Conclusion

To the best of our knowledge, this study is the first to translate and validate a French adaptation of the CMNI-22 and, thus, contributes to the literature by facilitating further research on the link between conformity to masculine norms and health outcomes among French Canadian men. Overall, findings provide evidence for the internal reliability, temporal stability, and convergent validity of the CanFr-CMNI-22. The current study also provides initial data suggesting that the CMNI-22 is appropriate for use in men of varying ages. Future research should focus on reproducing our analyses on a larger and more diverse sample, potentially extending the sample to include female participants. Content as well as discriminant validity, and social desirability, should also be prioritized in subsequent studies to establish the validity of the CanFr-CMNI-22.

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Ethics approval

This pilot study was approved (Dossier n-1718-044) by the Research Ethics Committee of the Université de Moncton, New Brunswick, Canada, and has been performed in accordance with the ethical standards of the institution.

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Supplemental Material

Supplemental material for this article is available online.

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