


Who cares? Effects of gendered self-perceptions on dropout intentions in communal degree programs

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Abstract

Global population aging trends create an increased need for educated workers in the health domain. At the same time, communal degree programs (i.e., health care and early education [HEE]) show high dropout rates—particularly for men. Extending person-environment fit theory and the lack of fit model, we investigate whether students' (gendered) self-perceptions relate to perceived fit and whether fit is associated with their sense of belonging to the degree program and dropout intentions. We conducted an online experiment with 298 Norwegian students enrolled in HEE degree programs (66 men, 232 women; $M_{\text{age}} = 25.32$, $SD = 6.08$). We experimentally manipulated the importance of communal versus neutral traits in communal occupations. The manipulation showed no effects on students' perceived fit or sense of belonging. However, students' gender was significantly related to their communal self-perceptions. Male students perceived themselves as less communal, and this perception was associated with lower perceived fit. Lower perceived fit was associated with a lower sense of belonging and higher dropout intentions. Our findings indicate that gender differences in communal self-perceptions exist even among students in communal degree programs, and that this

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difference in perceived communality may contribute to the higher dropout rates of male students.

KEYWORDS

communal degree program, dropout intentions, perceived fit, self-perceptions, sense of belonging

1 | INTRODUCTION

In recent years, the shortage of health care workers has become a massive problem, mainly due to the increasingly aging population (United Nations, 2019). This is a global issue; a report from the World Health Organization (WHO, 2016) predicts a worldwide shortage of 18 million healthcare workers by 2030. At the same time, the number of students dropping out of academic programs in healthcare and early education has increased (Canzan et al., 2022; Hamshire, Jack, Forsyth, Langan, & Harris, 2019; Twigg & McCullough, 2014). Dropout rates in health and early education are also high in Norway, the context of the present research: Dropout rates are between 15 and 20% in nursing (Dolonen & Reppen, 2022) and approximately 30% in teacher education (data from 2012; Kunnskapsdepartementet, 2016). Interestingly, there seems to be a gender difference in the dropout rates in these communal degree programs: A report from a Norwegian university stated that the dropout rate for men in their nursing program was 50%, whereas the dropout rates for women in the same program was around 20% (Nedregård & Abrahamsen, 2018). These numbers are alarming, particularly as men are already underrepresented in health and early education (HEE) domains, with men only accounting for 20.9% of students in health and social degree programs and 27.4% of pedagogics and teaching degree programs in 2021 in Norway (Statistisk Sentralbyrå [SSB], 2022a). Not only are men an underused resource in dealing with the global shortage in care workers, but research has also shown that having more men engaged in care work can be beneficial for both patients (Mao, Wang, Cheong, Van, & Tam, 2020) and for the men themselves (Bauer & McAdams, 2010; Le, Impett, Kogan, Webster, & Cheng, 2012).

Several reasons have been discussed that might explain students' dropout intentions and dropout rates. Research suggests that important predictors of attrition among medical and nursing students include socioeconomic background, ethnicity, race, previous grades and perceived quality of teaching staff (Kruzicevic et al., 2012; Nguyen et al., 2022; Ten Hoeve, Castelein, Jansen, & Roodbol, 2017). However, there are also psychological factors that can influence dropout intentions among students. For example, person-environment fit theory (PE fit theory; Caplan & Van Harrison, 1993) indicates that aspects of the self-concept (i.e., the description and evaluation of oneself that contributes to one's sense of identity, VandenBos, 2015) are important determinants of how we respond to our physical and psychological environment, influencing performance, well-being and withdrawal behaviours (Kristof-Brown, Zimmerman, & Johnson, 2005). Therefore, according to PE fit theory, a lack of fit between a student's self-concept and the environment of their university program might lead to poorer performance and greater intentions to drop out of that program. Recent empirical work has also found that aspects of the self-concept might influence students' dropout intentions by influencing their perceived personal fit and sense of belonging (i.e., a feeling of being accepted, valued, included and encouraged; Goodenow, 1993) in the degree program (Menkor, Nagengast, Van Laar, & Sassenberg, 2021). However, very little research has empirically investigated how underlying psychological mechanisms, like aspects of identity and the self-concept, might relate to students' dropout intentions in communal academic programs and whether there are differences between men and women. In the present research, we aim to bridge this gap in knowledge by investigating how both gender and gendered self-perceptions (i.e., an aspect of the self-concept relating to how one views oneself in line with gendered traits) affect the sense of belonging and dropout intentions among students in communal degree programs.

2 | THE GENDERED SELF-CONCEPT

As previously mentioned, PE fit theory indicates that the self-concept is important for the perceived fit of students in their chosen degree programs. Another theory that highlights the importance of the self-concept is the developmental theory of occupational aspirations (Gottfredson, 1981). This theory states that from adolescence, individuals' self-concept is one of the most important determinants of their occupational aspirations. The self-concept includes aspects such as self-perceptions, interests, and values. Importantly, according to this theory, the self-concept is partially based on internalized gender stereotypes, which leads to the observed gender differences in self-concepts (Gottfredson, 1981). Therefore, women typically have a more communal self-concept (i.e., identifying as being caring and kind), whereas men typically have a more agentic self-concept (i.e., identifying as being assertive and competitive; Korlat et al., 2022). In line with this theory, women aspire more toward communal occupations, whereas men generally aspire more toward agentic occupations (Su, Rounds, & Armstrong, 2009; Weisgram, Bigler, & Liben, 2010). Additionally, the lack of fit model by Madeline Heilman (1983, 2012) posits that the associations of communality with women and agency with men lead to barriers for women pursuing agentic careers. Indeed, research has found that female scientists observed a lack of fit between their self-concept and their perception of a successful individual in academia, and this lack of fit was related to lower work engagement and greater intentions to leave academia (Van Veelen & Derks, 2022).

However, research suggests that in many Western countries, these gender differences in the self-concept have changed over the last decades. A study investigating changes in the responses to the Bem Sex-Role Inventory (BSRI) from the 1970s to 2012 found that women increasingly identify with "masculine" qualities, while there were no changes in men's identifications with communal qualities (Donnelly & Twenge, 2017). In addition to self-views, a meta-analysis by Eagly, Nater, Miller, Kaufmann, and Sczesny (2020) also found that people's stereotypes about women have changed over time, such that women are viewed as increasingly agentic. However, this meta-analysis found no change in people's stereotypes regarding men. These studies indicate that both women themselves and society at large view women as more agentic, which is also reflected in women's increasingly agentic occupational aspirations and in the increasing proportion of women entering agentic occupations (Bureau of Labor Statistics as cited in Croft, Schmader, & Block, 2015). However, this research does not show parallel shifts in men's communality. For example, while the percent of women in male-dominated careers increased from 1995 to 2013 (i.e., an increase from 24 to 33%), the percentage of men in female-dominated jobs slightly decreased (Croft et al., 2015). As previous research has found the perceived lack of fit between women's self-concept and their agentic occupation was related to lower work engagement and higher dropout intentions, and as men's low communality has remained unchanged over recent years, this could indicate that men perceive a strong lack of fit between their self-concept and communal occupations and degree programs. This could explain men's high dropout rates in communal degree programs. It is therefore important to investigate how gendered self-perceptions influence male and female students' sense of belonging and dropout intentions in communal degree programs.

3 | THE EFFECT OF PERCEIVED FIT ON SENSE OF BELONGING AND DROPOUT INTENTIONS

According to PE fit theory, the perceived and objective fit between individuals and their environment are influenced by their self-concept (see Caplan & Van Harrison, 1993). This relationship between aspects of the self-concept and perceived fit has also been found in empirical studies. For example, a study at a German university found that undergraduate students who perceived a good fit between their self-concept and the university's norms showed a stronger sense of belonging to the university (Menkor et al., 2021). Given the communal norms in HEE domains, this suggests that students in communal degree programs who view themselves as caring and compassionate will likely feel a better fit with their degree program, leading to a greater sense of belonging to the program.

Studies have also found relationships between perceived fit and dropout intentions. For example, two meta-analyses found consistent relationships between person-environment fit and withdrawal behaviours in organizations (Kristof-Brown et al., 2005; Verquer, Beehr, & Wagner, 2003). This means that individuals who perceived a good fit between themselves and their job or organization had less intentions to quit their jobs than those who felt a worse fit with their occupational environment. Additionally, a study among German university students found that students with high perceived fit with the university norms showed increased well-being and academic motivation, and reduced dropout intentions (Suhlmann, Sassenberg, Nagengast, & Trautwein, 2018). A longitudinal study among American college and university students also found that increases in perceived fit over time correlated negatively with changes in dropout intentions (Schmitt, Oswald, Friede, Imus, & Merritt, 2008). Lastly, as previously mentioned, a study among female scientists found that a perceived lack of fit with the prototypical scientist was related to intentions to leave academia (Van Veelen & Derks, 2022). Thus, perceiving a lack of fit between oneself and one's degree program can lead to greater dropout intentions, and could thus explain men's higher dropout rates in communal degree programs (Nedregård & Abrahamsen, 2018).

The present work extends earlier research by including gender as a precursor to this perception of fit. Do men's and women's gendered self-perceptions predict their perceived fit in communal degree programs? Both stereotypes about men and their self-perceptions regarding their communality have not changed in recent decades (Donnelly & Twenge, 2017; Eagly et al., 2020), and the proportion of men in female-dominated jobs has not increased (Croft et al., 2015). These unchanged communal self-perceptions might explain why there are so few men in communal degree programs (SSB, 2022a), and—as self-perceptions are related to both dropout intentions and sense of belonging via perceived fit—why the dropout rates among men in communal degree programs are so high (Nedregård & Abrahamsen, 2018). As mentioned previously, there are some indications that women's self-concept may have changed over the past decades where women increasingly view themselves in terms of typically masculine traits and less in terms of typically feminine traits (Donnelly & Twenge, 2017). Therefore, it is interesting to investigate how women's potentially lower communal self-perceptions might also influence their perceived fit with communal degree programs. For this reason, it is important to explore how both male and female students' communal self-perceptions relate to their perceived fit with their degree program, their sense of belonging with their degree program, and their dropout intentions.

4 | THE PRESENT STUDY

The present study was conducted in Norway, which is a country with relatively low inequality in general and which is ranked as the second most gender-egalitarian country in the world (World Economic Forum, 2023). Higher education in Norway is accessible to nearly everyone because there are no study fees at public universities and colleges and all students can get the same student loan from the Norwegian government to pay for the cost of living while studying. At the same time, dropout rates at universities in Norway are generally high: around 17.3% of all students who were in a 3-year bachelor's degree program dropped out in the period from 2016 to 2021 (SSB, 2022b). Dropout is an even larger problem in communal degree programs with 15–20% of dropout among nursing students and 30% of dropout in teaching education in Norway (Dolonen & Reppen, 2022; Kunnskapsdepartementet, 2016). This is the case despite a shortfall of an estimated 16,100 employees in health- and social services in Norway (Myklathun, 2022). Therefore, getting a better understanding of factors that relate to students' dropout intentions in these degree programs is of high importance to Norwegian society, as in many Western societies.

In the first part of the present study, we used an experimental approach to investigate how students' gender and gendered self-perceptions influence their perceived fit with their degree program and their resulting sense of belonging and dropout intentions. As previous research has found relationships between students' self-concept and their perceived fit with their university (Menkor et al., 2021), we predicted that highlighting the importance of communal traits—compared with neutral traits—for future success in communal occupations might lower perceived fit and sense of belonging for students with lower communal self-perceptions. We therefore experimentally

manipulated whether communal (experimental condition) or neutral (control condition) traits were presented as important for future success within communal occupations, and then assessed female and male students' perceived fit, sense of belonging and dropout intentions.

We tested the following preregistered hypotheses¹: (H1) In the experimental condition (emphasizing the importance of communal traits) male students—but not female students—will report reduced perceived fit with their communal degree program relative to the control condition. (H2) In the experimental condition (emphasizing the importance of communal traits) male students—but not female students—will report a reduced sense of belonging with their communal degree program relative to the control condition. These hypotheses were preregistered on OSF: https://osf.io/bv35q/?view_only=b25f6b3ade844684a619c768391b8a2d.

In addition to these preregistered hypotheses, we sought to understand whether men's generally lower communal self-perceptions (Donnelly & Twenge, 2017) partially explain their higher dropout rates in communal degree programs. Additionally, as previous research has found that female scientists' perceived lack of fit between their self-concept and their stereotype of an agentic scientist is related to dropout intentions, we further investigated if men's higher dropout intentions can be explained by a perceived lack of fit between their self-concept and communal occupations. We therefore tested the following non-preregistered hypotheses: (H3) Participants' gender will predict their sense of belonging in their communal degree program, through their communal self-perceptions and perceived fit with their program. (H4) Participants' gender will predict their dropout intentions from their communal degree program, through their communal self-perceptions and perceived fit with their program. Specifically, male students will report less communal self-perceptions than female students, which will be related to less perceived fit with their communal degree program, which will then be related to a lower sense of belonging with the communal degree program and higher dropout intentions.

5 | METHODS

5.1 | Participants

As no studies have previously tested these hypotheses, we followed the general advice in experimental psychological research and aimed for at least 50 participants per cell (Brysbaert, 2019). As we collected data from both male and female participants, we aimed for a total sample of 200 participants.

We collected data from 445 participants (84 men, 350 women, 2 nonbinary, 9 missing). Participants were then excluded based on the following preregistered criteria: did not provide their consent twice, did not answer at least one out of the three items in the manipulation check correctly, did not answer at least two out of three attention check items correctly, did not report identifying as either a woman or a man, did not report studying for a communal occupation (e.g., nurse, preschool teacher or psychologist), did not report studying at a Norwegian university or college or did not fill in at least 50% of the questionnaire. Our final sample consisted of 298 students in a communal degree program (66 men, 232 women; $M_{\text{age}} = 25.32$, $SD = 6.08$; age range: 19–45 years). A sensitivity analysis for an ANCOVA with a 2×2 between-participants experimental design conducted for a sample of 298 indicated that a medium effect of $f^2 = 0.21$ can be detected at a power of 0.95. However, only a large effect of $f^2 = 0.45$ can be detected at a power of 0.95 when comparing the male participants ($n = 66$) in the control group and the experimental group.

5.2 | Design

We used a 2 (salience of communal vs. salience of neutral traits) \times 2 (female vs. male) between-participants experimental design. At the beginning of the questionnaire, participants were presented with a short excerpt of a fictional online newspaper article about the personality traits needed to be successful in communal occupations.

The experimental group read a fictional newspaper article that stated that a new study conducted in Norway showed that communal traits such as being compassionate, warm, and supportive are particularly important for success in communal occupations, whereas the control group read that neutral traits such as being engaged, effective, and reliable are important for success in communal occupations. The excerpts of the fictional articles can be found in the Supplemental Materials in Norwegian and English. After this experimental manipulation, the participants completed a questionnaire that assessed aspects of their gendered beliefs and identity, as well as aspects of their educational motivations.

5.3 | Procedure

Participants were recruited through social media and through contacting the administrators at different communal degree programs in Norway. The participants were forwarded a link to an online questionnaire. Participants first were assigned to the experimental condition or the control condition and were exposed to the respective newspaper article before completing the questionnaire. Participants were then debriefed about the experimental manipulation and the purpose of the study. Participants were asked to provide their consent at the beginning of the questionnaire, and once again after the debriefing. Participants had the option of participating in a lottery where they could win a gift card of NOK 500 as a reward for their participation in the study.

5.4 | Materials

The study was conducted in Norwegian. All original materials can be found in the Supplemental Materials in both Norwegian and English. The scales are presented in this paper in the order they were presented in the questionnaire, but items were randomized within scales.

5.4.1 | Sense of belonging

The sense of belonging scale was developed based on the Sense of Belonging to Math Scale (Good, Rattan, & Dweck, 2012). The participants were asked to indicate their feelings of belonging to their degree program (i.e., “Please indicate to which degree you feel a sense of belonging to your degree program”). The scale consisted of 8 items: (e.g., “I feel like I belong in my degree program”; “I feel connected with other students in my degree program”). Participants answered on a 7-point scale from 1 = *disagree very much* to 7 = *agree very much*. The scale showed high reliability ($\alpha = .93$).

5.4.2 | Perceived fit

The perceived fit scale was developed based on the Academic Fit Scale (Schmitt et al., 2008). The participants were asked to indicate their agreement to five statements (e.g., “The degree program I am taking matches my interests”; “My current degree program is not really what I would like to be doing”). Participants answered on a 7-point scale from 1 = *disagree very much* to 7 = *agree very much*. The scale showed high reliability ($\alpha = .87$).

5.4.3 | Communal self-perceptions

The communal self-perceptions scale was developed based on items from Kosakowska-Berezecka et al. (2022). The participants rated how much four communal traits described them (i.e., compassionate, caring, warm, supportive),

answered on a 7-point scale from 1 = *does not describe me at all* to 7 = *describes me very well*. The scale showed high reliability ($\alpha = .89$).

5.4.4 | Dropout intentions

The dropout intentions scale was developed based on items used in Hardré and Reeve (2003). The participants were asked to indicate their agreement with four statements (e.g., “*Sometimes I consider dropping out of university before exams*”; “*Sometimes I think that other jobs would suit me better than the ones I can get with my current degree program*”). Participants answered on a 7-point scale from 1 = *disagree very much* to 7 = *agree very much*. The scale showed acceptable reliability ($\alpha = .74$).

5.4.5 | Demographics

We collected information about participants' gender (1 = *man*, 2 = *woman*, 3 = *nonbinary*, 4 = *do not want to say*) and their degree program (which was subsequently coded as communal vs. not communal), as well as other demographic variables to be used as potential covariates in the analyses, including their age (in years), if they study at university or college (1 = *college*, 2 = *university*), and their sexual orientation (1 = *heterosexual*, 2 = *homosexual*, 3 = *bisexual*, 4 = *other*, 5 = *do not want to say*).²

5.5 | Analysis plan

To test if the male participants in the experimental condition reported lower perceived fit and sense of belonging with their communal degree program than female participants (H1 and H2), we conducted two ANCOVAs with gender, experimental condition and the interaction between gender and experimental condition as independent variables, controlling for participants' age. To test the serial mediating effect of communal self-perceptions and perceived fit on the relationship between gender and sense of belonging, and on the relationship between gender and dropout intentions, we conducted two serial mediation analyses using Model 6 in Hayes' Process macro in SPSS (Hayes, 2017; version 4.0, 10,000 bootstrap samples).

6 | RESULTS

The descriptive statistics of the measures, demographic variables and their correlations can be found in Table 1. Due to the large age range in the sample (19–45 years), age is included as a covariate in all analyses.

6.1 | Testing the effects of the experimental manipulation (H1 and H2)

The results of the ANCOVAs can be found in Tables 2 and 3. Contrary to our predictions (H1 and H2), we found no interaction between condition and gender on perceived fit, $F(1, 293) = 0.91, p = .342$, or sense of belonging, $F(1, 293) = 0.25, p = .621$. We found significant main effects of gender on perceived fit, $F(1, 293) = 5.25, p = .023$, and on sense of belonging, $F(1, 293) = 4.73, p = .031$. Additionally, the effect of age on perceived fit was significant, meaning that older students reported a greater perceived fit with their degree program, $F(1, 293) = 15.20, p < .001$. The results of the analyses remain unchanged if the covariate age is excluded

TABLE 1 Descriptive statistics and correlations.

	N	M	SD	1	2	3	4	5
1. Age	66/232	24.11/25.67	4.70/6.38	1				
2. Perceived fit	66/232	5.13/5.55	1.24/1.14	0.30*/0.21**	1			
3. Communal self-perceptions	66/232	5.24/6.28	1.25/0.75	0.20/0.13	0.64**/0.37**	1		
4. Sense of belonging	66/232	4.76/5.13	1.27/1.32	-0.05/-0.03	0.54**/0.49**	0.59**/0.35**	1	
5. Dropout intentions	66/231	2.59/2.34	1.35/1.30	-0.30*/-0.15*	-0.75**/-0.68**	-0.44**/-0.24**	-0.34**/-0.35**	1

Note: n = 298; statistics are for men/women.

* $p < .05$; ** $p < .01$.

TABLE 2 Analysis of covariance with perceived fit as the outcome.

Variable	SS	df	M. Sq.	F	p	η^2_p
Intercept	1713.74	1	1713.74	1,320.29	<.001	0.818
Age	19.73	1	19.73	15.20	<.001	0.049
Gender	6.81	1	6.81	5.25	.023	0.018
Condition	0.51	1	0.51	0.40	.530	0.001
Gender × condition	1.18	1	1.18	0.91	.342	0.003
Error	380.32	293	1.30			

Note: DV, dependent variable = perceived fit with communal degree program.

TABLE 3 Analysis of covariance with sense of belonging as the outcome.

Variable	SS	df	M. Sq.	F	p	η^2_p
Intercept	1792.44	1	1792.44	1,038.07	<.001	0.780
Age	0.80	1	0.80	0.47	.495	0.002
Gender	8.16	1	8.16	4.73	.031	0.016
Condition	2.03	1	2.03	1.18	.279	0.004
Gender × condition	0.42	1	0.42	0.25	.621	0.001
Error	505.93	293	1.73			

Note: DV, dependent variable = sense of belonging with communal degree program.

from the models. The estimated marginal means for men and women in the two conditions can be found in the Supplemental Materials.

6.2 | Additional analyses (H3 and H4)

Combining the participants from the two experimental conditions, we then tested the additional (non-preregistered) H3 and H4. This allowed us to explore relationships between participants' gendered self-perceptions and their perceived fit and sense of belonging with their degree program, as well as their dropout intentions from their degree program.

For the following analysis, we included both male and female students in communal degree programs in our sample, resulting in sample of 298 participants (232 women, 66 men). We conducted two serial mediation analyses. In the first analysis, gender was the predictor (X), communal self-perceptions were the first mediator (M1), perceived fit was the second mediator (M2) and sense of belonging was the outcome (Y). Age and experimental condition were included as covariates. Gender was significantly positively related to communal self-perceptions, $B = 1.01$, $p < .001$, 95% confidence interval [CI] [0.77–1.25], such that women reported stronger communal self-perceptions than men (women: $M = 6.28$, $SD = 0.75$; men: $M = 5.24$, $SD = 1.25$). Communal self-perceptions were positively related to perceived fit, $B = 0.57$, $p < .001$, 95% CI [0.43–0.70], and perceived fit was positively associated with sense of belonging, $B = 0.48$, $p < .001$, 95% CI [0.36–0.60]. The direct effect of gender on sense of belonging was not significant, $B = -0.13$, $p = .430$, 95% CI [-0.47 to 0.20]. The indirect effect of gender on sense of belonging through communal self-perceptions and perceived fit was significant, $B = 0.27$, 95% CI [0.16 to 0.41]. There was no effect of the covariate experimental condition, but the effect of age on sense of belonging was significant, $B = -0.03$,

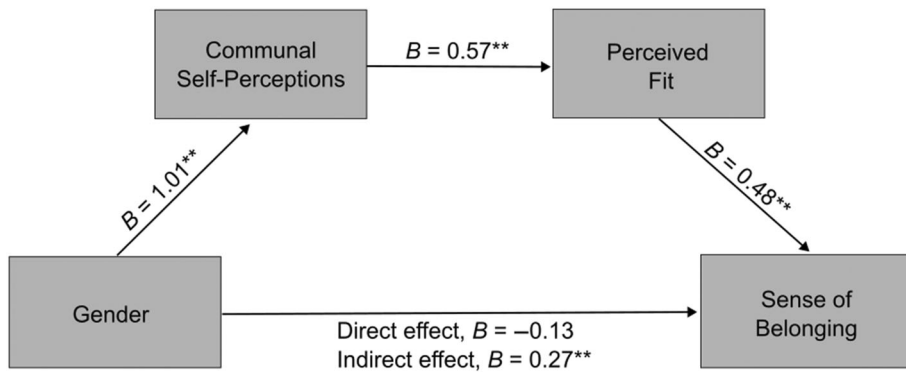


FIGURE 1 Serial mediating effect of communal self-perceptions and perceived fit on the relationship between gender and sense of belonging. * $p < .05$; ** $p < .01$; age and experimental condition were included as covariates.

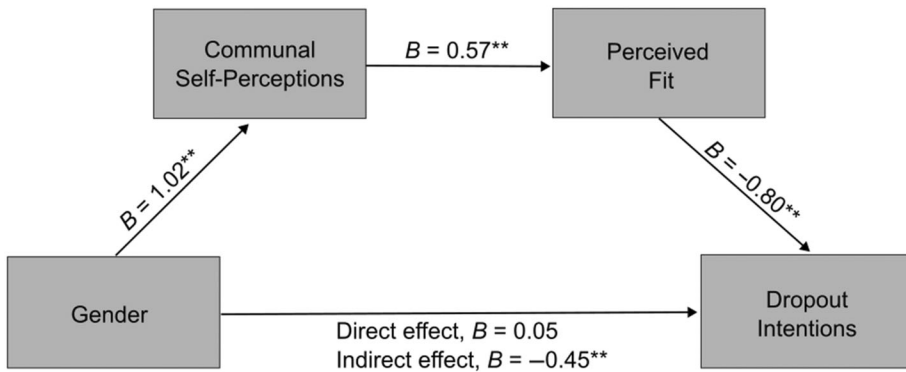


FIGURE 2 Serial mediating effect of communal self-perceptions and perceived fit on the relationship between gender and dropout intentions. * $p < .05$; ** $p < .01$; age and experimental condition were included as covariates.

$p = .001$, 95% CI $[-0.06$ to $-0.02]$, meaning that older participants reported a slightly lower sense of belonging with their communal degree program. The results of this analysis can be found in Figure 1.

In the second analysis, gender was the predictor (X), communal self-perceptions were the first mediator (M1), perceived fit was the second mediator (M2) and dropout intentions were the outcome (Y). Age and experimental condition were included as covariates. Again, gender was significantly related to communal self-perceptions, $B = 1.02$, $p < .001$, 95% CI $[0.77-1.26]$. Communal self-perceptions were positively related to perceived fit, $B = 0.57$, $p < .001$, 95% CI $[0.43-0.70]$, and perceived fit was negatively associated with dropout intentions, $B = -0.80$, $p < .001$, 95% CI $[-0.89$ to $-0.68]$. The direct effect of gender on dropout intentions was not significant, $B = 0.05$, $p = .742$, 95% CI $[-0.24$ to $0.34]$. The indirect effect of gender on dropout intentions through communal self-perceptions and perceived fit was significant, $B = -0.45$, 95% CI $[-0.67$ to $-0.28]$. There were no effects of the covariates age and experimental condition. The result of this analysis can be found in Figure 2.

7 | DISCUSSION

The present study investigated how gender and gendered self-perceptions of students in communal degree programs influenced their perceived fit with their degree program, their sense of belonging with their degree

program and their intentions to drop out of their degree program. There was no effect of experimental condition, suggesting that our experimental manipulation was not salient enough to induce any changes in participants' perceived fit and sense of belonging. However, as our sample size of men was quite small ($n = 66$), this nonsignificant effect of the experimental manipulation could be due to low statistical power, as we did see descriptive differences between the control group and the experimental group in the direction of our hypotheses.

As a next exploratory step, we investigated the relationships between gender and communal self-perceptions, and whether this relationship could explain gender differences in perceived fit, sense of belonging and dropout intentions. We found evidence for the two serial mediations that we tested. They showed that gender was related to communal self-perceptions and perceived fit, which in turn was related to sense of belonging. In the second analyses, we showed the same path for dropout intentions. More precisely, we found that women reported more communal self-perceptions than men, and that those with more communal self-perceptions also reported greater perceived fit with their communal degree program. Those who reported a greater fit with their communal degree program also reported a higher sense of belonging and lower dropout intentions. Our findings in these mediational analyses are mostly in line with previous research finding relationships between aspects of the self-concept, perceived fit and dropout intentions (Menkor et al., 2021; Suhlmann et al., 2018).

An interesting aspect of our findings in these additional analyses is that both female and male students with more communal self-perceptions perceived a greater fit with their communal degree program, which was related to lower dropout intentions. This indicates that the higher attrition rate among male students in communal degree programs (Nedregård & Abrahamsen, 2018) might be partially explained by their lower communal self-perceptions. Future interventions to address the high dropout rate of males in communal programs could include exercises to modify students' communal self-perceptions, such as by redefining communality in more gender-neutral and self-relevant ways (e.g., asking participants to recall times they were helpful to a friend or family member; reconceptualizing one's experience volunteering as a coach for a youth sports team as an example of communal behaviour).

Additionally, the reduction in women's communal self-perceptions over recent years (Donnelly & Twenge, 2017) could lead to women perceiving less fit between themselves and their communal degree program. Therefore, the high attrition rate that is also found for female students (Dolonen & Reppen, 2022) might also be partially explained by changes in women's self-perceptions. Based on this line of argumentation, governments and traditionally communal programs might need to highlight for men and women how traits other than communal traits are valued in these programs and important for success in the resulting occupations. For example, schools or hospitals may advertise that is not only important to be caring and empathetic to be a good nurse; being organized, structured and successful in high-pressure situations, as well as possessing an interest in natural sciences might be equally important to succeed and thrive as a nurse. Emphasizing these neutral or more typically agentic traits might lead more people to feel that these traditionally female-dominated communal occupations might be a good fit for them.

Due to the shortage of qualified workers both in Norway (Myklathun, 2022) and internationally (WHO, 2016), it is critical that we find ways to recruit more people to communal occupations, especially in healthcare. One type of intervention that has been successfully implemented to increase women's engagement in STEM fields (science technology, engineering and math) is communal goal interventions (see Diekman & Steinberg, 2013). These interventions highlight how occupations in STEM can also fulfil communal goals (e.g., helping other people) and therefore make a career in STEM seem more attractive to girls and women. For example, the US National Academy of Engineering redesigned a recruitment flyer to highlight the social impact of engineers, which led to quadrupled attendance at a recruitment event for high school girls, as well as an increase from 19 to 24% in the proportion of female students enrolled in engineering studies (Yowell & Sullivan, 2011). To our knowledge, similar interventions that highlight agentic goals in HEE fields have not been conducted but should be considered in the future.

An important point to consider when discussing attrition rates in communal degree programs and occupations is the lower relative status and pay of communal occupations. Although there is a lack of research on the effects of occupational status on attrition rates in communal degree programs, a survey conducted among Norwegian nurses in 2021 found that 64% of nurses who considered quitting their job reported low salary as a cause (Helmers, Johansen, & Reppen, 2021). Additionally, data from the same survey showed that male nurses were more unhappy with their salary than female nurses. These findings highlight the lack of financial incentives for men to pursue careers in communal fields, compared with the financial incentives for women to pursue careers in high-paid and prestigious agentic fields (e.g., engineering, law). It is therefore important to incorporate measures that promote the status of communal occupations (e.g., increases in salary) along with interventions that highlight the value of agentic traits in communal occupations.

Despite the important findings in the present study, there are some limitations that need to be considered. First, the experimental manipulation in our study was likely too weak to induce the effects that we aimed to explore with the preregistered hypotheses. Future studies that aim to highlight the importance of communal versus neutral traits in communal occupations should therefore use a stronger manipulation that either lasts longer or has a more salient message, for example by showing participants multiple articles or headlines from different sources claiming that communal traits are necessary for success in communal occupations. As the experimental manipulation showed only minimal effects, we have reported additional cross-sectional analyses in the present paper. As these analyses were correlational, we cannot make any causal conclusions regarding the direction of the found effects. Additionally, our sample included fewer men than women (232 women versus 66 men). This low number of men in our analysis might have reduced statistical power. However, this gender distribution is similar to the actual gender distribution in communal degree programs, as the majority of these students are female (SSB, 2022a). It is therefore difficult to recruit a gender-balanced sample of students in communal degree programs. Further research may want to target prospective (high school) students to gain more knowledge of male students' perceptions of communal degree programs and their anticipated fit.

8 | CONCLUSION

The present study investigates the important topic of the psychological causes of dropout intentions in communal degree programs. We find that having communal self-perceptions is an important factor in perceiving a good fit and a strong sense of belonging with communal degree programs for both male and female students, which can lead to lower dropout intentions. At the same time, we find that men in communal degree programs report lower communal self-perceptions than women. Therefore, in order to ensure that communal degree programs are able to retain their students and educate a sufficient number of qualified workers to meet the especially large need of healthcare workers, typically communal traits should not be the only traits that are highlighted as essential in these programs. Drawing inspiration from communal goal interventions, novel interventions highlighting how communal occupations provide a good fit for individuals with lower communal self-perceptions and can fulfil individuals' agentic values may increase men's interest in communal occupations. This could lead to a more diverse group of students feeling a good personal fit with their degree program, which the present research has found is related to a stronger sense of belonging and lower dropout intentions among both male and female students in communal degree programs.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in Open Science Framework at https://osf.io/n286j/?view_only=26c75eee64ce40f3b91b50ece98f101a.

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ENDNOTES

- ¹ In addition to the hypotheses presented in this paper, additional hypotheses related to the female participants were preregistered: https://osf.io/4b7ta/?view_only=469f955f6066487f9f13bcbc263e6c62. However, as we did not find any effects of the experimental condition in H1 and H2, and since we found no effects of the preregistered hypotheses in the second preregistration, we decided to report the results from these analyses in the Supplemental Materials. Additionally, two hypotheses were excluded from the first preregistration that investigated the effect of masculinity threat, as we decided to only include the variables collected for both male and female participants in the present paper.
- ² In addition to the scales presented in this paper, the questionnaire assessed male participants' perceived masculinity threat, backlash, gender stereotypes, male norm role beliefs, personal values, importance of masculinity/femininity, and identification with their gender.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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