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Social Camouflaging and Videoconferencing Fatigue in Neurodivergent Workers: Examining Gender as a Moderator

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Abstract

Burnout, neurodiversity, and meeting science have developed as separate literatures. This leaves a blind spot at their intersection. Social camouflaging is the suppression of autistic traits to meet social expectations. It demands cognitive and emotional effort. Videoconferencing may compound these demands through persistent self-view, dense face grids, and reduced nonverbal cues. The present study tests whether social camouflaging is associated with Zoom fatigue among neurodivergent adults. We recruited 332 neurodivergent adults through snowball sampling and online community channels. Participants completed an anonymous self-report survey. We conducted hierarchical regressions and a moderated mediation analysis. Autistic traits were positively associated with social camouflaging and Zoom fatigue. Social camouflaging was strongly associated with Zoom fatigue and accounted for substantial variance beyond demographic covariates. Camouflaging mediated the relationship between autistic traits and Zoom fatigue. The indirect effect was about twice as strong for women as for men. Social camouflaging is a distinct source of cognitive load in virtual meetings. These findings extend the camouflaging literature into the occupational domain. Evidence-based accommodations may reduce cognitive demands for neurodivergent employees. These include adjusted meeting load, protected recovery windows, and camera-optional participation.

Introduction

Adults who identify as neurodivergent make up around 22% of the global workforce (Weber et al., 2024). Neurodivergence includes autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), dyslexia, and dyspraxia, among others. The Global Burden of Disease Study 2021 estimates that one in 127 individuals globally is autistic (Santomauro et al., 2025). The prevalence of adult ADHD is between 2.5% and 4.5%, with 75-80% of cases remaining undiagnosed (Sgro et al., 2025). Neurodivergent adults often engage in cognitively demanding behaviors, such as social camouflaging, to align their presentation with neurotypical expectations (Mylett et al., 2026). Further, neurodivergent adults are prevalent in the workplace. Yet researchers have limited understanding of how the cognitive demands of social camouflaging relate to workplace meetings. This is especially true for virtual meetings and the associated meeting fatigue.

Neurodiversity and meeting science have developed as two separate literatures, creating a blind spot where these two areas intersect. Meeting researchers and in particular those who study virtual meeting fatigue rarely identify neurodivergent participants when doing their studies. Further, neurodiversity researchers have yet to explore the ways that social camouflaging emerges inside virtual meetings. Because of this, most meetings take a one-size-fits-all approach that fails to consider differences associated with neurodivergence. Additionally, meeting scientists are unaware of the compounded burden facing workers who are camouflaging while experiencing executive function demands. The present study addresses this gap by testing whether autistic traits have a positive association with Zoom fatigue indirectly through camouflaging and whether this pathway differs by gender.

Autistic Traits, Social Camouflaging, and Zoom Fatigue in the Virtual Meeting Environment

Autistic traits are conceptualized as a continuum distributed across the whole population (Baron-Cohen et al., 2001). The Autism-Spectrum Quotient (AQ) (Baron-Cohen et al., 2001) was developed to show where an individual falls on this continuum. Clinical diagnosis represents the threshold where traits reach sufficient intensity and cause functional impairment. However, traits below that threshold still vary meaningfully across individuals. Further, these traits often create cognitive and social demands that we believe lead individuals to engage in social camouflaging and experience increases in overall fatigue, including Zoom fatigue after virtual meetings.

Social Camouflage (also referred to as autistic masking) is the conscious or unconscious suppression of one's natural responses and behaviors in order to appear neurotypical within social settings (Hull et al., 2017). Social camouflage is a complex response to stigma and deficit-based views of neurodevelopmental conditions (Pearson & Rose, 2021). Social camouflage is also remarkably common. Between 75 and 95% of autistic individuals report using social camouflage strategies daily (Weber et al., 2024; Hull et al., 2021). Autistic women spend an estimated three to seven hours per day maintaining a neurotypical facade (Hull et al., 2021). Social camouflage extends beyond autism, as estimated 68% of ADHD adults also report camouflaging hyperactivity, impulsivity, or chronic lateness (Van Der Putten et al., 2024). This cross-condition pattern reveals social camouflage may be a universal neurodivergence survival strategy (Livingston et al., 2019). The biopsychosocial model frames social camouflage as a coping strategy rather than a personal deficit, shifting focus from individual pathology to person-environment fit (Doyle, 2020). Workplace demands, like virtual meetings, are compounded by uneven cognitive profiles common among neurodivergent people. Individuals, for example, may show exceptional strengths in pattern recognition alongside differences in executive functions like planning and attention regulation. This unevenness potentially increases adaptive load.

We anticipate that social camouflaging will likely follow a similar distribution to autistic traits (Hull et al., 2017). Individuals with higher autistic trait levels face a larger gap between their natural social presentation and societal expectations. That gap creates pressure to camouflage. This suggests camouflaging occurs not only among diagnosed autistic adults but also among individuals with elevated subclinical traits. Thus, we hypothesize the following:

Hypothesis 1a: Autistic traits are positively related to social camouflaging.

To further examine variability within the proposed relationships, we situate our study in a specific work context: virtual meetings. Virtual meetings are a common meeting modality that has greatly increased within the workplace in recent years. These meetings are essentially the same as face-to-face meetings, except the communication medium is now virtual through cameras, microphones, and speakers. These technologies introduce additional challenges, particularly for neurodivergent individuals. Specifically, it is believed that virtual meetings are associated with greater cognitive demands through sustained nonverbal monitoring and self-presentation management (Fauville et al., 2021; Mokshita & Saha, 2024).

These demands fall directly within social-cognitive domains where individuals with higher autistic traits experience greater strain (Baron-Cohen et al., 2001). Videoconference meetings are particularly demanding, combining real-time social interaction with continuous visual exposure to self and others (Doyle, 2020; Mokshita & Saha, 2024). Videoconferencing fatigue, commonly referred to as "Zoom fatigue," is well documented in the general population. Features include persistent self-view, dense grids of faces, and limited nonverbal communication increasing cognitive demands (Bailenson, 2021;Fauville et al., 2021). However, researchers in existing studies rarely identify neurodivergent participants (Doyle, 2020;Mokshita & Saha, 2024). Individuals with elevated autistic traits are therefore likely to experience higher Zoom fatigue. This pattern may be associated with social-cognitive strain and camouflaging efforts. Both involve managing nonverbal behaviors and maintaining a neurotypical self-presentation. Thus, we propose the following hypotheses:

Hypothesis 1b: Autistic traits are positively related to Zoom fatigue.

Additionally, we believe that autistic traits, social camouflaging, and Zoom fatigue are interrelated. Specifically, we anticipate there being a direct effect of social camouflaging on zoom fatigue, as the act of social camouflaging is cognitively and even physically demanding. Thus, consistent with the biopsychosocial model (Doyle, 2020), we anticipate the demands of social camouflaging will relate to zoom fatigue across varying levels of neurodivergence. Thus, we suggest the following hypothesis:

***Hypothesis 2*:** Social camouflaging during virtual meetings is positively related to Zoom exhaustion and fatigue.

A Mediated Model for Autistic Traits Manifested in Virtual Meetings

The foregoing hypotheses suggest an interrelated pattern of relationships among autistic traits, social camouflaging, and Zoom fatigue. Specifically, we propose a mediated model in which autistic traits relate to Zoom fatigue indirectly through social camouflaging. As previously argued, autistic traits create a gap between a neurodivergent individual's natural social presentation and neurotypical expectations (Hull et al., 2017). The wider this gap, the greater the pressure to camouflage. Neurodivergent adults describe camouflaging as mentally, physically, and emotionally exhausting (Hull et al., 2017). Focusing on camouflaging strategies interferes with attention, concentration, and memory (Mylett et al., 2026). Shallow compensatory strategies break down under sustained cognitive load and do not transfer flexibly across contexts (Livingston et al., 2019). Given the pattern described here, we propose the following hypothesis:

Hypothesis 3: Social camouflaging mediates the positive relationship between autistic traits and Zoom fatigue.

Gender Moderating the Mediation

The strength of this indirect pathway may vary by gender. Camouflaging has been proposed as a key explanation for the underdiagnosis of autistic women. These women use social imitation strategies that

mask functional differences (Hull et al., 2017). Autistic women are diagnosed later and less frequently than autistic men with equivalent trait levels (Hull et al., 2017). Autistic women spend substantially more time camouflaging daily than men (Hull et al., 2021). They also report more frequent negative consequences of camouflaging, including exhaustion and threats to self-perception.

Gender also shapes the techniques and costs of camouflaging. Both autistic men and women camouflage, but research indicates gendered differences in the strategies used and their consequences (Hull et al., 2019). Camouflaging creates a dissociation between the autistic person's internal experience and external presentation (Hull et al., 2019). Women are often perceived as less affected and more neurotypical, while managing high levels of internal stress (Hull et al., 2019). This may cause coworkers, supervisors, and clinicians to underestimate support needs. Autistic women may also be less likely to meet diagnostic criteria on some measures, despite comparable or greater functional difficulties (Hull et al., 2019). Society places higher demands on social ability and assimilation for people perceived as female (Hull et al., 2017). Successful camouflaging in women may obscure clinical need (Hull et al., 2017).

These demands are amplified in virtual meeting contexts. Zoom calls require sustained nonverbal monitoring and self-presentation management. Self-view creates a continuous visual feedback loop. Women respond with greater self-focused attention and negative affect in response to self-view than men (Bailenson, 2021). Autistic and ADHD women may face compounded demands. They must manage their neurodivergent traits while also meeting gendered socialization expectations to be warm, attentive, and socially smooth. These patterns suggest Zoom environments may intensify the cognitive cost of camouflaging specifically for women.

Hypothesis 4: Gender moderates the indirect effect of social camouflaging on Zoom fatigue, such that the relationship is stronger for women than for men.

Methods

Design

The present study is a cross-sectional observational study where we collected survey data via Qualtrics. Participants were recruited through Research Match and a local convenience sample. Informed consent was electronically signed followed by about 15 minutes to complete the survey. This design allows us to assess camouflaging and outcomes such as exhaustion and fatigue at the same time point. A single time-point of data collection reduces participant burden and allows for quicker recruitment. This is especially important when studying neurodivergent populations, where minimizing participant fatigue is crucial for obtaining reliable data (Livingston et al., 2019).

Participants

We recruited 417 neurodivergent adults (mean age = 33.3, SD = 10.1) in 2025-26 via snowball sampling and online recruitment through ResearchMatch. Following listwise deletion, our remaining sample was 332 participants. We conducted a raffle for ten $25 Amazon gift cards. We excluded participants who were under 18, identified as neurotypical, or had not attended a work or school meeting in the past week. We included both formally diagnosed and self-identified neurodivergent individuals. Relying solely on formal diagnoses risks misclassifying neurodivergent individuals as neurotypical. Many remain undiagnosed because of financial constraints, stigma, or barriers to access (Hull et al., 2019; Sgro et al., 2025; Van Rijswijk & Curșeu, 2025). The majority of participants identified as female (60.4%), an unusual distribution for neurodivergent adults. This imbalance may bias estimates of gender as a moderator and limit generalizability to neurodivergent men. Table I lists the participants' demographics.

Table I

Sample Demographics (N = 417)

Demographic Variable	Frequency	Percent
Gender		
Male	62	14.9
Female	252	60.4
Other	45	10.8
Missing	58	13.9
Race		
American Indian/Alaska Native	1	0.2
Asian	15	3.6
Black or African American	21	5.0
Native Hawaiian/Other Pacific Islander	3	0.7
White	291	69.8
Some Other Race	5	1.2
Multiple	24	5.8
Missing	57	13.6
Neurotype		
ADHD	354	84.9
Autism	169	40.5
Dyslexia	46	11.0
Dyscalculia	34	8.2
Dyspraxia	11	2.6
Tourette's	13	3.1
Learning Disability	25	6.0
Other	15	3.6
Ethnicity		
Non-Hispanic	317	76.0
Hispanic	43	10.3

Note. N = 417 reflects the total recruited sample. The n column reports the responding subsample for each variable after listwise exclusion of missing data. Neurotype n is not reported because participants could select multiple neurotypes; percentages do not sum to 100%.

Demographic Variable	Frequency	Percent
Missing	57	13.6
Education		
Some High School	2	0.5
High School Degree	11	2.6
Some College	78	18.7
College Degree	115	27.6
Some Graduate School	42	10.1
Graduate Degree	111	26.6
Missing	58	13.9

Note. N = 417 reflects the total recruited sample. The n column reports the responding subsample for each variable after listwise exclusion of missing data. Neurotype n is not reported because participants could select multiple neurotypes; percentages do not sum to 100%.

Measures

Camouflaging Autistic Traits Questionnaire (CAT-Q)

The CAT-Q is a 25-item self-report measure of camouflaging behaviors (Hull et al., 2019). The measure has three subscales: Compensation, Social Camouflage, and Assimilation. Respondents rate items on a seven-point Likert scale (1 = Strongly disagree to 7 = Strongly agree). Five items are reverse scored. All items are summed to produce a total score. Total scores range from 25 to 175, with 100 or above indicating significant camouflaging. Internal consistency in the current sample was excellent (α = .91).

Zoom Exhaustion & Fatigue Scale (ZEF Scale)

The ZEF Scale is a 15-item measure assessing fatigue following video conferencing (Fauville et al., 2021). It includes five subscales: General, Visual, Social, Motivational, and Emotional Fatigue. Respondents rate items on a five-point Likert scale. All items are summed to produce a total score. Total scores range from 15 to 75, with higher scores indicating greater exhaustion. Internal consistency in the current sample was excellent (α = .94).

Autism Spectrum Quotient (AQ)

The AQ is a 50-item self-report measure of autistic traits in adults (Baron-Cohen et al., 2001). It comprises five subscales: Social Skill, Attention Switching, Attention to Detail, Communication, and

Imagination. Items are rated on a four-point scale from definitely agree to definitely disagree. About half the items are worded so that disagreement reflects autistic traits (Baron-Cohen et al., 2001). Each response in the autistic direction scores 1 point, whether slight or definite (Baron-Cohen et al., 2001). Responses in the opposite direction score 0 points. Total scores range from 0 to 50, with higher scores indicating more pronounced autistic traits. Internal consistency in the current sample was good (α = .85).

Results

Correlations

Using Pearson correlation, we found social camouflaging has a strong positive correlation with zoom fatigue (r = 0.491, p < 0.001). Autistic traits have a strong positive correlation with social camouflaging (r = 0.516, p < 0.001), and a strong positive correlation with Zoom fatigue (r = 0.356, p < 0.001). Education showed a small negative correlation with autistic traits (r = − .19, p < .01) and a small positive correlation with age (r = .17, p < .01). Autistic traits were not correlated with age (r = − .02, p > .05). See Table II for means, SD, correlations, and internal consistency.

Table II

Means, Standard Deviations, Correlations, and Internal Consistency

Variable	*M*	*SD*	1	2	3	4	5	6
1. CAT-Q	120.68	23.29	.91					
2. ZEF	46.41	12.53	.49**	.94				
3. AQ	28.01	7.95	.52**	.36**	.85			
4. Age	39.37	10.14	–.13*	–.06	–.02	–		
5. Education	6.43	1.29	–.20**	–.10	–.19**	.17**	–	
6. Gender	-	-	.14**	.07	.25**	–.20**	–.15**	–

Note. *p < .05, **p < .01. Diagonal values are internal consistency estimates (Cronbach's alpha). Dashes indicate single-item measures.

Hierarchical Regressions

Hypotheses 1a & 1b were supported. Autistic Quotient scores account for additional variance in camouflaging beyond demographic covariates (ΔR^2 = 0.255, p < .001, B = 1.517, β = 0.531). Age became significant in Block 2 (B = -0.251, β = -0.110, p = 0.027), a small effect suggesting older workers reported less camouflaging. Autistic Quotient scores also account for additional variance in Zoom fatigue (ΔR^2 = 0.120, p < .001, B = 0.567, β = 0.376).

Hypotheses 2 was supported. Social camouflaging accounted for additional variance in Zoom fatigue beyond demographic covariates ($\Delta R^2 = 0.241$, $p < .001$, $B = 0.267$, $\beta = 0.499$). Men reported lower Zoom fatigue than women, a small effect, after controlling for camouflaging ($B = -3.750$, $\beta = -0.113$, $p = 0.023$).

Mediation

Hypothesis 3

was supported. We conducted a mediation analysis using PROCESS Model 7 (Hayes, 2022) with 5,000 bootstrap samples (N = 332). Autistic traits had a direct positive association with Zoom fatigue ($B = 0.567$, $\beta = 0.376$, $p < .001$). Camouflaging partially mediated this association. The direct effect of autistic traits on camouflaging was positive and significant ($B = 1.691$, $p < .001$), suggesting that individuals with more pronounced autistic traits engaged in greater camouflaging. Camouflaging was directly associated with Zoom fatigue ($B = .212$, $p < .001$). Autistic traits remained a significant predictor of Zoom fatigue after controlling for camouflaging ($B = .224$, $p = .009$), indicating partial mediation.

Moderated Mediation

Hypothesis 4

was supported. Gender moderated the path from autistic traits to camouflaging. The AQ × male interaction was significant ($B = - .885$, $p = .024$), suggesting that at higher levels of autistic traits, the association with camouflaging was stronger for women than for men. The direct association between autistic traits and camouflaging was stronger for women ($B = 1.691$) than for men ($B = .806$). The indirect effect of autistic traits on Zoom fatigue via camouflaging was significant for women (Effect = .359, 95% BC CI [.250, .481]) and for men (Effect = .171, 95% BC CI [.029, .349]). The index of moderated mediation was significant (Index = − .188, 95% BC CI [-.356, − .025]), indicating that the indirect effect was approximately twice as strong for women. Table III presents the full results. Figure I shows a line graph of the moderation effect and Figure II is another graphical representation of the findings.

Table III

Moderated Mediation Results for Autistic Traits, Social Camouflaging, and Zoom Fatigue

Predictor	B	SE	t	p	95% CI
CAT-Q					
Constant	120.032***	1.32	90.923	< .001	[117.434, 122.629]
AQ	1.691***	0.167	10.129	< .001	[1.363, 2.020]
Male	2.149	2.953	0.728	0.467	[− 3.660, 7.957]
Other/NonBinary	1.677	3.938	0.426	0.671	[− 6.069, 9.423]
AQ × Male (interaction)	−.885*	0.391	−2.264	0.024	[− 1.654, − .116]
AQ × Other/NonBinary (interaction)	−.496	0.43	−1.153	0.25	[− 1.343, .350]
ZEF					
Constant	18.606***	3.605	5.161	< .001	[11.514, 25.698]
AQ	.224**	0.086	2.614	0.009	[.055, .392]
CAT-Q	.212***	0.03	7.169	< .001	[.154, .270]
Conditional indirect effect of AQ on	Boot indirect effect			Boot SE	95% BC CI
ZEF at values of gender					
Female	0.359			0.06	[.250, .481]
Male	0.171			0.08	[.029, .349]
Other/NonBinary	0.253			0.094	[.077, .447]

Note. N = 332. PROCESS Model 7 (Hayes, 2022). 5,000 bootstrap samples. AQ was mean centered. Reference group for gender = female. *p < .05. **p < .01. ***p < .001. Abbreviations: BC CI, bias-corrected confidence interval; AQ, Autism-Spectrum Quotient; CAT-Q, Camouflaging Autistic Traits Questionnaire; ZEF, Zoom Exhaustion & Fatigue Scale; SE, standard error.

Fig I. Association Between Autistic Traits and Social Camouflaging by Gender

Note

AQ scores are shown on the original 0 to 50 scale. Points mark the 16th, 50th, and 84th percentiles of AQ. Predicted CAT-Q scores are based on the PROCESS Model 7 estimates in Table III.

Fig II. Moderated Mediation Model Linking Autistic Traits to Zoom Fatigue Through Social Camouflaging

Note

Values are unstandardized coefficients from PROCESS Model 7 (Hayes, 2022; *N* = 332). AQ was mean centered. Female is the reference group, so *a* is the conditional effect for women. The conditional *a* paths are .806 for men and 1.195 for other/nonbinary participants. Gender main effects on CAT-Q were nonsignificant (see Table 3). Brackets show 95% bias-corrected bootstrap confidence intervals from 5,000 samples. *$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

The present study examined how social camouflaging relates to Zoom fatigue and autistic traits in the neurodiverse workforce. It also tested whether gender moderates the indirect pathway from autistic traits to Zoom fatigue through camouflaging. Autistic traits were strongly associated with social camouflaging, supporting Hypothesis 1a. Autistic traits were also directly associated with Zoom fatigue, supporting Hypothesis 1b. The biopsychosocial model proposes that neurodiverse traits and environmental demands work together to produce fatigue (Santomauro et al., 2025; Weber et al., 2024). Sensory sensitivity, artificial eye contact demands, and difficulty processing multiple faces in gallery view are documented drivers of Zoom fatigue in the general population (Bailenson, 2021; Mokshita & Saha, 2024). Each of these is amplified for individuals with elevated autistic traits.

Autistic traits were associated with camouflaging and Zoom fatigue in a sample composed mostly of adults with ADHD. Most participants reported ADHD (84.9%), and fewer reported autism (40.5%). Participants could report more than one neurotype. The AQ measures autistic traits as a continuum rather than as a diagnostic category (Baron-Cohen et al., 2001). Scores follow a continuous distribution in the general population (Hoekstra et al., 2008). Adults with social anxiety disorder or obsessive-compulsive disorder also score above the general population mean, although the highest scores remain specific to autism (Hoekstra et al., 2008). The present sample showed elevated autistic traits overall. The mean AQ score (M = 28.01) fell between the means for general population controls (M = 16.4) and autistic adults (M = 35.8) in the original validation study (Baron-Cohen et al., 2001). Camouflaging also extends beyond autism. In a sample of adults with ADHD, 91.6% reported camouflaging their ADHD traits, and fewer than one in five identified as autistic (Mylett et al., 2026). Adults with ADHD report more camouflaging than adults without autism or ADHD, but less than autistic adults (van der Putten et al., 2024). Among adults with autism and/or ADHD diagnoses, autistic traits were associated with camouflaging, whereas ADHD traits were not (van der Putten et al., 2024). Accordingly, the present findings describe autistic traits across neurotypes rather than autism as a diagnosis. The study did not compare diagnostic groups. The findings therefore do not show whether these pathways differ between autistic and ADHD participants.

Social camouflaging was a strong predictor of Zoom fatigue, supporting Hypothesis 2. It accounted for nearly a quarter of the variance in Zoom fatigue. Employees who camouflage heavily report substantially more depletion after virtual meetings than those who do not. This finding extends prior work on videoconferencing fatigue (Fauville et al., 2021; Mokshita & Saha, 2024) by identifying camouflaging as a distinct source of cognitive load in virtual meetings. Camouflaging depletes cognitive resources needed

for other tasks, and neurodivergent adults describe it as mentally, physically, and emotionally exhausting (Mylett et al., 2026). The present findings provide the first empirical evidence that this exhaustion compounds inside virtual meetings. Camouflaging also partially mediated the relationship between autistic traits and Zoom fatigue, supporting Hypothesis 3. The indirect effect through camouflaging accounted for roughly 60% of the total effect. Camouflaging is one identifiable mechanism linking autistic traits to virtual meeting fatigue, but it is not the only one. The remaining direct effect shows that autistic traits have a lasting effect, most likely through sensory and perceptual demands that are not related to social performance (Bailenson, 2021; Mokshita & Saha, 2024). This is consistent with the biopsychosocial model (Doyle, 2020), where neurodivergent traits and environmental demands produce fatigue through multiple converging pathways.

The moderated mediation was significant, supporting Hypothesis 4. The indirect effect of autistic traits on Zoom fatigue through camouflaging was approximately twice as strong for women as for men. Women and men with the same level of autistic traits incur different fatigue costs through camouflaging. Women face stronger social norms around warmth, emotional reciprocity, and interpersonal attentiveness (Hull et al., 2017). Higher autistic traits create a larger gap between natural presentation and those gendered expectations. Women face stronger social pressure to appear neurotypical than men, which may explain why autistic traits translate more strongly into camouflaging behavior for women (Hull et al., 2021). This finding aligns with the observation that women experience higher Zoom fatigue than men (Fauville et al., 2021). The platform alone does not account for the differences in fatigue between men and women. Taken together, autistic traits are distributed across the workforce, are associated with measurable camouflaging behavior, and relate to virtual meeting fatigue through both social-cognitive and sensory factors. The cognitive cost of virtual meetings is therefore unevenly distributed across the workforce, with the greatest burden reported by women with elevated autistic traits.

Implications for Research

The first implication is that this study adds empirical support for the biopsychosocial model in a workplace setting with neurodivergent employees. The model frames camouflaging as a coping response to the gap between neurodivergent presentation and environmental expectations (Doyle, 2020). The current findings show that this gap produces measurable depletion within a specific work context. Person-side factors and environment-side factors both contribute to fatigue. Neither operates alone. This positions the biopsychosocial model as a useful organizing framework for occupational neurodiversity research.

Secondly, camouflaging gains standing as a workplace construct. Prior work has examined camouflaging as an identity-related, clinical, or social phenomenon. The present findings show that camouflaging carries occupational costs that are measurable, separable from diagnostic status, and gendered in their distribution. This expands the construct's scope. It also opens camouflaging to integration with established occupational frameworks, including job demands-resources, conservation of

resources, and cognitive load theory. Each of these frameworks can plausibly accommodate camouflaging as a depleting demand.

Practical Implications

These findings have direct implications for managers and organizations that rely on virtual meetings. Virtual meetings are not experienced equally. For workers with elevated autistic traits, Zoom fatigue reflects more than meeting load. It also reflects the hidden work of camouflaging. These employees spend cognitive and emotional energy managing facial expressions, eye contact, tone, and perceived attentiveness while processing information and contributing ideas. Managers should not read camera-off participation, limited expressiveness, delayed responses, or post-meeting fatigue as disengagement. These behaviors reflect the cost of meeting norms built around narrow assumptions about attention and professionalism.

Leaders should design meetings to reduce the need for camouflaging rather than ask neurodivergent workers to absorb the cost. Cameras should be optional unless visual presence is task-relevant. Leaders can normalize 1) turning off self-view, 2) audio-only participation, 3) chat contributions, 4) looking away from the screen, 5) longer response times, and 6) written input before or after meetings. These practices decouple effective participation from neurotypical performance cues. The goal is not to make everyone look equally engaged. The goal is to let people contribute without unnecessary cognitive strain.

Managers should also treat meeting load as a work design issue. Back-to-back meetings, long meetings, and meetings without clear purpose create avoidable fatigue. The effects compound for workers who camouflage throughout the day. Leaders can protect recovery time between meetings, shorten default meeting lengths, use agendas to clarify purpose, and replace some synchronous meetings with asynchronous updates. These are not etiquette recommendations. They are accommodations that reduce cognitive demand and make the work environment more sustainable for neurodivergent employees.

Managers should also attend to gendered expectations in virtual meetings. The indirect pathway from autistic traits to Zoom fatigue through camouflaging was stronger for women than for men. Women with elevated autistic traits face greater pressure to appear socially fluent, warm, and attentive on screen. Leaders can reduce this burden by avoiding informal expectations that women carry disproportionate relational labor, such as smoothing conflict, tracking emotional tone, or maintaining group cohesion. Structured facilitation distributes social demands more fairly. Practical steps include rotating meeting roles, clear turn-taking procedures, multiple forms of contribution, and written follow-up.

Finally, these results point to the need for manager training in neuroinclusive meeting practice. Leaders receive general advice on running virtual meetings but little guidance on how meeting norms affect neurodivergent employees. Inclusion is not achieved by inviting everyone into the same meeting space. Inclusion requires designing meetings so employees can participate without masking, suppressing, or

over-managing their natural communication styles. Improving virtual meetings is therefore a concrete strategy for both meeting effectiveness and employee well-being.

Limitations

There are several limitations to consider. This study used a cross-sectional design, preventing causal inference. Social camouflaging may drive Zoom fatigue, or Zoom fatigue may heighten awareness of camouflaging behaviors. The mediation models imply directional relationships, but the data cannot confirm temporal ordering. This study used a binary gender comparison, excluding gender-diverse workers. Gender-diverse individuals may face compounded camouflaging demands, given simultaneous pressure to conform to normative gender expectations and neurotypical social standards (Hull et al., 2021; Mylett et al., 2026). Whether this translates to greater fatigue costs than those observed for women remains an empirical question. Participants also self-identified their neurodivergent status without formal diagnostic verification. Self-identification is valid in neurodiversity research given well-documented barriers to diagnosis, including cost, waitlists, and stigma (Sgro et al., 2025; Van Rijswijk & Curșeu, 2025). The absence of diagnostic confirmation may introduce noise into trait-level analyses.

Researchers developed and validated the CAT-Q with autistic populations (Hull et al., 2019). This study applied it to a broader neurodivergent sample, where camouflaging may present differently. The CAT-Q may not capture ADHD-specific behaviors such as suppressing hyperactivity or masking chronic lateness (Van Der Putten et al., 2024). Finally, this study examined only virtual meetings. Camouflaging demands likely differ across modalities. In-person meetings involve additional sensory and social demands. Hybrid formats introduce asymmetry between remote and co-located participants.

Future Directions

Looking forward, longitudinal designs are needed to establish whether camouflaging precedes fatigue within and across meetings. Daily diary and experience sampling methods would allow researchers to track within-person fluctuations across consecutive meetings. Also, future research should incorporate objective fatigue indicators and behavioral camouflaging measures to reduce common method concerns. Physiological, behavioral, and observer-rated measures would complement self-report.

Existing camouflaging instruments were not designed for workplace or virtual meeting contexts. ADHD-specific behaviors (suppressing hyperactivity, masking chronic lateness) are not well captured by the CAT-Q (Van Der Putten et al., 2024). Condition-specific and context-specific measures would better isolate the cognitive demands of professional social performance. Additional mechanisms linking autistic traits to Zoom fatigue warrant investigation. Sensory sensitivity, artificial eye contact demands, and difficulty processing gallery view are plausible candidates. Whether these findings extend to in-person and hybrid meeting contexts remains an empirical question.

Conclusion

Social camouflaging is a measurable mechanism linking autistic traits to Zoom fatigue. Gender amplifies that pathway. The cognitive labor neurodivergent employees perform inside virtual meetings is invisible in platform-focused fatigue research. Measuring autistic traits dimensionally, treating camouflaging as a workplace construct, and accounting for gendered social expectations produces a more accurate picture of who bears the cognitive cost of virtual meetings, and why.

Statements and Declarations

Ethical considerations

This study was approved by the University of Utah IRB board as exempt. Informed consent was obtained from all individual participants included in the study.

Consent to Participate

Informed consent was obtained via written agreement collected through Qualtrics.

Declaration of conflicting interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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References

1. Bailenson, J. N. (2021). Nonverbal overload: A theoretical argument for the causes of Zoom fatigue. Technology, Mind, and Behavior, 2(1). https://doi.org/10.1037/tmb0000030
2. Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). The Autism-Spectrum Quotient (AQ): Evidence from Asperger Syndrome/High-Functioning Autism, Males and Females, Scientists and Mathematicians. Journal of Autism and Developmental Disorders, 31(1), 5–17. https://doi.org/10.1023/A:1005653411471
3. Doyle, N. (2020). Neurodiversity at work: A biopsychosocial model and the impact on working adults. British Medical Bulletin, 135(1), 108–125. https://doi.org/10.1093/bmb/ldaa021
4. Fauville, G., Luo, M., Queiroz, A. C. M., Bailenson, J. N., & Hancock, J. (2021). Zoom Exhaustion & Fatigue Scale. Computers in Human Behavior Reports, 4, 100119. https://doi.org/10.1016/j.chbr.2021.100119

5. Hoekstra, R. A., Bartels, M., Cath, D. C., & Boomsma, D. I. (2008). Factor Structure, Reliability and Criterion Validity of the Autism-Spectrum Quotient (AQ): A Study in Dutch Population and Patient Groups. Journal of Autism and Developmental Disorders, 38(8), 1555–1566. https://doi.org/10.1007/s10803-008-0538-x
6. Hull, L., Levy, L., Lai, M. C., Petrides, K. V., Baron-Cohen, S., Allison, C., Smith, P., & Mandy, W. (2021). Is social camouflaging associated with anxiety and depression in autistic adults? Molecular Autism, 12(1), 13. https://doi.org/10.1186/s13229-021-00421-1
7. Hull, L., Mandy, W., Lai, M. C., Baron-Cohen, S., Allison, C., Smith, P., & Petrides, K. V. (2019). Development and Validation of the Camouflaging Autistic Traits Questionnaire (CAT-Q). Journal of Autism and Developmental Disorders, 49(3), 819–833. https://doi.org/10.1007/s10803-018-3792-6
8. Hull, L., Petrides, K. V., Allison, C., Smith, P., Baron-Cohen, S., Lai, M. C., & Mandy, W. (2017). Putting on My Best Normal: Social Camouflaging in Adults with Autism Spectrum Conditions. Journal of Autism and Developmental Disorders, 47(8), 2519–2534. https://doi.org/10.1007/s10803-017-3166-5
9. Livingston, L. A., Shah, P., & Happé, F. (2019). Compensatory strategies below the behavioural surface in autism: A qualitative study. The Lancet Psychiatry, 6(9), 766–777. https://doi.org/10.1016/S2215-0366(19)30224-X
10. Mokshita, B., & Saha, S. (2024). Combating Zoom Fatigue: A Review of the Causes and Recommendations to Curb it. The International Journal of Indian Psychology, 12(3). https://doi.org/10.25215/1203.016
11. Mylett, M. L., Boucher, T. Q., & Iarocci, G. (2026). I wish I could just be myself: Experiences of Social Camouflaging in Adults with ADHD. Research in Neurodiversity, 100018. https://doi.org/10.1016/j.rin.2026.100018
12. Pearson, A., & Rose, K. (2021). A Conceptual Analysis of Autistic Masking: Understanding the Narrative of Stigma and the Illusion of Choice. Autism in Adulthood, 3(1), 52–60. https://doi.org/10.1089/aut.2020.0043
13. Santomauro, D. F., Erskine, H. E., Mantilla Herrera, A. M., Miller, P. A., Shadid, J., Hagins, H., Addo, I. Y., Adnani, Q. E. S., Ahinkorah, B. O., Ahmed, A., Alhalaiqa, F. N., Ali, M. U., Al-Marwani, S., Almazan, J. U., Almustanyir, S., Alvi, F. J., Amer, Y. S. A. D., Ameyaw, E. K., Amiri, S., & Ferrari, A. J. (2025). The global epidemiology and health burden of the autism spectrum: Findings from the Global Burden of Disease Study 2021. The Lancet Psychiatry, 12(2), 111–121. https://doi.org/10.1016/S2215-0366(24)00363-8
14. Sgro, G., Coit, M., Sullivan, B. D., Valentine, M., Chavez, S., & Tran, A. (2025). Barriers to attention-deficit/hyperactivity disorder diagnosis in adults: Findings from a qualitative study. Mathematica. https://aspe.hhs.gov/reports/barriers-adhd-diagnosis-adults
15. Van Der Putten, W. J., Mol, A. J. J., Groenman, A. P., Radhoe, T. A., Torenvliet, C., Van Rentergem, J. A. A., & Geurts, H. M. (2024). Is camouflaging unique for autism? A comparison of camouflaging

between adults with autism and ADHD. Autism Research, 17(4), 812–823. https://doi.org/10.1002/aur.3099

16. Van Rijswijk, J., & Curșeu, P. L. (2025). Formal Versus Self-Identified Neurodivergence: A Comparative Study in Work Environments. Behavioral Sciences, 15(4), 420. https://doi.org/10.3390/bs15040420
17. Weber, C., Krieger, B., Häne, E., Yarker, J., & McDowall, A. (2024). Physical workplace adjustments to support neurodivergent workers: A systematic review. Applied Psychology, 73(3), 910–962. https://doi.org/10.1111/apps.12431

Figures

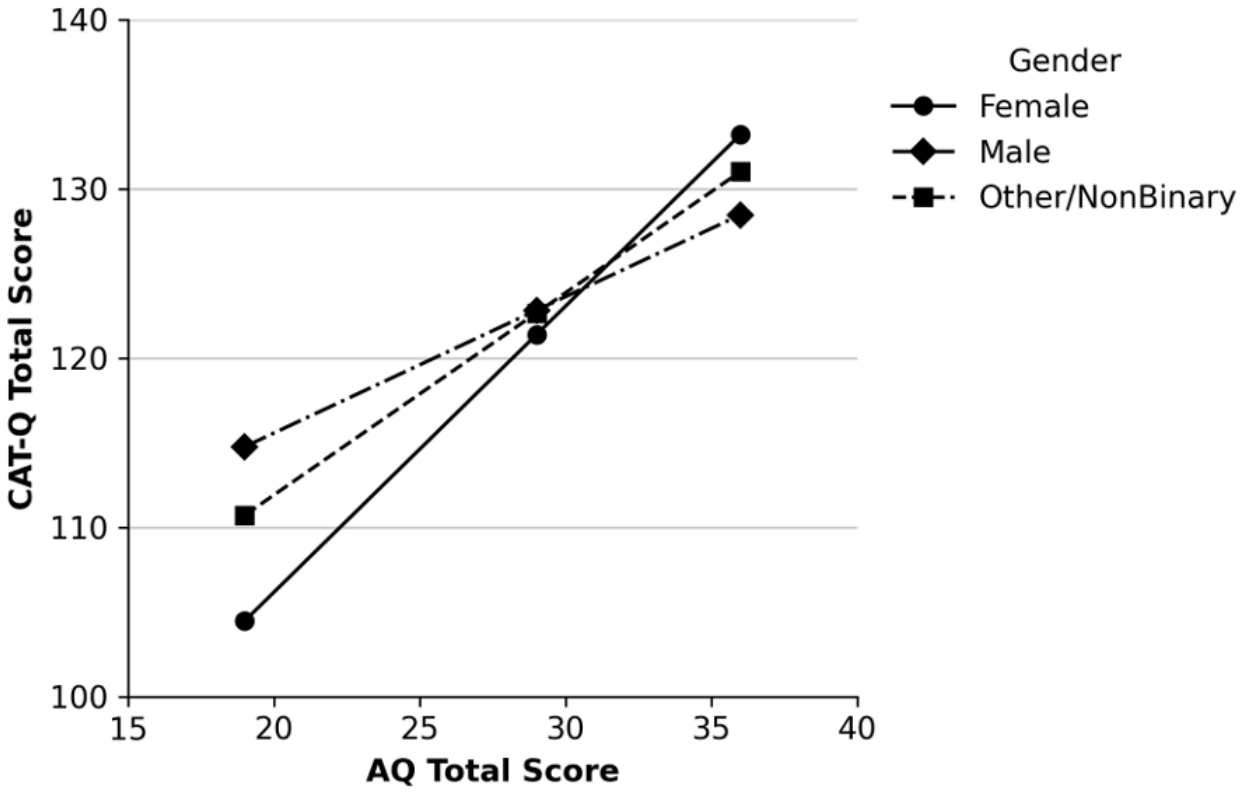
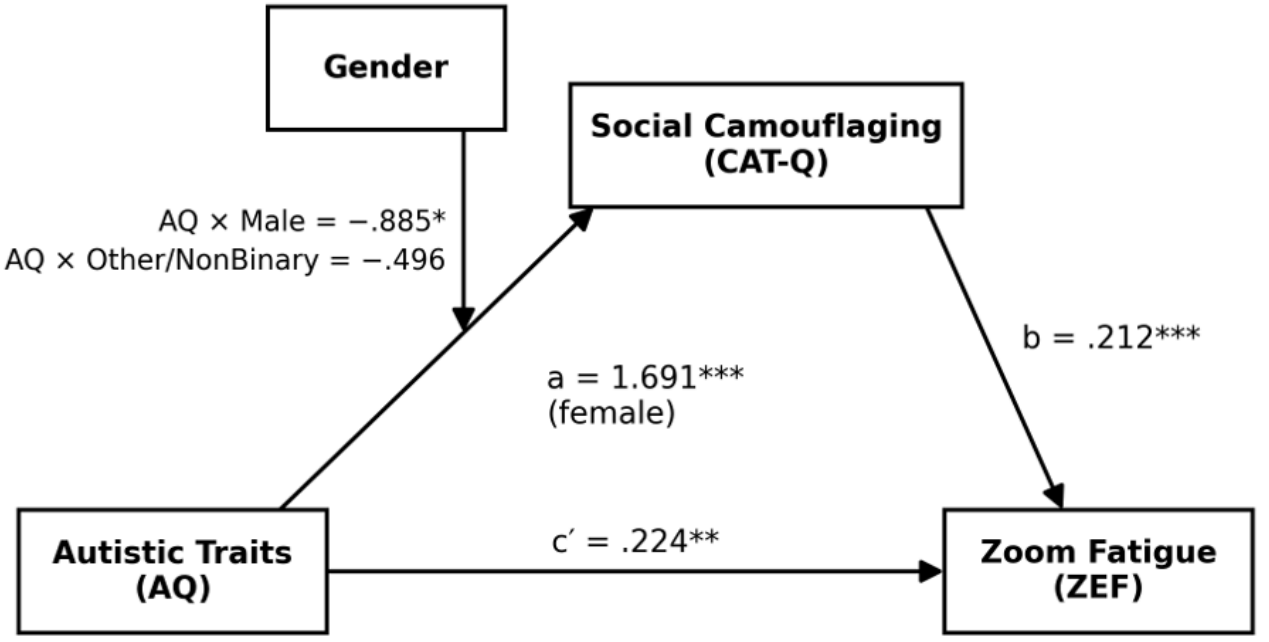


Figure 1

Association Between Autistic Traits and Social Camouflaging by Gender

Note. AQ scores are shown on the original 0 to 50 scale. Points mark the 16th, 50th, and 84th percentiles of AQ. Predicted CAT-Q scores are based on the PROCESS Model 7 estimates in Table III.



Conditional Indirect Effect of AQ on ZEF Through CAT-Q

	Effect	*95% BC CI*
Female	.359	[.250, .481]
Male	.171	[.029, .349]
Other/NonBinary	.253	[.077, .447]
Index of moderated mediation (male vs. female)	−.188	[−.356, −.025]

Figure 2

Moderated Mediation Model Linking Autistic Traits to Zoom Fatigue Through Social Camouflaging

Note. Values are unstandardized coefficients from PROCESS Model 7 (Hayes, 2022; *N* = 332). AQ was mean centered. Female is the reference group, so *a* is the conditional effect for women. The conditional *a* paths are .806 for men and 1.195 for other/nonbinary participants. Gender main effects on CAT-Q were nonsignificant (see Table 3). Brackets show 95% bias-corrected bootstrap confidence intervals from 5,000 samples. *$p < .05$. **$p < .01$. ***$p < .001$.