The Effect of Perceived Dissimilarity on Student Academic Performance and the Mediating Role of Sense of Belonging

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Abstract

Academic performance is significantly influenced by the needs and emotions of students, such as their sense of belonging (SoB). Perceived deep-level dissimilarity has been shown to negatively influence SoB in the workplace. Concealable stigmatized identities (CSI) are perceived deep-level dissimilarities that, according to previous research, are related to lower levels of SoB and performance. Furthermore, research suggest that individuals possessing a CSI tend to display higher levels of avoidant coping (AC). The current study aims to examine if SoB mediates the relation between perceived dissimilarity in CSI (i.e. CSI in sexuality and mental health) and perceived academic performance (PAP). Additionally, the role of AC is investigated. In the present study, a questionnaire asked our participants (n = 128) to rate their perceived dissimilarity in CSI, SoB, AC, and PAP. A simple linear regression showed that CSI was no significant predictor for PAP. Subsequently, SoB did not mediate the relation between CSI and PAP. However, with CSI in sexuality as the independent variable, a mediation took place. Lastly, AC was no significant moderator. We conclude that interventions aiming to improve PAP for students possessing CSIs should take SoB into account. Research including more individuals with CSIs is required in order to further investigate the effects of perceived deep-level dissimilarities in CSI on SoB and PAP.

Keywords: Sense of belonging, concealable stigmatized identities, Avoidant Coping, Perceived Academic Performance

The Effect of Perceived Dissimilarity on Student Academic Performance and the Mediating Role of Sense of Belonging

There are several factors influencing how well a student performs at university. Many of the determining points go beyond intelligence and attitude. According to previous research, the emotional needs and problems of a student explain 20.25% of academic performance (Dagdag et al., 2019). Researchers have recognized that individuals belonging to stigmatized groups might be negatively affected by their dissimilarity in various areas of their life, such as psychological well-being, physical health and achievements. Negative effects on workplace satisfaction, the ability to regulate learning behaviours and feelings of authenticity are common results of identity threats and stigma (Reinka et al., 2020; Slepian & Jacoby-Senghor, 2020; Van Laar et al., 2019). Something that connects all stigmatized groups is the human need for a sense of belonging (SoB). Research findings suggest that a reduced SoB might decrease academic success (i.e., average grade in college) of students who perceive themselves as being dissimilar from other students (Glass & Westmont, 2014). The central focus of our study is the impact of SoB on perceived academic performance (PAP) for students who perceive themselves as dissimilar.

Previous research has mostly focused on the relationships between perceived dissimilarity, SoB and performance in the workplace (Newheiser & Barreto, 2014; Şahin et al., 2019; Van Laar et al., 2019). These studies have investigated both deep-level and surface-level dissimilarity. Surface-level dissimilarities are, compared to deep-level dissimilarities, more visible and detectable (e.g., age, gender). Deep-level dissimilarities are mostly underlying characteristics (e.g., beliefs, values). Research suggests that mainly perceived deep-level dissimilarity has a significant negative effect on belonging. One previous study (Şahin et al., 2019) showed that invisible characteristics (e.g., beliefs) significantly predicted feeling included in the workplace (i.e., SoB) while more visible characteristics (e.g., age) did not. Building upon these findings, the current study focuses on perceived deep-level

dissimilarity, in particular on dissimilarity in terms of concealable stigmatized identities (CSI). CSI are identities or attributes that can be hidden and are devalued by society, such as mental illness or a HIV+ status (Quinn et al., 2014). Both perceived deep-level dissimilarity and CSI are individual differences that tend to be hidden. In this study we combine these two constructs by examining perceived deep-level dissimilarity in CSI (Şahin et al., 2019; Quinn et al., 2014). Our study examines CSIs of minority sexual orientation and mental illness since research shows that sexual minority status is related to negative mental health outcomes (Rodriguez-Seijas et al., 2019). Specifically, a large body of research shows that lesbian, gay and bisexual (LGB) youths have a higher prevalence of depression and anxiety diagnoses than non-LGB youths and are at an increased risk for suicide attempts (Branstrom, 2017).

One possible explanation for the correlation between sexual minority status and negative mental health outcomes is provided by the minority stress theory (Van Der Pol-Harney & McAloon, 2018). This theory states that individuals belonging to a minority group, such as a sexual minority, are frequently confronted with negative responses to their identity in the form of rejection and harassment. The negative responses have adverse outcomes and often play a role in the development of mental disorders (Van Der Pol-Harney & McAloon, 2018). Subsequently, the stigmatization associated with having a mental disorder increases the vulnerability to distress additional to existing psychological complaints (Oexie et al., 2017).

The present study investigates how perceived dissimilarity in CSI affects SoB, and in turn, PAP. Furthermore, the study aims to find out to what extent avoidant coping (AC); for instance, concealing the stigmatized identity, moderates the relationship between CSI and SoB. The present study thus aims to, first, replicate and extend previous research on stigmatized identities (Newheiser & Barreto, 2014; Reinka et al., 2020; Van Laar et al., 2019) by focusing on perceived deep-level dissimilarity in two CSI in the student population. Second, the study investigates to what extent AC moderates the relationship between

perceived dissimilarity of students possessing a CSI and their SoB. Third, the study replicates previous research (Şahin et al., 2019) reporting a mediation of SoB between perceived dissimilarity and performance in a different setting (i.e., the workplace). The current study tests if this mediating effect exists in the student population, with PAP representing the outcome variable. Our overarching research question is: How does perceived deep-level dissimilarity in CSI (CSI) affect PAP and what role do SoB and AC play in this relationship?

Perceived Dissimilarity and Academic Performance

According to MacPhee et al. (2013) underrepresented Science/Technology/Engineering/Math (STEM) majors showed lower levels of academic self-efficacy and performance compared to STEM majors with no minority status. The possession of multiple STEM minority statuses, compared to a single STEM minority status, was related to lower scores on all measures of academic performance. These findings suggest that a higher amount of dissimilarities is related to lower levels of academic performance.

Furthermore, previous research (Liao et al., 2008) demonstrated that perceived self-to-team deep-level dissimilarity had a significant negative relation to helping behaviour and overall job attitude. Additionally, the study found that perceived deep-level dissimilarity had a positive effect on withdrawal behaviour and voluntary turnover. These effects were significant even when controlling for actual dissimilarity and perceived surface-level dissimilarity (Liao et al., 2008). Compatible with these findings is another study (Lane & Gibbons, 2007) which found that prototype similarity was an important predictor for length of enrolment. Students who rated their similarity to the typical student as low remained enrolled for a shorter amount of time than students who rated themselves as a more prototypical. Prototype similarities were qualities and traits (e.g., intelligence, maturity) that can be categorized as deep-level dissimilarities.

Our measurement of PAP (Hsiao et al., 2017) examines students' confidence in their academic performance. According to Zhong (2007), confidence is part of psychological capital. Psychological capital is positively related to performance, commitment and organizational citizenship behaviour. Lane and Gibbons (2007); and Liao et al (2008) showed the negative impact of perceived dissimilarity on commitment and organizational citizenship behaviour. We assume that these findings are indicators for PAP and that PAP is impacted by perceived dissimilarity.

Hypothesis 1: High levels of CSI are negatively related to students' PAP

SoB mediating the relation between CSI and PAP

Şahin et al. (2019) showed that perceived deep-level dissimilarity had a negative relationship to felt inclusion while perceived surface-level did not. Felt inclusion consisted of measures on belonging and authenticity. Moreover, Şahin et al. (2019) found that feelings of inclusion of employees were beneficial for job satisfaction, work-related stress, career commitment, turnover intentions and career advancement motivation. We expect that an effect of SoB on performance (i.e. PAP) can also be found in the student population.

Compatible with these findings, Suhlman et al.(2018) found that the person-environment fit (i.e., values and norms) predicted SoB. Moreover, SoB mediated the relationship between person-environment fit and academic outcomes (i.e. academic motivation and intention to drop out). Furthermore, previous research (Glass & Westmont, 2014) suggests that discriminatory experiences were negatively related to belongingness which, in turn, had a direct positive effect on academic success.

More specifically to our current study's focus, previous research suggests that individuals with CSIs have more negative experiences relating to their identity that influence their expectations and behaviour (Newheiser & Barreto, 2014; Reinka et al., 2020). Based on these findings, we assume that students with CSIs are more likely to anticipate stigma and, in

turn, have a weakened SoB. We expect that a high score for CSI relates negatively to SoB and that a high score for SoB relates positively to PAP.

Hypothesis 2: SoB mediates the relationship between CSI and PAP.

AC moderating the relation between CSI and SoB

Previous research (Newheiser & Barreto, 2014) found that participants - when offered the two options to either hide or reveal their stigmatized identities within a workplace, generally, chose to hide. These participants expected that revealing their identity would be detrimental to their workplace relationships. In accordance with these findings, research has shown that individuals with multiple CSI anticipated more stigma (Reinka et al., 2020).

Newheiser and Barreto (2014) showed that individuals who hide a stigmatized identity experienced a decreased SoB. These participants anticipated interpersonal benefits from hiding their identities. Contrary to their expectation, participants who concealed their identity engaged in less intimacy-building behaviours (i.e. self-disclosure) which influenced feelings of authenticity and, in turn, SoB in a negative way. We assume that students who conceal more of their identity (i.e., AC) tend to engage in less authentic interactions and hence do not form a strong SoB.

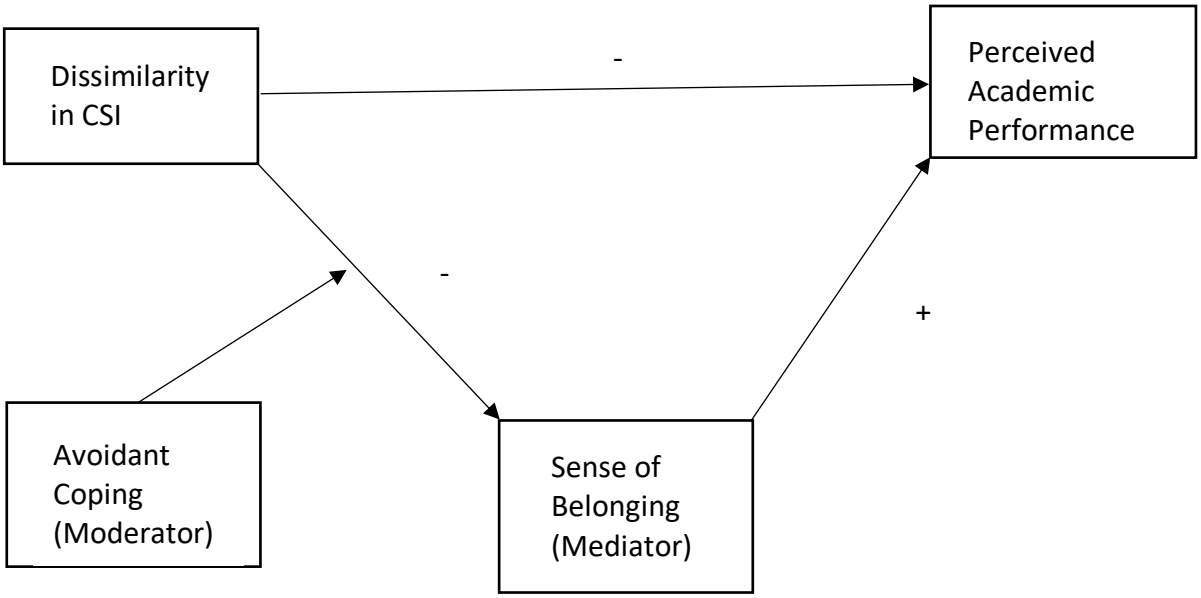
Similarly, previous research (Slepian et al., 2019) revealed that feeling unable to be one´s true self was linked to a decreased SoB. Slepian et al. (2019) refer to the State Authenticity as Fit to the Environment model (Schmader & Sedikides, 2018) as a possible explanation for the observed effect. The model suggests that the feeling of not fitting in (i.e. perceived dissimilarity) leads an individual to experience self-consciousness and to rely more on self-monitoring, and self-presentation (i.e., concealment of the true self). The Fit to the Environment model supports our assumption that feeling dissimilar relates to the tendency to use concealment (i.e. AP) and thereby deprive oneself of experiences that are crucial to foster

a SoB. We propose that AC strengthens the negative relationship between perceived deep-level dissimilarity and SoB.

Hypothesis 3: AC moderates the relationship between CSI and SoB.

Figure 1

Hypothesized Research Model



Methods

Participants

A total of 128 participants, excluding non-completers (*n*=15), took part in the study. The sample consisted of 23 men, 104 women, and one participant who preferred to not disclose their gender. Ninety-seven (75.8 %) participants identified as heterosexual, five as gay/lesbian, 15 as bisexual, five as other, and five participants did not disclose their sexuality. Furthermore, 93 Participants were in the first study year, 20 in the second year and 14 in the third year. Looking at the data we can see that the majority of participants (n=79) were students from the Dutch track while 49 students indicated to belong to the English-taught

track. Eighty-four participants were Dutch, 24 participants were German and 20 belonged to another nationality. The only selection criterion for the sample was to be a Psychology student of the University of Groningen.

Procedure

Ethical approval for this study was granted by the Ethical Committee Psychology (ECP) affiliated with the University of Groningen, Netherlands. Informed consent was obtained from all participants included in the study.

Recruitment was done via social networks and with the help of Whatsapp groups utilized by Psychology students of all years and from both tracks. Most students of our sample are first year students who participated via the SONA system, receiving course relevant credits. Other students did not receive an incentive for participation. The participants provided informed consent and the questionnaire was completed in Qualtrics with a duration of approximately 5 minutes. The questionnaire comprised questions asking for demographic information and items measuring perceived deep-level dissimilarity in CSI, SoB, AC and PAP.

Measures

Perceived Dissimilarity (CSI)

To measure perceived dissimilarity we used two items, adapted from the Şahin et al. (2019) scales. The items measured the perceived deep-level dissimilarity in CSIs. One item focused on perceived dissimilarity regarding mental health and the second item measured perceived dissimilarity regarding sexuality (r= .212, p=.016). Participants were asked to indicate on a 5-point Likert scale (1= *definitely not*, 5= *definitely yes*), to what extent they feel dissimilar in these regards. The utilized items were: “In terms of mental health, I am the same as most other students in the Psychology program.” (CSI1) and “In terms of sexuality, I am the same as most other students in the psychology program.” (CSI2).

Avoidant Coping

AC was assessed with the 4-item scale of factor "Concealment/Pretence Coping Style" of the Coping with Identity Threat Scale (α=.64) (Jaspal et al., 2020). An example item is: "I tend to hide who I really am.". Assessment was made using a 5-point Likert scale (1= *Not at all true for me*, 5= *very true for me)*.

Sense of Belonging

We assessed SoB with the 5-item scale measuring anticipated school connectedness (α = .74) (Williams et al., 2020). Since the items are intended for high school students we used an alternated version to fit our population of university students. An example item is: "I feel close or will soon become close to students in the psychology program." The items were scored on a 5-point Likert scale (1= *Definitely false*, 5= *Definitely true)*.

Perceived Academic Performance

PAP was measured using a 4-item scale from Hsiao et al. (2017) with an alpha of α=.86. For the assessment of PAP we asked the participants to indicate to what extent they agree with the statements on a 5-point Likert scale (1= *definitely not*, 5= *definitely yes*). An example statement is: "I am confident in my academic and learning abilities."

Results

Analysis Plan

In order to test Hypothesis 1, we conduct a simple linear regression analysis using SPSS. For Hypothesis 2, we compute the correlations between CSI, SoB, AC and PAP. If the correlations are significant a mediation analysis will examine whether SoB mediates the relation between CSI and PAP. For Hypothesis 3, we conduct a moderation analysis.

Assumptions Check

For our analysis, the data had to meet specific conditions. We checked the following assumptions: (1) linearity, (2) normality, (3) homogeneity of variances, (4) absence multicollinearity, (5) uncorrelatedness of residuals and (6) absence of outliers.

The Scatterplot of standardized residuals and the standardized predictive values showed that the assumptions of (1) linearity, and (3) homogeneity of variances were not violated (see Figure 2, in the Appendix). The P-P Plot (see Figure 1, in the Appendix) was utilized to check the assumption of (2) normality and indicated no violation of the assumption.

The Variance Inflation Factors (VIFs) show that the assumption of (4) absence of multicollinearity was not violated (highest VIF = 1.119, lowest VIF = 1.033). The Durbin-Watson value = 2.157 indicates that the assumptions of (5) uncorrelatedness of residuals was met. Lastly, we detected one outlier (case number: 95) but decided to not remove the observation as it did not significantly change our findings.

Descriptive Data

Table 1 provides the mean values and standard deviations of the variables included in our model. It shows that participants indicated relatively high levels of both SoB (M = 3.96) and PAP (M = 3.69, SD = .82). These values suggest that, in general, students agreed with the positive statements regarding SoB and PAP. The values for AC (M = 2.84, SD = .75), CSI (M = 2.80, SD = .72), CSI1(M = 3.09) and CSI2 (M = 2.50) indicate generally neutral levels. According to the averages, students, overall, did not perceive themselves as highly dissimilar to other students when it comes to mental health and sexuality. However, the lower mean value for CSI2 suggests a tendency for the students to perceive themselves as slightly less dissimilar in terms of sexuality than mental health. The variances between students was relatively high for the variables CSI1 (SD =. 95) and CSI2 (SD = .90). Students´s responses regarding perceived dissimilarity were more varied while there was less variation for SoB (SD = .56). Furthermore, the participants did not show a tendency to utilize AC frequently.

Table 1

Frequencies, Means, Standard Deviations, and Correlations of the Variables of Interest

Variables	Mean (*SD*)	*n*	CSI	CSI1	CSI2	AC	SoB	PAP
CSI	2.80 (.72)	128	1	.793**	.763**		-.179*	-.157
CSI1	3.09 (.95)	128	.793**	1	.212*			-.006
CSI2	2.50 (.90)	128	.763**	.212*	1		-.338**	-.244**
AC	2.84 (.75)	126				1	-.297**	-.225*
SoB	3.96 (.56)	127	-.179*		-.338**	-.297**	1	.326**
PAP	3.68 (.82)	125			-.244**	-.225*	.326**	1

Note: CSI: Concealable stigmatized identity, CSI1: mental health CSI, CSI2: sexuality CSI, AC: Avoidant coping, SoB: Sense of belonging, PAP: Perceived academic performance
Note: *. Correlation is significant at the 0.05 level (2-tailed), **. Correlation is significant at the 0.01 level (2-tailed)

Perceived Dissimilarity and Academic Performance

To assess our first hypothesis, which proposes that CSI predicted PAP, we conducted a simple linear regression. We found an effect that is significant at a 10 % level (F (1,123) = 3.008, p = .081, R^2 = .024,). The regression coefficient (B = -.177, 95% CI [-.376, .002]) indicated that an increase in one CSI unit corresponded, on average, to a decrease of .177 units of PAP. As we expected significance at a 5% level our hypothesis is not supported. However, the results potentially indicate an effect.

Sense of belonging mediating between dissimilarity in CSI and PAP

CSI was not significantly correlated with SoB and PAP (see Table 1). Therefore, we did not conduct a mediation analysis. These findings are not in line with hypothesis 2.

However, exploratory further inspection of our data shows that the item regarding perceived deep-level dissimilarity in minority sexuality CSI (CSI2) was significantly related to PAP, as well as to SoB (see CSI2 in Table 1). This suggest the possibility of a mediating effect. Thus, we conducted a mediation analysis only including the item on CSI regarding sexuality as a measure of our IV as an exploratory part of this study. Step 1 of the model indicates that CSI2 was a significant predictor of SoB, B =-.212, t (124) = -4.015, p = .0001. Step 2 shows that SoB had a significant effect on PAP, B =.402, t (124) = 3.041, p = .003 and that, after controlling for SoB, CSI2 is no longer a significant predictor at a 5 % level for PAP, B = -.137, t (124) = -1.664, p = .099. These findings support a full mediation. Step 4 of the model indicates a significant indirect effect of SoB, effect = -.085, SE = .036, 95 % CI (-.166, -.024). We used the Sobel-test to confirm that this effect indeed supports mediation (z = -2.427, p = .015). SoB mediated the relationship between CSI and PAP.

Avoidant Coping moderating between CSI and SoB

We conducted a moderation analysis to test if AC moderates the relationship between perceived deep-level dissimilarities and SoB. The results of an analysis, including CSI as the IV, showed no significant interaction effect at a 5 % level (p = .062, b = .166, t = 1.881). However, we interpret this finding as marginally significant. It might indicate a potential effect.

Discussion

The purpose of this study was to gain a better understanding of the effect that perceived dissimilarity in CSI has on SoB, and in turn, PAP. Furthermore, the study investigated AC as a moderating variable between CSI and SoB.

There are three key findings of the present study. First, our results show that CSI was not a significant predictor for PAP at the expected 5% level. Second, we did not find a significant

mediation of SoB between the relations of CSI and PAP. However, we found a mediation effect when we included CSI in sexuality as the only item measuring our independent variable. Third, AC did not significantly moderate the relationship between CSI and SoB at a 10% significance level.

Perceived Dissimilarity and Academic Performance

Our first hypothesis, stating that perceived deep-level dissimilarity influences PAP in a negative way, was not supported at the expected level of significance (5%). A possible explanation for this finding is the low reliability of the scale of CSI as the two items show a low correlation. Previous research suggests that belonging to a sexual minority is related to more mental health problems (Branstrom, 2017). Therefore, we assumed that feeling dissimilar regarding sexuality and mental health would be highly correlated. A possible explanation for our contrasting findings might be that the present study used different variables than past studies. Previous research investigating the relation between sexual minorities and mental health focused on individuals identifying as LGB and individuals with psychiatric diagnoses (Branstrom, 2017; Rodriguez-Seijas et al., 2019) while the current study measured perceived dissimilarity. Our study did not consider whether the individual identifies with a sexual minority. Quinn and Chaudoir (2015) demonstrated that among people with CSIs, those individuals who consider their dissimilarity as central to their self-definition (i.e., identity centrality) displayed greater psychological distress. Thus, participants who viewed themselves as dissimilar regarding sexuality might not see their sexuality as a central part of their identity and hence did not experience the expected negative effects on mental health. We suggest that future research should investigate if identity centrality strengthens the effect of different types of perceived dissimilarity on mental health, SoB and PAP

Sense of belonging mediating between CSI and PAP

Hypothesis 2, stating that SoB mediates the relationship between perceived deep-level dissimilarity in CSI and PAP, was not supported by our data since the correlations were not

significant. Whereas past research has found SoB to mediate the relation between perceived deep-level dissimilarity and performance (Şahin et al., 2019; Suhlman et al., 2018), the present study found no mediation of SoB between CSI and PAP. When we only used the item measuring CSI in sexuality, instead of both items, we found that SoB mediated the relation between CSI2 and PAP. Consequently, CSI2 had higher correlations to both SoB and PAP compared to CSI1 (see Table 1). A possible reason for these findings might be our specific population. The current study focused on Psychology students. For a portion of the sample, the high level of psychoeducation of Psychology students might have buffered against the negative outcomes that are usually related to perceived dissimilarities. Mills et al. (2020) suggest that interventions which incorporate psychoeducation can reduce self-stigma. Self-stigma is the internalization of the negative perceptions and stereotypes of the socially devalued groups that an individual is part of (Corrigan, 2004). Therefore, individuals who study Psychology might experience a decreased level of self-stigma due to their education. Furthermore, research has shown that SoB buffers the negative impacts of self-stigma (Treichler, & Lucksted, 2018). The difference in correlation coefficients between the two CSI items to SoB suggests that another variable, such as self-stigma, could influence the relationship between perceived dissimilarity in CSI and SoB.

We suggest that future research should further investigate the relationship between self-stigma and SoB. Focusing on individuals with CSI that internalize their negative experiences, and experience high levels of self-stigma, might yield stronger effects on SoB and PAP.

Avoidant Coping moderating between CSI and SoB

The findings were not in line with hypothesis 3, stating that AC moderates the relationship between perceived deep-level dissimilarity in CSI and SoB. We expected AC to moderate the relationship between CSI and SoB. However, the moderation is only significant at a 10% level. The correlation of AC and SoB was significant whereas the correlation of AC

and CSI was not. The insignificant correlation between CSI and AC is inconsistent with research (Newheiser & Baretto, 2014) which found participants possessing a stigmatized identity to generally hide their identity. Nevertheless, the significant correlation between CSI and SoB is in line with the previous study (Newheiser & Baretto, 2014). One interpretation of these findings is that the students with a high score on CSI utilize other coping strategies that can be classified as AC. Craig et al. (2018) revealed that LGBT youth used AC most frequently compared to other coping. In their study AC included smoking, drinking, using drugs, playing down the problem, staying away from home and eating. Furthermore. Van Laar et al. (2019) suggest that stigmatized groups in the workplace, in addition to hiding their identity, tend to engage in coping that influences the individual on a cognitive level (e.g. vigilance to threat). These studies show that AC includes a wide range of behaviours. In terms of future research, it would be useful to include other coping strategies that are part of AC when examining if a high score on CSI is related to AC. Additionally, current findings could be extended by investigating how other variables (e.g. identity centrality and self-stigma) influence coping.

Limitations

The current study has three main limitations. The first limitation refers to the choice of sample. Due to the use of a convenience sample, our participants were predominantly heterosexual (75.8 %). Therefore, it remains to be established if our results are representative of students with CSIs and if the findings can be generalized to other populations. Future research should ensure that the group of interest is sufficiently represented in the sampling. Moreover, it is important to take the study background of our participants into account, as our sample only consists of Psychology students. Their education might decrease the effect that public stigma has on their self-perception. Thus, future research should examine the effects further by utilizing random samples and controlling for educational background regarding the variables of interest.

Secondly, there is not much research on our outcome variable, PAP. Consequently, we cannot conclude to what extent dissimilarity and SoB influence the academic performance of students. Using PAP as our outcome variable had the advantage that it provided more information on a construct that is rather insufficiently researched, compared to more objective academic outcomes. However, since all our variables of interest are focused on self-perception our findings do not reveal if the found effect impacts students beyond their view on themselves. Future research should explore whether other academic outcomes are influenced by dissimilarity and SoB similarly. Van Laar et al. (2019) suggest that members of stigmatized groups tend to experience cognitive and emotional depletion which, in turn, impacts regulation of learning behaviours, persistence, motivation. Therefore, future research should, for instance, take study habits into account when measuring academic performance.

Finally, the third limitation of our study is the measurement of perceived dissimilarity in CSI. The study aimed to gain knowledge on the way students with CSIs are affected by their perceived dissimilarities. However, since we only included two CSIs and found a low correlation between our items, we are unable to generalize our data to populations of different CSI. Our findings indicate the need to investigate the underlying mechanisms (e.g. identity centrality and AC) for different groups of CSI individually. In order to increase generalizability and the ability to differentiate between the experiences of different CSI groups, future research should include more CSIs and explore them separately, as well.

Implications

Our unexpected findings emphasize the importance of future research on the relationships included in our model. The present study established that there are significant connections between perceived deep-level dissimilarity, SoB, AC, and PAP in the student population. However, further research is required to establish how students are impacted by different CSIs and what coping strategies those students utilize that impact their SoB negatively. Furthermore, the mediation found in our exploratory research has practical

implications. The data suggests that SoB is an important target point for interventions aiming to support students with CSIs in their academic performance. Considering that many interventions support students with surface-level dissimilarities or require the student to be "out" about their identity, our findings advise universities to also utilize other types of interventions.

To provide a few practical examples, Van Laar et al. (2019) suggest interventions to support members of stigmatized groups in the workplace. These suggestions are based on findings that are in line with our conclusions. Therefore, the following interventions could be effective in the student population as well. There are two main approaches to follow in interventions for students with CSIs. The first approach aims to create identity safety. Identity safety reduces the likelihood that identity threat is triggered. The reduction of triggers is of importance as members of stigmatized groups generally experience higher levels of vigilance. Constant vigilance for threat, managing stereotype-relevant thoughts and feelings, and emotionally regulating threat are a few of the behaviours that lead to cognitive and emotional depletion. Notably, the depletion influences learning behaviours in negative ways and can lead to underperformance. Creating a safe environment could improve academic performance by reducing cognitive and emotional depletion for members of CSIs. A strategy to create a safe environment is, for instance, paying attention to and manipulating cues that signal safety. More specifically, reducing potential triggers and checking for representation of stigmatized groups are effective ways to intervene.

The second approach is related to identity safety as well. Van Laar et al. (2019) suggest to increase awareness on identity threats. Training programs can increase awareness, especially among individuals in leadership positions, on how subtle identity threats occur in daily interactions and on how to reduce threats by implementing supportive contextual factors (e.g. representation). This knowledge should, in turn, influence structures (i.e. selection procedures and availability of support networks) (Van Laar et al., 2019). Awareness of the

subtle barriers could provide the university with knowledge on how to positively change triggering cues and, as a result, student´s daily experiences and resources.

Furthermore, our findings indicate that self-stigma might be relevant when evaluating the effectiveness of possible interventions. Mills et al. (2020) reviewed self-help interventions that aim to reduce self-stigma. They suggest that self-help interventions are beneficial for individuals with high levels of self-stigma since self-disclosure is not a requirement. The review findings indicate that self-help interventions which draw on components of Acceptance and Commitment Therapy (ACT) and include psychoeducation may be beneficial for depression self-stigma. There is a need for research that explores the effectiveness of self-help interventions in supporting students with different CSIs, such as sexual minority. If self-help interventions increase SoB for students of different CSIs universities should consider providing students with these resources.

Conclusion

The present study aimed to explore how perceived deep-level dissimilarity in CSI (CSI) affects PAP. Furthermore, we examined the influence of SoB and AC on this relationship. This research established a mediation of SoB between perceived deep-level dissimilarity in CSI and PAP. Thus, our findings show that the mediating effect of SoB can not only be found in the workplace but also in the student population. Despite the limitations, our study enhanced the understanding of the relationships in our model and provided findings that hopefully stimulate investigation of other possible influential variables. Furthermore, our findings have some implications for interventions.In conclusion, universities need to be aware of the fact that many stigmatized identities can be hidden. This understanding is relevant since interventions aiming to support students with surface-level dissimilarities might not be helpful for students who possess CSIs. Interventions targeting subtle cues in the university-environment can provide students with a feeling of safety and might increase their SoB and PAP. Moreover, self-help interventions could reach students that would not be reached by

other interventions ignoring the difficulties around self-disclosure. If universities are able to meet more of the emotional needs of students they could potentially improve the overall academic success.

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Appendix

Figure 1

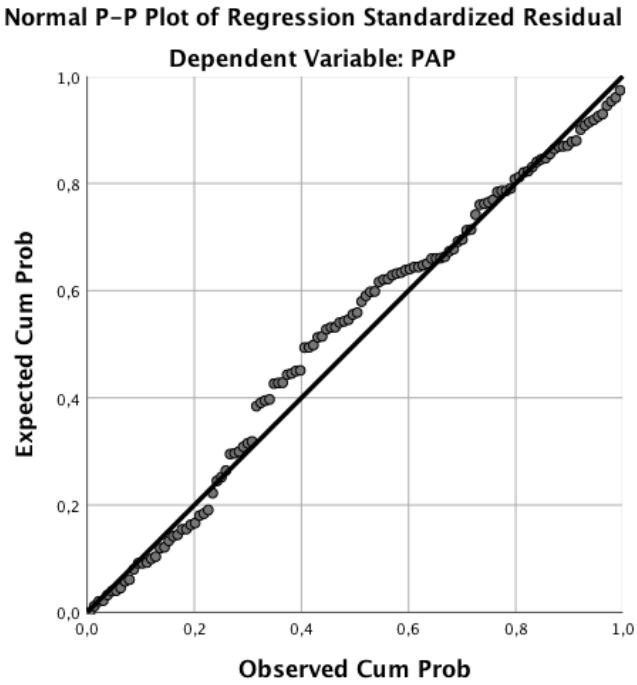

Figure 2: Normal P-P Plot of Regression Standardized Residual. The plot was used to check the assumption of normality.

Figure 2

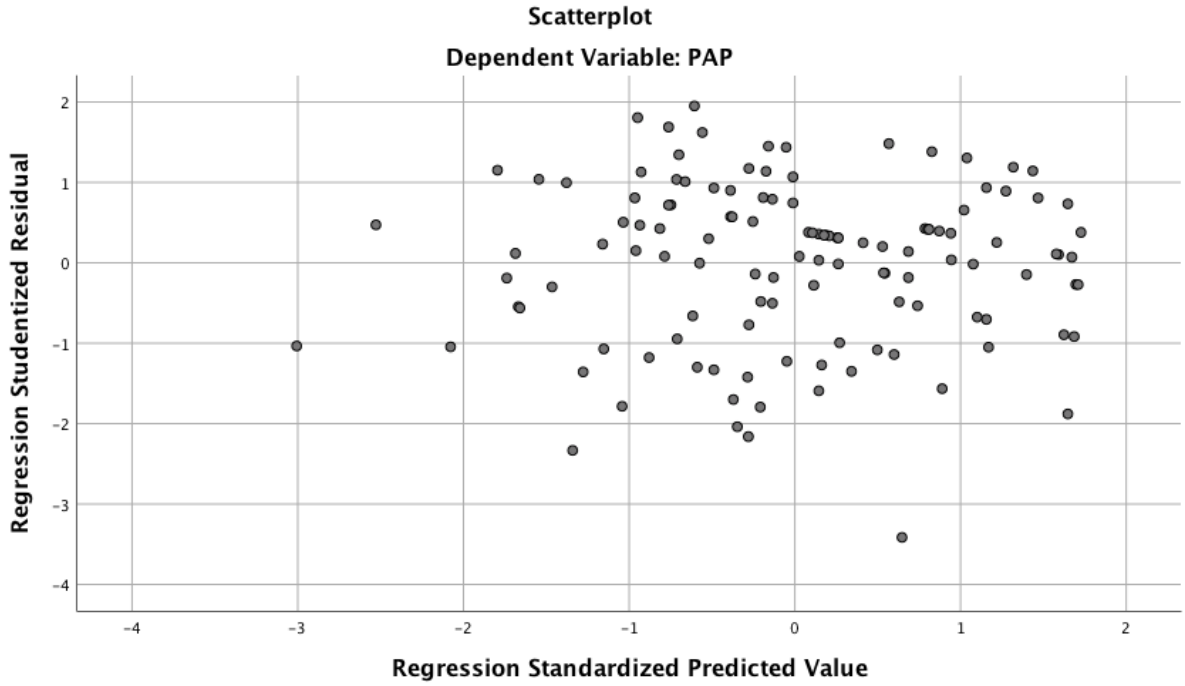

Figure 3: Scatterplot of the standardized residuals and standardized predictive values was used to check the assumption of linearity and homogeneity.