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Status Loss Due to COVID-19, Traditional Masculinity, and Their Association With Recent Suicide Attempts and Suicidal Ideation

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The COVID-19 pandemic is causing extensive job loss leading to a loss of social status in many men. Endorsement of traditional masculinity ideology may render some men particularly sensitive to status loss and thereby to an increased risk for suicidality. In this anonymous online survey conducted in German-speaking European countries, 490 men completed questionnaires regarding loss of social status due to the COVID-19 pandemic, past-month and lifetime suicide attempt and suicidal ideation. Furthermore, endorsement of traditional masculinity ideology and prototypical and male-typical externalizing depression symptoms were measured. Out of a total of 490 men, 14.7% of men reported experiencing status loss due to the pandemic. These men were more than four times as likely to have attempted suicide in the past month ($OR = 4.48$, 95% CI [1.72, 11.67]) and more than twice as likely to report suicidal ideation during the past 2 weeks ($OR = 2.47$, 95% CI [1.42, 4.28]), than men not reporting status loss. Status loss, but not endorsement of traditional masculinity ideology, was associated with suicide outcomes. However, when male-typical externalizing depression symptoms and prototypical depression symptoms were included in the models, they exhibited the only direct associations with suicide outcomes (e.g., for past-month suicide attempt: male-typical externalizing depression symptoms $OR = 2.18$, 95% CI [1.31, 3.62], prototypical depression symptoms $OR = 2.41$, 95% CI [1.13, 5.12]). A significant interaction between status loss and endorsement of traditional masculinity ideology further suggests an enhancing moderating effect of traditional masculinity on the relationship between status loss and past-month suicide attempts ($OR = 3.27$, 95% CI [1.16, 9.27]). Status loss due to the COVID-19 pandemic emerges as risk factor for suicide in men. Men who experience status loss due to the COVID-19 pandemic while concomitantly exhibiting strong endorsement of traditional masculinity ideology have an additional increased risk of suicide.

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Andreas Walther, Jessica Grub, Ulrike Ehlert, Adrian Heald, and

Raymond Perrin contributed in design and conceptualization of the study. Andreas Walther, Jessica Grub, and Sarah Tsar contributed in participant recruitment and testing. Lukas Eggenberger and Andreas Walther contributed in data analysis and visualization. Andreas Walther, Lukas Eggenberger, Adrian Heald, and Raymond Perrin contributed in data interpretation. Andreas Walther, Lukas Eggenberger, and Sarah Tsar contributed in writing of the first draft. Andreas Walther, Ulrike Ehlert, Adrian Heald, Raymond Perrin, John S. Ogrodniczuk, and John L. Oliffe contributed in editing of subsequent versions.

The study was preregistered at Open Science Framework (<https://osf.io/q4pw3>) and a preprint was released on PsyArXiv (preprint <https://doi.org/10.31234/osf.io/h3qy6>).

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Public Significance Statement

Status loss due to the COVID-19 pandemic, particularly among men with strong endorsement of traditional masculinity ideologies, may play a critical role in understanding the elevated suicide rates in the aftermath of the most acute phase of the COVID-19 pandemic. Health care policy should specifically target men with experienced status loss due to the COVID-19 pandemic in suicide prevention programs and swiftly design mental health care campaigns tailored to the group of men with strong endorsement of traditional masculinity ideology.

Keywords: COVID-19, status loss, suicide attempt, suicidal ideation, traditional masculinity

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The COVID-19 pandemic is a crisis with emergent and ongoing intertwining health and economic implications. The international spread of the virus in early 2020, combined with rising hospitalization rates and the threat of a health care system breakdown, led to state-imposed social distancing and lockdown measures worldwide. The level of economic activity among consumers, investors, and international trade partners was severely affected by the increasing number of closing days, monetary policy decisions, and international travel restrictions (Ozili, 2020). In most economies, these COVID-19 pandemic-related government restrictions on commercial activity and social distancing measures had severe effects on the labor market (Baker et al., 2020; Gupta et al., 2020).

Unemployment rates spiked in the year 2020 due to the COVID-19 pandemic jumping from 3.8% to a high of 13.0% in the United States (U.S. Bureau of Labor Statistics, 2021). Although the unemployment rate began to recover in many nations in 2020 after an initial shock, in the United States, for example, it remained in 2021 at almost twice the level of 2019 (U.S. Bureau of Labor Statistics, 2021). Similarly, in Germany, it increased from 4.9% to 6.4% and remained elevated around 5.7% in 2021 (Liu et al., 2021; Statistisches Bundesamt, 2022). In Germany, as in many other countries, low-wage employees were most affected by furlough, job loss, or short-term work, while highly qualified employees were often able to work in a home office mode (Möhring et al., 2021). Nevertheless, nearly all employees experienced a significant reduction in subjective job security, and those who lost their jobs, had to close their businesses, or were on ongoing short-term work suffered the greatest loss of income (Möhring et al., 2021).

Economic crises have historically been accompanied by financial difficulties, job loss, job insecurity, and underemployment, which all are known risk factors for heightened suicide rates in those affected (Nordt et al., 2015). Therefore, due to elevated rates of job loss and bankruptcy declarations by businesses, a substantial increase in suicide rates has also been predicted for the COVID-19 pandemic and its aftermath (Kawohl & Nordt, 2020). Indeed, after an initial decline in the early months of the COVID-19 pandemic, a substantial increase in suicide rates was recorded for Japan's population as the COVID-19 pandemic progressed (Tanaka & Okamoto, 2021). Further, results from the United States showed that financial strain and unemployment due to COVID-19 were positively related to thoughts of suicide and self-harm (Elbogen et al., 2021). Compared against prepandemic studies, increased event rates for suicide ideation, suicide attempts, and self-harm during the COVID-19 pandemic have been reported (Dubé et al., 2021). Furthermore, a study showed that several COVID-19-related

experiences such as social distancing were associated with increased risk for past-month suicidal ideation and suicide attempt (Ammerman et al., 2021), and that recent job loss due to COVID-19 was associated with heightened suicide risk (Gratz et al., 2020; Griffiths et al., 2021). In a national representative population survey in Germany, unemployment was independently associated with poorer mental health outcomes during the COVID-19 pandemic (Liu et al., 2021). Notably, previous studies suggested that men may be more severely affected by such negative outcomes compared to women. Namely, unemployment and suicide are more strongly associated in men than women (Blakely et al., 2003; Garcy & Vågerö, 2013; Martikainen & Valkonen, 1996), as is the relation between low income and suicide (Sher, 2006). Furthermore, men as compared to women also exhibit higher levels of depression or shame after involuntary job loss (Andreeva et al., 2015; Rantakeisu et al., 1997).

A greater impact of unemployment, job loss, or income loss among men as compared to women may be related to the fact that the most important nonpecuniary cost of these aspects is the loss of social status (Creed & Macintyre, 2001; Paul & Batinic, 2010). Traditional masculinity ideologies characterized by dominance, pursuit of status, primacy of work, and self-reliance contrast the loss of social status that occurs from unemployment, involuntary job loss, or income loss. Few men can embody or behave according to all the standards upon which traditional masculinity ideologies are based (David & Brannon, 1976). Nevertheless, many men internalize traditional masculinity ideologies and agree that ideally men should behave according to such norms and standards. Endorsing and conforming to certain traditional masculinity ideologies and avoiding certain proscribed behaviors can lead to psychological distress according to the gender role strain paradigm (Pleck, 1981, 1995). This so-called gender role discrepancy stress is caused by the perceived discrepancy between the behaviors of the individual and the behaviors prescribed or proscribed according to traditional ideologies of masculinity (Levant & Richmond, 2016).

For example, involuntary job loss directly conflicts with the rigid male role norm of "pursuit of status," resulting in the potential for heightened feelings of shame, guilt, failure, and overall subordinate status (Eales, 1989; O'Neil, 2015; Rantakeisu et al., 1997). Further support for these findings stems from studies highlighting that men as compared to women estimated lower appraisals of their own status by others after a job loss (Michniewicz et al., 2014) and studies indicating that status loss, and not low socioeconomic status per se, leads to suicidality in men (Dombrowski et al., 2018; Lewis & Sloggett, 1998).

Social status rooted in the work role, which for many men offers purpose, routine and reinforces the positively connoted role of provider and protector, is essential to masculine identity as well as control over their own environment and work (Levant & Richmond, 2016; O'Neil, 2015). Therefore, men appear especially vulnerable regarding achievement and occupational stressors and feelings of powerlessness due to ingrained masculine ideals (Siegrist, 2000). As men can experience profound social status loss with unemployment or underemployment amid feeling powerless to improve their situation, they commonly experience loss of control, helplessness, and depression (Andreeva et al., 2015; Tiggemann & Winefield, 1984). This in turn adversely affects men's masculine identity and self-worth. To masculinity threats such as involuntary job loss, many men react with maladaptive coping strategies rooted in traditional masculine role norms leading to substance misuse, aggressive, risky, or suicidal behavior (Bosson & Vandello, 2011; Eggenberger et al., 2021; Rice et al., 2019; Walther et al., 2021; Walther & Seidler, 2020).

Studies further emphasized that the level of endorsement of traditional masculinity ideology is important for the prediction of suicide in men. Men with high endorsement of traditional masculinity ideology were reported to be more than twice as likely to die by suicide as compared to men with low endorsement of traditional masculinity ideology (Coleman et al., 2020). Adherence to the traditional masculine role norm of self-reliance was further associated with increased risk for suicidal ideation (Pirkis et al., 2017). Conformity to traditional male role norms is generally associated with worse mental health outcomes and reduced help-seeking (Eggenberger et al., 2022; Wong et al., 2017) or delayed psychotherapy use (Eggenberger et al., 2021). Furthermore, high endorsement of traditional masculinity ideology can lead men to exhibit male-typical externalizing depression symptoms such as anger and aggression, substance misuse, and/or risk-taking, which can increase the risk for suicide (Rice et al., 2013; Walther et al., 2021; Walther & Seidler, 2020).

The event of the COVID-19 pandemic, the associated layoffs and global economic uncertainties, and society's unprecedented responses to the pandemic in the form of lockdowns or social distancing measures altogether may have provoked a shift in the conceptualization, perception, and expression of masculinity. While the suppression of fear and the expression of control are culturally associated with traditional expectations of masculinity in most countries around the world (Bridges et al., 2021), masculine provider, protector, and leader roles may have regained more attention and recognition in public perceptions of masculinity (Johnson & Williams, 2020; Wojnicka, 2022). In times of crisis, when many men seek orientation and security, greater adherence and conformity to traditional masculine role norms and a general reinforcement of traditional masculinity ideologies have been observed in the United States (Ruppner et al., 2021). During times of global insecurity, when many men experience status loss as with the COVID-19 pandemic, a reinforcement of traditional masculinity ideology combined with society's expectation that men fulfill these positively connoted masculine roles may additionally contribute to increased social pressure and suicidality in many men. Nevertheless, measures of endorsement of traditional masculinity ideology do not appear to be time variable and are to be considered as stable individual difference constructs (Borgogna & McDermott, 2022). Due to the relative time stability of traditional masculinity ideology, a

potential moderation of traditional masculinity ideology on the relationship between status loss due to the COVID-19 pandemic and suicide risk in men is hypothesized.

Investigating suicide risk in men in relation to COVID-19-related status loss and endorsement of traditional masculinity ideology emerges as highly relevant as many men report a deterioration of their financial situation, as well as their mental health with a high proportion reporting suicidal ideation due to the COVID-19 pandemic (Ogrodniczuk et al., 2021). In the present study, we examine the associations between loss of social status due to the COVID-19 pandemic and past-month and lifetime suicide attempts as well as past-2-week suicidal ideation in men. Further, we explore whether endorsement of traditional masculinity ideology moderates these associations. It is also of interest whether endorsement of traditional masculinity ideology is directly associated with suicide outcomes. We therefore formulated the following three study hypotheses, of which I and II present confirmatory hypotheses preregistered at Open Science Framework (OSF) and III presents an exploratory moderation hypothesis:

Hypothesis 1: Status loss due to COVID-19 is associated with increased risk of (a) past-month suicide attempt, (b) lifetime suicide attempt, (c) past-2-week suicidal ideation.

Hypothesis 2: Endorsement of traditional masculinity ideology is associated with increased risk of (a) past-month suicide attempt, (b) lifetime suicide attempt, (c) past-2-week suicidal ideation.

Hypothesis 3: Endorsement of traditional masculinity ideology moderates the association between status loss due to COVID-19 and increased risk for (a) past-month suicide attempt, (b) lifetime suicide attempt, (c) past-2-week suicidal ideation.

Method

Procedure and Samples

This preregistered anonymous, cross-sectional online survey was approved by the local ethics committee of the Faculty of Arts and Social Sciences of the University of Zurich (Authorization No. 21.2.4). According to the Open Science standards, a priori-defined study hypotheses, statistical analyses, and the study-specific data set can be retrieved from OSF (Walther & Grub, 2021; <https://osf.io/q4pw3>; registration: <https://doi.org/10.17605/OSF.IO/Q4PW3>). The study, entitled "Men's Mental Health in Times of COVID-19," examines men's mental health in relation to COVID-19-related stressors as previously described elsewhere (Walther et al., 2022). For the recruitment of male participants, the study was distributed through advertisements on social media platforms and the study's webpage. Advertisements on social media platforms were restricted to men of 18 years or older in the countries such as Germany, Switzerland, Austria, Lichtenstein, Luxembourg, and Belgium. All men, irrespective of mental health status, were eligible to participate. The goal was to recruit a large sample of men older than 18 years with sufficient German language skills to read and respond to the questionnaire in German language.

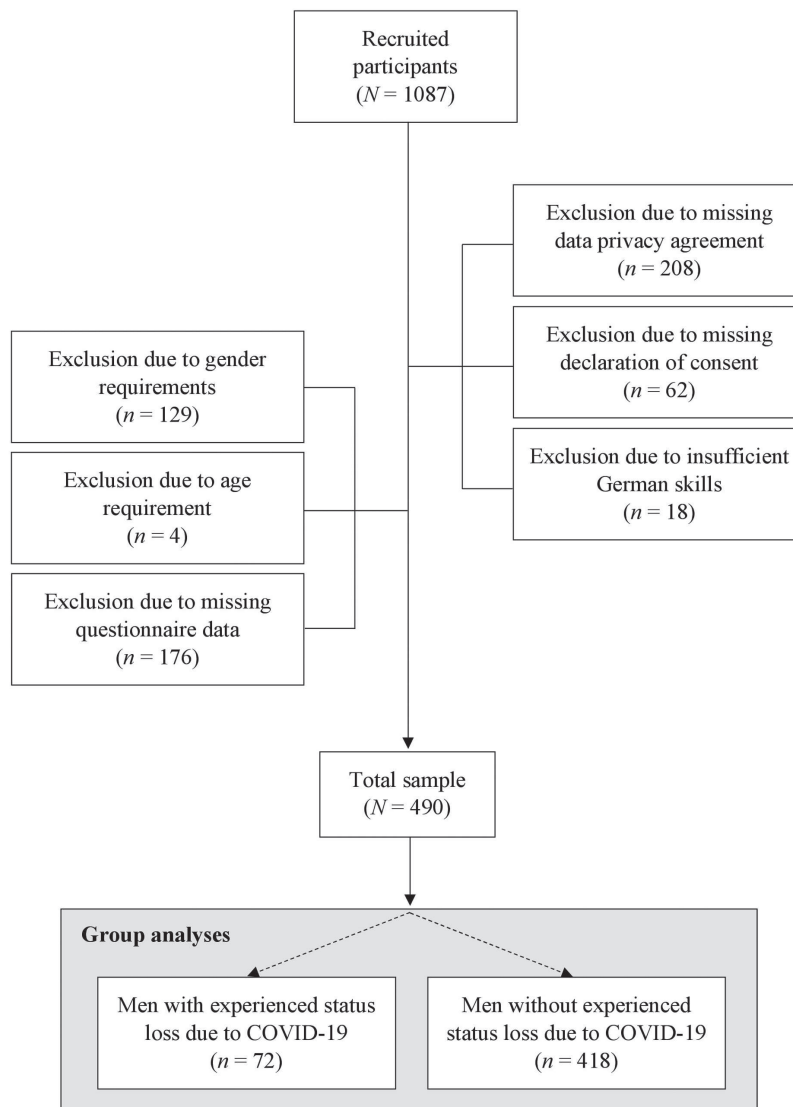
The survey period took place in the midst of the third wave of COVID-19 infections in German-speaking Europe. While in Germany between 6,000 and 29,000 daily new COVID-19 infections

were reported during this period, in Austria and Switzerland, the 7-day averages were around 2,000–3,000 new infections per day. By March 15, 2021, all countries were in the midst of the third wave of infection, and uncertainty was again high as to how severe this wave would become. Toward the end of April, it became apparent that the peak of the infection wave had been reached in all three countries. Thus, a relatively uniform picture of the current threat posed by the COVID-19 pandemic emerges for all participants, as it was a 1.5-month survey period from March 15, 2021 to April 28, 2021, representing a relatively short survey period, during which the pandemic situation remained steady.

During the recruitment period from March 15, 2021 to April 28, 2021, a total number of 1,087 people expressed interest in this study by visiting the starting page of the online questionnaire. A little more

than half of the initially interested participants ($n = 597$, 54.9%) were not included in the final analyses for one of the following reasons: data privacy agreement not provided, declaration of consent not provided, self-reported insufficient German language skills, gender requirements not fulfilled, age of minority, and/or incomplete data in the questionnaires. This resulted in a total number of 490 participants included in the current analyses. Figure 1 presents the participant flow diagram. Participants provided written informed consent at the beginning of the survey and agreed to the data privacy statement prior to answering sociodemographic questions, COVID-19-related questions, and a set of psychometric instruments. Completion time for the survey part included in this study was 20 min. However, participants then went on to participate in further online experiments, which are beyond the scope of this report.

Figure 1
Flow Diagram of the Inclusion and Exclusion Process



Note. *N/n* = number of participants.

Instruments

Sociodemographics, Social Status, and COVID-19-Related Questions

At the beginning of the online survey, participants answered sociodemographic questions assessing sufficiency of German skills, gender, age, nationality, relationship status, sexual orientation, and education. Further, the household's yearly gross income was assessed. To measure social status, participants were asked to estimate their subjective social status on the MacArthur Scale of Subjective Social Status in their own social environment (Euteneuer et al., 2015). The convergent and discriminant correlation analyses of the German-language version in the present study and previously reported (Euteneuer et al., 2015) are consistent with findings from the English-language context (Cundiff et al., 2013; Operario et al., 2004). Good 6-month test-retest reliability ($\rho = .62$) was previously reported in a longitudinal design (Operario et al., 2004).

Subsequently, men were asked whether they experienced a loss of social status due to the COVID-19 pandemic in a dichotomous form (yes/no). Assessing further difficulties caused by the COVID-19 pandemic in addition to social status loss included a set of questions asking about experienced financial losses, job insecurity, job loss, need to consult an employment office, existential threat, social contact loss, and physical contact loss.

Participants were further asked whether they had attempted suicide in the past month or whether they had ever attempted suicide with a dichotomous response option (yes/no). The two items directly asking about suicide attempts were used with the following format:

Have you attempted to commit suicide in the last month? Has there been a situation in the last 30 days where you deliberately and intentionally harmed yourself or put yourself in such danger that your life was in danger? Or would other people such as doctors or family members say that you have attempted suicide in the last 30 days?

Have you ever attempted to commit suicide in the past? Has there ever been a situation in the past where you deliberately and intentionally harmed yourself or put yourself in such danger that your life was in danger? Or would other people such as doctors or family members say that you have attempted suicide in the past?

Suicidal ideation during the past 2 weeks was assessed by a single item asking about how often one was bothered by "thoughts of preferring to be dead or wanting to inflict harm on oneself" over the last 2 weeks, which has previously been shown to be a valid assessment of suicidal ideation (Louzon et al., 2016; Na et al., 2018). This item was subsequently dichotomized into two categories comprised of participants either having had suicidal ideation (consisting of the three affirmative answers "several days," "more than half the days," and "nearly every day") or having not had suicidal ideation in the past 2 weeks (only consisting of the negative answer "not at all").

Further, participants were asked whether they were currently suffering from a mental disorder. Additionally, participants were asked to indicate whether they were currently undergoing psychotherapeutic treatment and whether they were currently taking psychopharmacological drugs.

Male Role Norm Inventory–Short Form

The Male Role Norm Inventory–Short Form (MRNI-SF; Levant et al., 2013) is a 21-item instrument that measures with a total score

composed of seven subscales the endorsement of traditional masculinity ideology. Participants are asked to indicate the extent to which they agree with traditional masculinity ideology statements on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). The seven subscales represent the following dimensions: restrictive emotionality, self-reliance through mechanical skills, negativity toward sexual minorities, avoidance of femininity, importance of sex, dominance, toughness. For the original English version of the MRNI-SF total score, Cronbach's α of $\alpha = .92$ for men has been reported (Levant et al., 2013), while for the German version as well good internal reliability was identified (Komlenac & Hochleitner, 2022). The Cronbach's α in the present study shows excellent reliability for the MRNI-SF total score of $\alpha = .94$.

Patient Health Questionnaire-9

The Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001) assesses nine prototypical symptoms of major depressive disorder specified by the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013). For each of the nine symptoms, participants rate how often those appeared within the preceding 2-week period on a 4-point Likert scale ranging from 0 = *not at all* to 3 = *almost every day*. The PHQ-9 item nine, asking about how often one was bothered by thoughts that one would be better off dead or hurting oneself over the last 2 weeks, was used to assess past-2-week suicidal ideation. The PHQ-9 is further used to make criteria-based diagnoses of depressive disorders with a cutoff ≥ 10 within research and clinical practice (Levis et al., 2020) and has shown to provide a reliable and valid measure of depression severity (Kroenke et al., 2001). A German version of the PHQ-9 was used in this study, which has been previously validated on a representative German-speaking sample (Cronbach's $\alpha = .89$; Martin et al., 2006). Cronbach's α in the present study shows good reliability with $\alpha = .90$.

Male Depression Risk Scale-22

The Male Depression Risk Scale-22 (MDRS-22; Rice et al., 2013) includes 22 items assessing male-typical externalizing depression symptoms within the preceding month, which are rated on an 8-point Likert scale ranging from 0 = *not at all* to 7 = *almost always*. The scale considers gender-specific externalizing symptoms of depression and assesses men's depression symptoms within the context of cultural norms related to masculinity. The six domains of the MDRS-22 include emotion suppression (i.e., "I bottled up my negative feelings"), drug use (i.e., "I used drugs to cope"), alcohol use (i.e., "I needed to have easy access to alcohol"), anger and aggression (i.e., "I overreacted to situations with aggressive behaviors"), somatic symptoms (i.e., "I had regular headaches"), and risk-taking (i.e., "I took unnecessary risks"). The MDRS-22 is further used to identify clinically relevant male depression syndrome based on a cutoff ≥ 51 . Internal consistency was shown to be good in the English-language version with a Cronbach's α of .92 for men (Rice et al., 2013). In the present study, the validated German version of the MDRS-22 was used showing adequate internal consistency (Walther et al., 2021). Cronbach's α in the present study with $\alpha = .88$ suggested good internal consistency.

Statistical Analysis

All computations and analyses were conducted in the R software environment (R Core Team, 2020) with the additional packages “car” (Fox & Sanford, 2019; used for variance inflation factors), “ggplot2” (Wickham, 2016; used for visualizations), “psych” (Revelle, 2020; used for calculating internal consistencies and effect sizes), and “rcompanion” (Mangiafico, 2021; used for maximum-likelihood estimations of logistic regression model indices). All logistic regression analyses were controlled for the participants’ age, income, educational level, and sexual orientation as covariates. Furthermore, an α -level of $\alpha = .05$ was used consistently throughout all analyses when testing for significant results. Lastly, statistical assumptions for the analyses described in the following were tested using Levene’s test for equal variances (M. B. Brown & Forsythe, 1974), Fox and Monette’s (Fox & Monette, 1992) generalized variance inflation factor to assess collinearity of independent variables, and Cook’s distance (Cook, 1977) to detect highly influential points in the logistic regression models.

Sample characteristics were determined by calculating summary statistics for the relevant variables. Two-sided *t* tests and two-sided chi-square tests were used to test for group differences between the two subgroups obtained by splitting the sample into men who reported having experienced status loss due to the COVID-19 pandemic and men who reported not having experienced status loss due to the pandemic. The three suicide outcome measures were analyzed as separate dichotomous measures (past-month suicide attempt, lifetime suicide attempt, past-2-week suicidal ideation). Individual logistic regression analyses were conducted to test the association of these three suicide outcomes with experienced status loss (Model 1), traditional masculinity ideologies (MRNI-SF; Model 2), experienced status loss and traditional masculinity ideologies (MRNI-SF) including their interaction (MRNI-SF as moderator; Model 3), and experienced status loss and traditional masculinity ideologies (MRNI-SF) including their interaction (MRNI-SF as moderator) as well as prototypical and male-typical externalizing depression symptoms (PHQ-9 and MDRS-22; Model 4). For Model 4, likelihood-ratio tests were used to assess whether the use of both depression questionnaires would provide a better model fit compared to a more parsimonious approach of using just one.

To test the moderation hypothesis, an interaction term (Status Loss \times MRNI-SF) was created and introduced into the logistic regression models. We followed the regression-based approach proposed by Hayes (2013) to assess potential conditional relations between status loss as the dichotomous independent variable, endorsement of traditional masculinity ideology as the continuous moderator variable, and the three dichotomous coded suicide outcome variables. Effect sizes were calculated in the form of standardized mean differences (Cohen’s *d*) and standardized odds ratios, following the Agresti (2007) method, and interpreted according to current guidelines (Chen et al., 2010).

Results

Descriptive Statistics and Group Differences Stratified by Status Loss

A total of 490 male respondents ranging in age from 18 to 68 years old ($M = 25.7$; $SD = 9.7$) completed the survey questionnaire. As shown in Table 1, 14.7% of men ($n = 72$) indicated having

experienced status loss due to the COVID-19 pandemic. A total of 20 men (4.1%) reported past-month suicide attempt, while 114 (23.3%) reported having suffered a suicide attempt in their past. Suicidal ideation during the past 2 weeks was reported by 240 men (49.0%). Further description of the sample is provided in Table 1 or elsewhere (Walther et al., 2022).

Significant group differences emerged when comparing men’s status loss (Figure 2, Supplemental Table S1). Regarding suicide attempts (past-month/lifetime) and suicidal ideation (past 2 weeks; Figure 2A), significantly more men who have experienced status loss attempted suicide in the past month (11.1%) and in their lifetime (33.3%) as compared to men who have not experienced status loss (suicide attempt past-month: 2.9%, $OR = 4.23$ [1.66, 10.75], medium effect; suicide attempt lifetime: 21.5%, $OR = 1.82$ [1.06, 3.14], small effect). Men who have experienced status loss were also significantly more likely to report past-2-week suicidal ideation (65.3%) compared to men who have not experienced status loss (46.2%, $OR = 2.19$ [1.30, 3.69], small effect).

Regarding endorsement of traditional masculinity ideology and depression symptoms (Figure 2B), men who have experienced status loss due to the COVID-19 pandemic showed significantly stronger endorsement of traditional masculinity ideology (MRNI-SF, $d = 0.59$ [0.34, 0.85], medium effect), significantly higher male-typical externalizing depression symptoms (MDRS-22, $d = 0.84$ [0.58, 1.10], large effect), and significantly higher prototypical depression symptoms (PHQ-9, $d = 0.63$ [0.37, 0.88], medium effect) as compared to men who have not experienced status loss.

Logistic Regression Analysis Examining Suicide Attempts (Past-Month/Lifetime) and Suicidal Ideation (Past 2 Weeks)

Logistic regression models investigating the three suicide outcomes with experienced status loss, including sociodemographic variables as covariates (Model 1), showed status loss to be significantly associated with all three outcomes (Table 2). Namely, men who experienced status loss due to COVID-19 were significantly more likely to have attempted suicide in the past month ($OR = 4.48$ [1.72, 11.67], medium effect) and in their lifetime ($OR = 1.85$ [1.05, 3.25], small effect), as well as being significantly more likely to have had suicidal ideation in the past 2 weeks ($OR = 2.47$ [1.42, 4.28], small effect).

On the other hand, logistic regression models including endorsement of traditional masculinity ideologies and sociodemographic covariates as independent variables and the three suicide outcomes (Model 2) revealed no significant association between traditional masculinity and past-month suicide attempts ($OR = 1.25$ [0.78, 1.99]), lifetime suicide attempts ($OR = 1.08$ [0.86, 1.36]), nor suicidal ideation during the past 2 weeks ($OR = 0.99$ [0.82, 1.21]; Table 3).

Moderation Analysis Examining Conditional Relations Between Status Loss, Traditional Masculinity, Suicide Attempts (Past-Month/Lifetime), and Suicidal Ideation (Past 2 Weeks)

In a first part of the moderation analysis, logistic regression models were used to examine the association of the three suicide outcomes with experienced status loss, endorsement of traditional masculinity ideologies (MRNI-SF), their interaction (Status Loss \times

Table 1
Descriptive Statistics for the Sample

Variable	Total (N = 490)		Status loss (n = 72)		No status loss (n = 418)		t (df)	χ^2 (df)	p value
	n (%)	M (SD)	n (%)	M (SD)	n (%)	M (SD)			
Age		25.7 (9.8)		25.7 (8.6)		25.7 (10.0)	0.04 (448)		.971
Nationality								6.82 (6)	.338
Swiss	71 (14.5)		10 (13.9)		61 (14.6)				
German	358 (73.1)		52 (72.2)		306 (73.2)				
Austrian	43 (8.8)		7 (9.7)		36 (8.6)				
Luxembourg	4 (0.8)		0 (0)		4 (1.0)				
Liechtenstein	1 (0.2)		0 (0)		1 (0.2)				
Belgian	1 (0.2)		1 (1.4)		0 (0)				
Other	12 (2.4)		2 (2.8)		10 (2.4)				
Sexual orientation								3.21 (4)	.524
Heterosexual-identified	361 (73.7)		55 (76.4)		306 (73.2)				
Gay/Lesbian-identified	39 (8.0)		3 (4.2)		36 (8.6)				
Bisexual-identified	67 (13.7)		12 (16.7)		55 (13.2)				
Asexual-identified	5 (1.0)		0 (0)		5 (1.2)				
Other	18 (3.7)		2 (2.8)		16 (3.8)				
Marital status								0.28 (2)	.868
Single	311 (63.5)		46 (63.9)		265 (63.4)				
In a relationship	168 (34.3)		25 (34.7)		143 (34.2)				
Separated after permanent relationship	11 (2.2)		1 (1.4)		10 (2.4)				
Education								2.02 (3)	.568
None completed	10 (2.0)		0 (0)		10 (2.4)				
Secondary education	348 (71.0)		53 (73.6)		295 (70.6)				
Tertiary education	106 (21.6)		16 (22.2)		90 (21.5)				
Other	26 (5.3)		3 (4.2)		23 (5.5)				
Yearly household income (in CHF)								9.05 (2)	.011*
<25,000	233 (47.6)		46 (63.9)		187 (44.7)				
25,000–50,000	92 (18.8)		9 (12.5)		83 (19.9)				
>50,000	165 (33.7)		17 (23.6)		148 (35.4)				
Subjective social status								2.15 (1)	.142
High	339 (69.2)		44 (61.1)		295 (70.6)				
Low	151 (30.8)		28 (38.9)		123 (29.4)				
COVID-19 infection ^a	34 (6.9)		5 (6.9)		29 (6.9)			1 (1)	1
Due to COVID-19 pandemic ^a									
Financial problems	100 (20.4)		42 (58.3)		58 (13.9)			72.02 (1)	<.001***
Job insecurity	112 (22.9)		43 (59.7)		69 (16.5)			62.62 (1)	<.001***
Job loss	41 (8.4)		21 (29.2)		20 (4.8)			44.50 (1)	<.001***
RAV	34 (6.9)		19 (26.4)		15 (3.6)			45.98 (1)	<.001***
Existential threat	95 (19.4)		37 (51.4)		58 (13.9)			52.93 (1)	<.001***
Suicide attempt ^a									
Past month	20 (4.1)		8 (11.1)		12 (2.9)			8.65 (1)	.003**
Lifetime	114 (23.3)		24 (33.3)		90 (21.5)			4.15 (1)	.042*
Suicidal ideation ^a	240 (49.0)		47 (65.3)		193 (46.2)			8.22 (1)	.004**
Psychological disorder ^a	117 (23.9)		20 (27.8)		97 (23.2)			9.48 (1)	.490
Psychotherapy ^a	95 (19.4)		12 (16.7)		83 (19.9)			0.22 (1)	.638
Medication ^a	64 (13.1)		7 (9.7)		57 (13.6)			0.52 (1)	.471
Depression cutoff									
PHQ-9 (≥10)	322 (65.7)		61 (84.7)		261 (62.4)			12.56 (1)	<.001***
MDRS-22 (≥51)	67 (13.7)		22 (30.6)		45 (10.8)			18.74 (1)	<.001***
MRNI-SF		45.6 (21.4)		56.2 (26.2)		43.8 (20.0)	3.83 (85.7)		<.001***
PHQ-9		12.6 (6.6)		16.0 (6.4)		12.0 (6.5)	4.90 (488)		<.001***
MDRS-22		29.2 (20.6)		43.3 (24.9)		26.8 (18.7)	5.38 (85.4)		<.001***

Note. N/n = number of participants; t = t statistic; χ^2 = chi-square test statistic; CHF = Swiss francs; RAV = Regional employment center; MRNI-SF = Male Role Norms Inventory–Short Form; PHQ-9 = Patient Health Questionnaire-9; MDRS-22 = Male Depression Risk Scale-22. Subjective social status was dichotomized with a median split. Significant differences between groups are highlighted in bold. Percentages, standard deviations, and degrees of freedom are presented in italics.

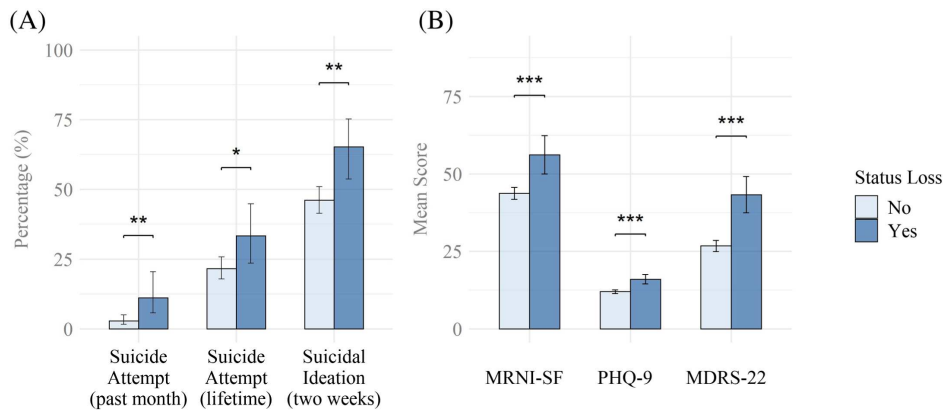
^a Assessed in self-report.

* p < .05. ** p < .01. *** p < .001.

MRNI-SF), and sociodemographic covariates (Model 3). While experienced status loss was significantly associated with an increased likelihood for past-month suicide attempts (OR = 4.01 [1.35, 11.96], medium effect) and suicidal ideation in the past 2

weeks (OR = 2.30 [1.27, 4.14], small effect), endorsement of traditional masculinity ideologies and the interaction term did not yield a significant association with past-month suicide attempts or suicidal ideation. In this model, whether status loss nor endorsement

Figure 2
Group Differences Between Men With and Without Experienced Status Loss



Note. (A) Group differences depending on experienced status loss for past-month and lifetime suicide attempts and past-2-week suicidal ideation. (B) Group differences depending on experienced status loss for MRNI-SF, PHQ-9, MDRS-22. MRNI-SF = Male Role Norms Inventory–Short Form; PHQ-9 = Patient Health Questionnaire-9; MDRS-22 = Male Depression Risk Scale-22. See the online article for the color version of this figure. * $p < .05$. ** $p < .01$. *** $p < .001$.

of traditional masculinity ideologies nor their interaction was associated with lifetime suicide attempts (Table 4).

In a second part of the moderation analysis, the same models (Model 3) were extended to also include male-typical externalizing (MDRS-22) and prototypical (PHQ-9) depression symptoms (Model 4). Results showed that men with increased male-typical externalizing ($OR = 2.18$ [1.31, 3.62], small effect) as well as prototypical ($OR = 2.41$ [1.13, 5.12], small effect) depression symptoms had an increased likelihood for past-month suicide

attempts. Additionally, higher values in the interaction term between status loss and endorsement of traditional masculinity ideologies (Status Loss \times MRNI-SF) were also significantly associated with an increased likelihood for past-month suicide attempts ($OR = 3.27$ [1.16, 9.27], small effect). While increased male-typical externalizing depression symptoms were only significantly associated with higher suicidal ideation ($OR = 1.49$ [1.04, 2.12], small effect), increased prototypical depression symptoms were significantly associated with higher suicidal ideation ($OR = 6.26$ [4.15, 9.43],

Table 2
Logistic Regression Analyses With Status Loss and Covariates

Variable	β^a (SE^a)	OR^a	OR_{raw}	p value	p adj.
(A) Outcome: suicide attempt (past month)					
Status loss	1.50 (0.49)	4.48	4.48	.002**	.011*
Age	-0.16 (0.35)	0.86	0.98	.656	.681
Income	-0.60 (0.64)	0.55	1.00	.341	.681
Education	-1.62 (1.08)	0.20	0.20	.133	.532
Sexual orientation	0.72 (0.48)	2.06	2.06	.136	.532
Omnibus statistics: $\chi^2(5) = 16.71$, p value = .005, $R^2 = 11.6\%$, AIC = 162.4, BIC = 187.6					
(B) Outcome: suicide attempt (lifetime)					
Status loss	0.61 (0.29)	1.85	1.85	.034*	.101
Age	-0.22 (0.15)	0.80	0.98	.146	.292
Income	-0.89 (0.30)	0.41	1.00	.003**	.011*
Education	-0.37 (0.32)	0.69	0.69	.255	.292
Sexual orientation	0.77 (0.24)	2.16	2.16	.001***	.006**
Omnibus statistics: $\chi^2(5) = 36.02$, p value < .001, $R^2 = 10.7\%$, AIC = 507.6, BIC = 532.8					
(C) Outcome: suicidal ideation					
Status loss	0.90 (0.28)	2.47	2.47	.001**	.005**
Age	-0.26 (0.11)	0.77	0.97	.024*	.049*
Income	-0.28 (0.17)	0.75	1.00	.104	.104
Education	-0.66 (0.26)	0.52	0.52	.011*	.034*
Sexual orientation	0.88 (0.22)	2.42	2.42	<.001***	<.001***
Omnibus statistics: $\chi^2(5) = 51.36$, p value < .001, $R^2 = 13.3\%$, AIC = 639.7, BIC = 664.9					

Note. SE = standard error; OR_{raw} = unstandardized odds ratio; p adj. = p values adjusted for multiple testing using the Holm method; R^2 = Nagelkerke's (Cragg and Uhler) pseudo- R^2 ; AIC = Akaike information criterion; BIC = Bayesian information criterion. Significant associations are presented in bold. Standard errors are presented in italics.

^a Displayed coefficients are z standardized.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3
Logistic Regression Analyses With Endorsement of TMI and Covariates

Variable	β^a (<i>SE</i> ^a)	<i>OR</i> ^a	<i>OR</i> _{raw}	<i>p</i> value	<i>p</i> adj.
(A) Outcome: suicide attempt (past month)					
MRNI-SF	0.22 (0.24)	1.25	1.01	.361	.751
Age	-0.15 (0.33)	0.86	0.98	.654	.751
Income	-0.73 (0.63)	0.48	1.00	.250	.751
Education	-1.54 (1.07)	0.21	0.21	.149	.638
Sexual orientation	0.78 (0.51)	2.17	2.17	.128	.638
Omnibus statistics: $\chi^2(5) = 9.18$, <i>p</i> value = .102, $R^2 = 6.4\%$, AIC = 169.9, BIC = 195.1					
(B) Outcome: suicide attempt (lifetime)					
MRNI-SF	0.08 (0.12)	1.08	1.00	.521	.556
Age	-0.22 (0.15)	0.80	0.98	.143	.430
Income	-0.94 (0.30)	0.39	1.00	.002**	.007**
Education	-0.35 (0.32)	0.70	0.70	.278	.556
Sexual orientation	0.79 (0.25)	2.20	2.20	.001**	.007**
Omnibus statistics: $\chi^2(5) = 32.09$, <i>p</i> value < .001, $R^2 = 9.6\%$, AIC = 511.5, BIC = 536.7					
(C) Outcome: suicidal ideation					
MRNI-SF	-0.01 (0.10)	0.99	1.00	.943	.943
Age	-0.24 (0.11)	0.78	0.97	.030*	.091
Income	-0.33 (0.19)	0.72	1.00	.090	.179
Education	-0.64 (0.26)	0.53	0.53	.013*	.050
Sexual orientation	0.83 (0.23)	2.31	2.31	<.001***	.001**
Omnibus statistics: $\chi^2(5) = 40.46$, <i>p</i> value < .001, $R^2 = 10.6\%$, AIC = 650.6, BIC = 675.8					

Note. TMI = traditional masculinity ideologies; *SE* = standard error; *OR*_{raw} = unstandardized odds ratio; *p* adj. = *p* values adjusted for multiple testing using the Holm method; R^2 = Nagelkerke's (Cragg and Uhler) pseudo- R^2 ; MRNI-SF = Male Role Norms Inventory-Short Form. Significant associations are highlighted in bold. Standard errors are presented in italics.

^a Displayed coefficients are *z* standardized.

* *p* < .05. ** *p* < .01. *** *p* < .001.

medium effect) and more lifetime suicide attempts ($OR = 1.80$ [1.31, 2.47], small effect; Table 5).

Last, using the two depression questionnaires individually, either just prototypical (PHQ-9) or just male-typical externalizing (MDRS-22) symptoms consistently provided a significantly worse model fit compared to using both questionnaires simultaneously (Supplemental Tables S2 and S3).

Discussion

Summary of Results

The present study aimed to examine the association between experienced status loss due to the COVID-19 pandemic, endorsement of traditional masculinity ideology and past-month suicide attempt, lifetime suicide attempt, and past-2-week suicidal ideation among men. Furthermore, a potential moderating effect of endorsement of traditional masculinity ideology on the relationship between experienced status loss and suicide outcomes was investigated. The 72 men (14.7%), who experienced status loss due to the COVID-19 pandemic as compared to those who did not, were significantly more likely to exhibit past-month and lifetime suicide attempts as well as past-2-week suicidal ideation. Effect sizes suggest small-to-medium effects for these associations (Chen et al., 2010). Men having experienced status loss due to the pandemic also showed increased endorsement of traditional masculinity ideology (medium effect), as well as higher levels in prototypical and male-typical externalizing depression symptoms with medium-to-large effect sizes (Chen et al., 2010).

Providing partial support for the study hypotheses, logistic regression analyses revealed that status loss, but not endorsement of traditional masculinity ideology, was significantly associated

with suicide outcomes, leading to confirmation of Hypothesis 1a–c and rejection of Hypothesis 2a–c. However, when introducing prototypical and male-typical externalizing depression symptoms into the models, the associations between status loss and suicide outcomes faded. Besides both depression symptomatology measures, the interaction term of status loss and endorsement of traditional masculinity ideology emerged as significantly associated with past-month suicide attempts in the final model, revealing a significant moderation effect and confirming Hypothesis 3a. This suggests that in men with higher endorsement of traditional masculinity ideology, the association between status loss and past-month suicide attempts is elevated. For lifetime suicide attempts and past-2-week suicidal ideation only, prototypical and male-typical externalizing depression symptoms were significantly associated, leading to rejection of Hypothesis 3b and c. Importantly, when applying a correction for multiple testing to the final models, only the strongest independent variables remained significant, namely male-typical externalizing depression symptomatology for past-month suicide attempt and prototypical depression symptomatology for lifetime suicide attempt and past-2-week suicidal ideation.

Integration of Findings

The present study is the first study to examine the association between COVID-19 pandemic-related status loss and suicide risk specifically in men, taking into account not only endorsement of traditional masculinity ideology as potential moderator but also including prototypical and specifically male-typical externalizing depression symptoms in the models. Several COVID-19-related experiences, such as general distress, fear of physical harm, or effects of social distancing policies, have been positively associated

Table 4*Logistic Regression Analyses With Status Loss, Endorsement of TMI, Their Interaction, and Covariates*

Variable	β^a (<i>SE</i> ^a)	<i>OR</i> ^a	<i>OR</i> _{raw}	<i>p</i> value	<i>p</i> adj.
(A) Outcome: suicide attempt (past month)					
Status loss	1.39 (<i>0.56</i>)	4.01	0.82	.013*	.089
MRNI-SF	-0.32 (<i>0.41</i>)	0.72	0.98	.432	1
Status Loss \times MRNI-SF	0.75 (<i>0.51</i>)	2.11	1.03	.142	.741
Age	-0.24 (<i>0.37</i>)	0.79	0.98	.522	1
Income	-0.60 (<i>0.64</i>)	0.55	1.00	.343	1
Education	-1.66 (<i>1.08</i>)	0.19	0.19	.123	.741
Sexual orientation	0.79 (<i>0.53</i>)	2.20	2.20	.133	.741
Omnibus statistics: $\chi^2(7) = 19.21$, <i>p</i> value = .008, $R^2 = 13.3\%$, AIC = 163.9, BIC = 197.5					
(B) Outcome: suicide attempt (lifetime)					
Status loss	0.49 (<i>0.31</i>)	1.63	0.78	.115	.577
MRNI-SF	-0.07 (<i>0.15</i>)	0.93	1.00	.608	.608
Status Loss \times MRNI-SF	0.35 (<i>0.26</i>)	1.42	1.02	.171	.577
Age	-0.24 (<i>0.16</i>)	0.79	0.98	.124	.577
Income	-0.90 (<i>0.30</i>)	0.41	1.00	.003**	.017*
Education	-0.38 (<i>0.33</i>)	0.68	0.68	.243	.577
Sexual orientation	0.78 (<i>0.25</i>)	2.18	2.18	.002**	.011*
Omnibus statistics: $\chi^2(7) = 37.94$, <i>p</i> value < .001, $R^2 = 11.3\%$, AIC = 509.7, BIC = 543.2					
(C) Outcome: suicidal ideation					
Status loss	0.83 (<i>0.30</i>)	2.30	1.22	.006**	.035*
MRNI-SF	-0.15 (<i>0.12</i>)	0.86	0.99	.198	.396
Status Loss \times MRNI-SF	0.30 (<i>0.24</i>)	1.35	1.01	.216	.396
Age	-0.26 (<i>0.12</i>)	0.78	0.97	.027*	.109
Income	-0.28 (<i>0.18</i>)	0.76	1.00	.115	.346
Education	-0.68 (<i>0.26</i>)	0.51	0.51	.009**	.047*
Sexual orientation	0.83 (<i>0.23</i>)	2.29	2.29	<.001***	.002**
Omnibus statistics: $\chi^2(7) = 53.57$, <i>p</i> value < .001, $R^2 = 13.8\%$, AIC = 641.5, BIC = 675.1					

Note. TMI = traditional masculinity ideologies; *SE* = standard error; *OR*_{raw} = unstandardized odds ratio; *p* adj. = *p* values adjusted for multiple testing using the Holm method; R^2 = Nagelkerke's (Cragg and Uhler) pseudo- R^2 ; MRNI-SF = Male Role Norms Inventory-Short Form. Significant associations are highlighted in bold. Standard errors are presented in italics.

^a Displayed coefficients are *z* standardized.

* *p* < .05. ** *p* < .01. *** *p* < .001.

with past-month suicidal ideation and suicide attempts (Ammerman et al., 2021). Furthermore, recent job loss or income loss due to the COVID-19 pandemic were related to poor mental health (Griffiths et al., 2021; Hadar-Shoval et al., 2022; Hertz-Palmor et al., 2021) and suicide risk (Elbogen et al., 2021; Gratz et al., 2020). However, the relation of subjectively experienced loss of social status, identified as the most important nonpecuniary consequence of job loss (Creed & Macintyre, 2001; Paul & Batinic, 2010), with past-month suicide attempt, lifetime suicide attempt, and past-2-week suicidal ideation in an exclusively male sample has not been investigated.

With 14.7% of men in the current sample having experienced status loss due to COVID-19, the socioeconomic toll of the pandemic on the general population is reflected. Our results corroborate reports showing high rates of recent job loss due to COVID-19 of 11% (Gratz et al., 2020) and experienced income loss in 19% (Hertz-Palmor et al., 2021). However, the studies by Gratz et al. (2020) and Hertz-Palmor et al. (2021) were conducted in the United States and Israel using mixed-gender samples and 1 year earlier than the data collection of the present study, which was carried out in German-speaking countries of Europe. This explains the lower percentage of men with a job loss due to the COVID-19 pandemic (8.4%) and the higher percentage of men experiencing financial problems due to the COVID-19 pandemic (20.4%) in the current sample. Furthermore, the prevalence of past-month suicide attempt of 4.1% in the present sample confirms results of a prior study of a past-month suicide

attempt prevalence of 4.9% in a mixed-gender sample (Ammerman et al., 2021). By contrast, in a male sample surveyed prior to the pandemic outbreak, a past-month suicide attempt prevalence of 1.3% was observed (Rice et al., 2019), highlighting the increased suicide risk due to the COVID-19 pandemic.

The identified 4.2-fold increased risk of reporting a past-month suicide attempt, 1.8-fold increased risk of reporting lifetime suicide attempt, and 2.4-fold increased risk of exhibiting past-2-week suicidal ideation in men experiencing loss of social status due to the COVID-19 pandemic underline the pivotal role of social status loss in men with regard to suicide risk. For many men, in defining one's masculine self-concept against a set of rigid ideals (e.g., dominance, pursuit of status or primacy of work), the impact of losing one's job and perceived loss of social status could understandably threaten their self-worth (Dahl & Cook, 2020; Vandello & Bosson, 2013).

The finding of significantly higher endorsement of traditional masculinity ideology in men who have experienced status loss points to an inflation of masculine traits and a reinforcement of endorsement of traditional masculinity ideology. The model of masculinity as a precarious self-concept (Dahl & Cook, 2020) states that men may adjust or distort their thoughts, attitudes, or beliefs in response to masculinity challenges to feel more masculine. Loss of social status, as a masculinity challenge, may threaten a man's masculinity self-concept. In response, men may stabilize their masculinity self-concept and self-worth with psychological defense

Table 5

Logistic Regression Analyses With Status Loss, Endorsement of TMI, Their Interaction, Depression Symptoms, and Covariates

Variable	β^a (<i>SE</i> ^b)	<i>OR</i> ^a	<i>OR</i> _{raw}	<i>p</i> value	<i>p</i> adj.
(A) Outcome: suicide attempt (past month)					
Status loss	0.13 (0.67)	1.14	0.09	.842	1
MRNI-SF	-0.48 (0.38)	0.62	0.98	.203	1
Status Loss × MRNI-SF	1.19 (0.53)	3.27	1.06	.026*	.180
PHQ-9	0.88 (0.38)	2.41	1.14	.023*	.180
MDRS-22	0.78 (0.26)	2.18	1.04	.003**	.024*
Age	-0.09 (0.42)	0.91	0.99	.825	1
Income	-0.40 (0.71)	0.67	1.00	.573	1
Education	-0.80 (1.14)	0.45	0.45	.480	1
Sexual orientation	0.48 (0.58)	1.61	1.61	.413	1
Omnibus statistics: $\chi^2(9) = 52.23$, <i>p</i> value < .001, <i>R</i> ² = 35.0%, AIC = 134.9, BIC = 176.8					
(B) Outcome: suicide attempt (lifetime)					
Status loss	-0.05 (0.35)	0.95	0.42	.884	1
MRNI-SF	-0.10 (0.15)	0.90	0.99	.508	1
Status Loss × MRNI-SF	0.39 (0.27)	1.48	1.02	.153	.766
PHQ-9	0.59 (0.16)	1.80	1.09	<.001***	.003**
MDRS-22	0.29 (0.15)	1.33	1.01	.050	.302
Age	-0.11 (0.16)	0.90	0.99	.503	1
Income	-0.84 (0.31)	0.43	1.00	.007**	.058
Education	-0.01 (0.35)	0.99	0.99	.967	1
Sexual orientation	0.58 (0.26)	1.78	1.78	.028*	.194
Omnibus statistics: $\chi^2(9) = 77.30$, <i>p</i> value < .001, <i>R</i> ² = 22.0%, AIC = 474.3, BIC = 516.3					
(C) Outcome: suicidal ideation					
Status loss	-0.03 (0.37)	0.97	0.46	.930	1
MRNI-SF	-0.22 (0.16)	0.80	0.99	.168	1
Status Loss × MRNI-SF	0.35 (0.30)	1.42	1.02	.244	1
PHQ-9	1.83 (0.21)	6.26	1.32	<.001***	<.001***
MDRS-22	0.40 (0.18)	1.49	1.02	.029*	.229
Age	0.05 (0.17)	1.05	1.00	.777	1
Income	-0.11 (0.20)	0.90	1.00	.601	1
Education	-0.22 (0.33)	0.80	0.80	.501	1
Sexual orientation	0.57 (0.29)	1.77	1.77	.050	.350
Omnibus statistics: $\chi^2(9) = 256.4$, <i>p</i> value < .001, <i>R</i> ² = 54.3%, AIC = 442.7, BIC = 484.6					

Note. TMI = traditional masculinity ideologies; *SE* = standard error; *OR*_{raw} = unstandardized odds ratio; *p* adj. = *p* values adjusted for multiple testing using the Holm method; *R*² = Nagelkerke's (Cragg and Uhler) pseudo-*R*²; MRNI-SF = Male Role Norms Inventory–Short Form; PHQ-9 = Patient Health Questionnaire-9; MDRS-22 = Male Depression Risk Scale-22. Significant associations are highlighted in bold. Standard errors are presented in italics.

^a Displayed coefficients are *z* standardized.

* *p* < .05. ** *p* < .01. *** *p* < .001.

mechanisms such as inflating their sense of masculine characteristics and attitudes (Cohen & Sherman, 2014; Dahl & Cook, 2020; Sherman & Cohen, 2006). Concordantly, an experimental study by Willer et al. (2013) found that men responded to challenges to their masculinity by inflating their sense of conformity to stereotypically masculine norms. After their masculinity was challenged, men were more likely to report stereotypically masculine attitudes such as greater support for war or more general homophobic attitudes and greater interest in purchasing an all-terrain vehicle (SUV). Further work showed that men strongly endorsing strict masculinity norms experienced greater sensitivity to threats regarding their masculine identity (Bock & Brown, 2021; Wong et al., 2020). Based on Dahl & Cook's (2020) theoretical framework of masculinity as a precarious self-concept and the supporting experimental findings, it is conceivable that status loss poses a long-term masculinity challenge that may lead men who experienced such status loss to more strongly endorse traditional masculinity ideologies in order to restabilize their masculinity self-concept and self-worth.

Opposed to our hypotheses, the present study shows no association between endorsement of traditional masculinity ideology and

past-month or lifetime suicide attempt nor with suicidal ideation in the past 2 weeks. One possible explanation for these findings may lie in the limitations of using self-report questionnaires. Consistent with this, a recent longitudinal study conducted over a 19-year period showed that men with high traditional masculinity were 2.4 times more likely to die by suicide compared with men with low traditional masculinity, but 1.5 times less likely to report suicidal ideation, while they did not differ with respect to suicide attempts (Coleman et al., 2020). This illustrates that self-report studies in this area of research may be subject to reporting bias since compared to women, men in general and men with strong endorsement of traditional masculinity ideology in particular may report lower levels of internalizing mental health symptoms such as depressive mood or suicidal ideation (Eggenberger et al., 2022; Mirowsky & Ross, 1995; Spindelov & Seidler, 2020; Walther et al., 2021). Thus, the combination of subjective with objective outcome measures such as survival rate is preferable. Therefore, self-report measures can only be considered an approximation of the true severity of psychological symptoms in men, and objective outcome measures such as survival rate provide an important avenue for studying the

relationship between endorsement of traditional masculinity ideology and suicide risk (Coleman, 2015; Coleman et al., 2020).

As expected, and previously shown (Rice et al., 2019; Walther et al., 2021), both depression measures were strongly associated with suicide outcomes as depression is a prime risk factor for suicide (Appleby et al., 2016). Interestingly, once both depression measures for prototypical and male-typical externalizing depression severity were introduced into the regression models, status loss was no longer significantly associated with the suicide outcomes. This may be because status loss, but not status per se, is closely related to depression, as men who experience status loss often measured in the form of job loss subsequently exhibit a dramatically increased risk for developing depressive disorders (Dohrenwend et al., 1992; Riumallo-Herl et al., 2014; Stolove et al., 2017). Rodent research, which has examined in much greater detail the role of status loss in the context of social hierarchies, has shown that agonistic encounters between males lead to the development of a hierarchical structure in which the superior male subdues the weaker male, which then exhibits several depression-like behaviors (Biselli et al., 2021; Willner et al., 1995). The chronic social defeat stress model is therefore an established murine model of depression, particularly in male rodents, which is actually an extreme form of induction of continuous status loss and low self-esteem (Gururajan et al., 2019; Larrieu & Sandi, 2018; Willner et al., 1995). Hence, we argue that men having experienced status loss may similarly to subordinate rodents showing submissive and depression-like behavior (Biselli et al., 2021), exhibit low self-esteem, depressive mood, anhedonia, and an increased risk for suicide. The link between status loss and negative outcomes such as increased risk for suicide is attributable to reduced access to resources and negative self-evaluations (Brown & Mankowski, 1993; Komori et al., 2019). The negative self-evaluations are in turn caused by unfavorable comparisons between oneself and others who have not suffered a loss of status and are now considered to be higher ranked individuals (Brewin & Furnham, 1986).

Therefore, it is quite conceivable that the depression measures explain a significant proportion of variance in the suicide constructs which was previously explained by status loss. Interestingly, when the two depression measures are included in the regression models, the interaction of status loss and endorsement of traditional masculinity ideology is able to explain an additional, significant proportion of the variance in past-month suicide attempts. Because neither status loss nor endorsement of traditional masculinity ideology by themselves was associated with past-month suicide attempts, complete moderation was observed in the most extensive model assessing past-month suicide attempts. A complete moderation in this model indicates that, after taking the relevant sociodemographic covariates and depression symptomatology into account, status loss may be an additional factor associated with past-month suicide attempts in men who simultaneously exhibit strong endorsement of traditional masculinity ideologies. Since this model also provided the best fit indices of all models tested, it can be concluded that not just prototypical and male-typical externalizing depression symptoms explain a significant proportion of the variance in past-month suicide attempts, but that the interaction between status loss and endorsement of traditional masculinity ideology may play a further important role.

Of note, direct model comparisons using likelihood-ratio tests indicated that including both depression measures (prototypical and male-typical externalizing depression symptoms together) would

consistently provide a significantly better fit than using only one depression measure (Supplemental Tables S2 and S3). This implies that when studying men, it is pivotal to assess depressive symptoms in their entire spectrum by combining instruments for prototypical depression symptoms with instruments for the assessment of male-typical externalizing depression symptoms.

Since it is confirmed that over the course of the COVID-19 pandemic an increase in suicides is recorded (Tanaka & Okamoto, 2021), it is now increasingly important to identify the most relevant factors for specific subgroups with regard to suicide risk. On first glance, prototypical and male-typical externalizing depressive symptoms seem to overshadow the weak association between experienced status loss due to the COVID-19 pandemic and suicide outcomes. However, a significant interaction indicates that status loss may be particularly detrimental to men exhibiting strong endorsement of traditional masculinity ideology, leading them to be at an increased risk of having committed suicide in the past month. Therefore, while status loss appears to be associated with increased suicide outcomes on a smaller scale, it should be addressed in the context of other factors related to it, such as endorsement of traditional masculinity ideology and prototypical as well as male-typical externalizing depression symptoms.

Strengths and Limitations

This study presents both strengths and limitations. As a strength, the recruitment and assessment of the sample took place in a condensed time frame of 1.5 months from March 15 till April 28, 2021. Thus, the dynamic character of the COVID-19 pandemic could only exert a small influence on the data. At the time of data collection, the pandemic was starting and peaking in its third wave in Switzerland, Germany, and Austria. Therefore, in all German-speaking countries of Central Europe, strong state-imposed COVID-19 protection measures were imposed, and there were no prospects for lifting those protections, although vaccination campaigns had just started. It was around this period when individual sectors announced major layoff measures, for example, in the airline sector, when the data for the present study were collected. Furthermore, since loss of social status was captured by only a single item, another strength of the study is that this item is well backed by additional COVID-19-related questions such as financial difficulties or job loss.

However, several limitations must also be highlighted. The most important point to emphasize is the cross-sectional design and thus the inability to draw any causal or longitudinal inferences. Since the present study used a convenience sample, it is not possible to infer the entire male population from this sample. For example, the sample is relatively young, and the majority of men have a high level of education. In addition, it can be assumed that men with mental distress are overrepresented in the study due to the specific study title and advertisement referring to *Men's Mental Health in Times of COVID-19*. This is also reflected by the very high percentage of men reporting suicidal ideation during the past 2 weeks. Although the survey clearly defined what constituted a suicide attempt, it is not possible to be entirely sure that the recording of suicide attempts was completely accurate. Further, because suicidal behavior is a very complex phenomenon, and numerous factors are relevant in this context, the sample is

underpowered to identify small-to-moderate effects still after correction for multiple testing. Future studies need to generate larger samples in order to be able to investigate as well other known risk factors in addition to the factors treated here as central such as status loss, endorsement of traditional masculinity ideology, and depressive symptomatology.

Conclusion

Since the outbreak of the COVID-19 pandemic, the world population has endured enormous suffering and grief for many deceased. However, the economic consequences are continuing to emerge and will do so for the foreseeable future. Due to macrostructural economic consequences caused by the COVID-19 pandemic and major restructuring and numerous layoffs in many economic sectors, a large number of people worldwide already experienced a loss of social status or will in the near future. In addition to loss of social status, other related consequences include loss of purpose, routine, and threats to provider and protector gender roles, with serious consequences for the mental health of men and their families. Men with an experienced loss of social status due to the COVID-19 pandemic are at substantially increased risk of becoming suicidal and attempting suicide. Further, the combination of status loss and strong endorsement of traditional masculinity ideology confers additional risk for suicide. In the aftermath of the most acute phase of the COVID-19 pandemic, health care policy should specifically target men with experienced status loss due to the COVID-19 pandemic in suicide prevention programs and swiftly design mental health care campaigns tailored to the group of men with strong endorsement of traditional masculinity ideology.

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