



The relationship between post migration living problems, social support, rumination and depression mediated by self-esteem in international students in the Netherlands.

MSc Clinical Psychology

Marta Serna-Borja Sanchez

Student number: 6841392

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Abstract

Objectives

Previous research indicated that more post migration living problems (PMLP), lower levels of social support and higher levels of rumination increased the risk for depression in international students. Lower self-esteem has also shown to be a predictor in developing depression. The present cross-sectional study investigated the relationship between post migration living problems, social support, rumination and depression mediated by self-esteem in an international student population in the Netherlands. We hypothesized that more PMLP's, lower levels of social support and higher levels of rumination would lead to higher levels of depression. Our study was the first to explore the associations between PMLP's, social support, rumination and depression via self-esteem.

Methods

A sample of 76 international students (58% males, age range 18-26 years) living in the Netherlands completed the Post Migration Living Problems checklist (PMLP-C), the Social Support Questionnaire (SSQ), Rumination Response Scale (RRS) and Rosenberg Self-Esteem Scale (RSES) and Beck's Depression Inventory (BDI).

Results

Our results revealed that more PMLPs, lower levels of social support and higher levels of rumination were associated with increased risk of depression. Multiple linear regression analysis confirmed that PMLP does not directly affect depression levels, and that rumination and self-esteem have both a significant positive impact on depression level, whereas social support has a significant negative impact on level of depression. Mediation analysis showed that when going

through the mediator, PMLP's and rumination increased, self-esteem decreased, and depression levels increased. As social support increased, self-esteem decreased, and depression levels decreased. Finally, high levels of rumination found to decrease self-esteem and increase depression levels.

Conclusions

The results support the notion that navigating through adaptations to the Netherlands as a student come with circumstantial and intrapersonal challenges (PMLP's, social support and rumination), which increase the risk for depression. The results of this study contribute to discussions surrounding the importance of guidance within the domain of internationalization of higher education. Recommendations to cater to the needs of international students, including interventions that are effective in developing coping skills when facing post migration problems, rumination and low social support were provided. Implications for future research, faculty advisors, international students' committees and international university students are also discussed.

Keywords: International students, post-migration, social support, rumination, depression.

Introduction

Depression is the second leading cause of disability affecting more than 300 million people worldwide (World Health Organization, 2021). It is understood as a psycho-somatic disorder characterized by excessive sadness, loss of interest in activities, loneliness, sleeping problems (either sleeping too much or sleeping inadequately), difficulty in thinking, loss of concentration, weight loss (World Health Organization, 2021). Post migration living problems (PMLP's) can be defined as post migration problems commonly encountered by immigrants in their host country (Silove, 1998). Such problems relate to immigration matters, employment-related challenges, access to various types of services, and isolation/loneliness/separation. International students migrate to their host country in the hope of receiving a better education than in their country of origin. The quality of education, availability of programmes taught in English, reputation and high ranking as some of the most common pull factors for respondents to choose the Netherlands to study (Nuffic.nl, 2021; Ahmad, Buchanan, & Ahmad, 2016; Cubillo, Sánchez & Cerviño, 2006; Mazzarol, & Soutar, 2002). In the Netherlands, studies looking into post migration living problems have notably found that Arabic and Asian international students suffer most from these particular post migration living problems: language-based discrimination, visa problems and social isolation due to vast cultural differences between Western and Eastern cultures (Sun *et al.*, 2020). Besides common post migration living problems amongst international students including language barrier, lack of monetary resources, loneliness or cultural shock (Bartram, 2008), the Netherlands is also known for its notoriously expensive student housing and transportation which has shown to complicate adaptation and hinder mental health in international students (Nuffic.nl, 2021, Fang & van Liempt, 2020, Yacoub, 2019). Given that the link between post migration living difficulties and depression has not been researched extensively in international student populations in the

Netherlands and the negative impact on the mental health of international students, it became instrumental that our research added to the contributing body of research in this field.

One of the factors that make this particular group of international students more vulnerable for the development of depression is the lack of social support while studying abroad. Social support refers to the pro-social instrumental and emotional functions that people receive from others, to convey that the individual matters (Rose & Campbell, 2000; Thoits, 1985; Cohen & Wills, 1985; Beehr & McGrath, 1992). Instrumental support has shown to lead to increased resources and emotional support to lead to increased well-being, mental and physical health (Rose & Campbell, 2000). While high social support creates a buffer for psychological distress (Scott et al., 2020), low social support has been shown to promote the occurrence of depression (Morris et al., 1991). And while international students gain an enriched multicultural perspective, they are also prone to having less reliable, superficial networks, since deep friendship has been shown to build over time (Chai et al., 2020). They are therefore prone to suffering from cultural loneliness (defined as not feeling understood in a foreign culture due to the discrepancies in cultural norms and as a consequence withdrawing from others, van Staden & Coetzee, K, 2010). Together with emotional loneliness, cultural loneliness has shown to increase the risk for developing rumination and depression (Hsu, Hailey & Range, 1987). And since international students are less motivated to seek psychological service than their domestic peers, they are more vulnerable to depression from social isolation (Alharbi & Smith, 2018; Brunsting *et al.*, 2018). Lysgaard U-Curve Adjustment hypothesis (1955) could be used to explain international students' adjustment to their host culture. He describes that the initial phase consists of excitement about the novelty that comes with meeting new people and new surroundings, but this novelty wears off after some time. Then, the individual focuses on forging stronger friendships. However, when

greater intimacy levels are not achieved, the individual is at risk of loneliness and depression (Brunsting *et al.*, 2019). This hypothesis can be used to explain how emotional loneliness (arising out of a loss of an emotional attachment) impacts mental health and depression in international students (Sadoughi & Hesampour, 2016). However, when international students are able to forge friendships involving high self-disclosure, trust and care, they can thrive both socially and academically in their new environment (Sawir, Marginson, Deumert Nyland & Ramia, 2008). The prevalence rates for mental health issues in international students are staggering, with social loneliness, lack of familiar linguistic and cultural environments leading the path to depression (Ip *et al.*, 2009). It is therefore important to shed light on how a lack of social support gives rise to depressive symptoms in international students in the Netherlands.

Rumination is another factor which has shown to precede depression in international students (Nolen-Hoeksema *et al.*, 2008). It is defined as recycled and persistent passive thinking, evoking and maintaining negative moods (Nolen-Hoeksema *et al.*, 2008). It is positively correlated with depressive symptoms (Papageorgiou & Wells, 2004; Nolen-Hoeksema *et al.*, 2008 ;Brinker & Dozois, 2009).The most widely recognized theory behind this concept is the Response Style Theory of rumination posited by Nolen-Hoeksema (1991), according to which rumination is thought to occur in response to depressed mood, and has also shown to play a crucial role in the aetiology of depression (Nolen-Hoeksema, 1991). A plethora of studies have listed negative consequences following rumination, including: increased stress, impaired concentration/cognition, negatively biased thinking, poor problem-solving (e.g., “why am I such a loser?” or “why do I react so negatively?”) (Lyubomirsky & Tkach; Starr, 2015; Miernicki & Telzer, 2016). These consequences have shown to increase vulnerabilities for developing depression in highly academic demanding environments in international students (Michl *et al.*, 2013). Since international students

have the added complexity of navigating in a foreign environment while meeting their academic demands, it was shown that they possessed a greater tendency to ruminate than in their home country (Michl *et al.*, 2013). Both in Eastern and Western cultures, mounting evidence has shown a high prevalence of rumination among international students in China (Jamsheid *et al.*, 2020) and the United States (Morrison & O'Connor, 2005). However, far less empirical attention is paid to the association between rumination and depression in international students in the Netherlands. And since international students are a vulnerable risk group due to their complex lives, it is important to study how rumination levels impact their risk of developing depression when studying abroad, as high levels of rumination are associated with high levels of depression symptoms in emerging adults (Miernicki, & Telzer, 2016; Starr, 2015).

Another important indicator for depression is low self-esteem. Self-esteem refers to having self-respect and self-love based on self-evaluation (Rosenberg, 1965). It is negatively associated with depression (Tennen & Herzberger, 1987) and loneliness (Jones, Freemon, & Goswick, 1981). There is evidence to substantiate the link between low self-esteem, high rumination and high depression (Philipps & Hine, 2014). As a mediator, self-esteem has shown to mediate the relationship between social support and subjective well-being in university students (Kong, Zhao & You, 2013; Williams & Galliher, 2006), and the relationship between rumination and depression (Di Paula & Campbell, 2002).

As the number of international students increases in the Netherlands, it is necessary to gain knowledge about post-migration adaptation and risk-factors for psychopathology in the population of young adults who are studying abroad. By doing so, we will advance our understanding of the influence of PMLP, social support, rumination on depression. This knowledge is relevant for addressing mental health care and academic support needs of international students more adequately. The aims of

this study were twofold. Firstly, in order to advance our understanding of circumstantial and personality factors which increase the risk of depression in international students, our first aim was to examine the relationships between PMLP, social support, rumination, self-esteem and depression. Based on previous research, we predicted that more PMLP's and higher levels of rumination would be associated with higher levels of depression. We also predicted that lower levels of social support would be associated with higher levels of depression. Again, based on previous studies, since we know that self-esteem has been strongly associated with depression and has been shown to mediate the relationship between rumination and depression, and social support and depression; and that PMLP's, social support and rumination are also strongly associated with depression, we were interested in exploring whether there self-esteem mediated the variables in our study. Our second aim was to explore how self-esteem mediates these linkages.

Methods

Participants and Procedure

Recruitment involved a combination of digital flyer advertising in various social media platforms, convenience, and snowball sampling methods. Participants were asked to fill in a consent form prior to beginning the questionnaire. In order to protect the identity of participants, all identifying data was removed from the results. If agreeing to the study conditions, participants completed an online survey including Post-migration Living Problems Checklist (PMLP-C), Social Support Scale (SSS), Ruminative Response Scale (RRS), Rosenberg Self-Esteem Scale (RSES) and Beck's Depression Inventory (BDI).

The inclusion criteria for this study was being an international student 18 years of age or older studying in the Netherlands . The sample consisted of a total of 76 participants, 44 males and 32 females. The mean age was 23 years ($SD = 5.4$). In the study sample 27 % completed high school, 34% completed an undergraduate degree's level, 14% completed Master's level and 1% completed a PhD level. International students originated from 31 countries, with the largest numbers from China and Italy.

Measures

Demographic Variables

Items were administered tapping the participants' nationality, age, gender and highest completed educational level.

Post-migration Living Problems. Post migration living problems (PMLP) were measured by the Post Migration Living Problems Checklist (PMLP-C). It is a 24-item rating checklist used for measuring the severity of post migration problems commonly encountered by immigrants (developed by Silove, 1998). The PMLP-C was originally designed for asylum seekers but is applicable for immigrant populations. Items relate to immigration matters, employment-related challenges, access to various types of health services, and isolation/loneliness/separation. Responses are rated on a five-point Likert-type scale ranging from “0” (“no problem at all”) to “4” (“a very serious problem”) with total scores ranging from 0 to 96. A high cumulative score indicates a high degree of post-migration stressors. Research conducted among migrant populations (eg. international students) supported the reliability and cross-cultural validity of the scale (Tibubos & Kröger, 2020). In the current sample, the Cronbach’s alpha was .96.

Social Support. Social support was measured using the Social Support Questionnaire (*SSQ*) *shortened version*. It is a 12-item measure of perceptions of social support (developed by Cohen & Hoberman, 1983). This questionnaire has three different subscales designed to measure three dimensions of perceived social support. These dimensions are: Appraisal Support, Belonging Support and Tangible Support Each dimension is measured by 4 items on a 4-point scale ranging from “Definitely True” to “Definitely False”. Research conducted among migrant populations supported the reliability and cross-cultural validity of the scale (Tibubos & Kröger, 2020). Cronbach’s alphas for SSQ range between .930 and .965. Higher scores indicated higher internal reliability.

Rumination. Rumination was measured using the Ruminative Response Scale (RRS). It is a 22-item self-report measure of describing one's responses to depressed mood (developed by Treynor *et al.*, 2003). It consists of three factors: Depression, Brooding, and Reflection. Brooding is the maladaptive, passive dwelling on past negative episodes, while reflective pondering is defined as an attempt to analyze one's own emotions and thoughts in order to facilitate problem solving. Each item is rated on a 4-point Likert scale ranging from 1 (never) to 4 (always). In the current sample, the Cronbach's alpha was .94.

Self-esteem. Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES). It is a 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self (developed by Rosenberg, 1979). The scale is unidimensional. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree. In the current sample, the Cronbach's alpha was .67.

Depression. Depression was measured using the Beck Depression Inventory (BDI). It is a 21-item, self-report rating inventory that measures characteristic attitudes and symptoms of depression (developed by Beck *et al.*, 1961). Respondents are asked to rate each item based on four response choices according to the severity of the symptoms, ranging from the absence of a symptom to an intense level, during the past week. In the current sample, the Cronbach's alpha was .96.

Statistical Analysis

All statistical analyses were performed with IBM SPSS Statistics Version 25. First, we calculated mean scores and standard deviations using descriptive statistics. Mean scores in the current sample were compared with reference groups using one sample *t*-tests. Secondly, bivariate associations between PMLPs, social support and rumination were analyzed using Pearson correlation coefficients. Finally, three mediation analyses were conducted with PMLPs, social support and rumination as the independent variables, self-esteem as a mediator, and depression as the dependent variable. The mediation analyses comprised a number of sub analyses to estimate the total, direct and indirect effects of the constructs. The total and direct effects were estimated by means of a multiple linear regression analysis. Indirect effects and mediation pathways were examined by means of bootstrap analyses with 5000 bootstrap samples and bias corrected and accelerated 95% confidence intervals as recommended by Hayes (2013). To this end, we used the PROCESS macro for SPSS (Hayes, 2013). All coefficients were reported in standardized form. Finally, a multiple linear regression analysis of depression (BDI) against an intercept, Post migration living problems (PMLPs), social support (SSQ), rumination (RRS), and self-esteem (RSES), has been performed.

Results

Descriptive Statistics

Table 1 shows the mean scores and standard deviations for the study measures. Measured by the PMLP-C, 50% of participants feared being sent back home, 37% experienced communication problems, 36% experienced discrimination, 41% experienced stress related to having no permission to work, 54% feared being in detention, 50% feared interviews by immigration, 43%

feared delays in application, 46% feared conflicts with officials and 51% experienced little help with welfare from charities. Our sample showed less depression symptoms ($M=1.67$, $SD=0.59$) compared to the national general population ($M=1.76$, $SD=2.06$).

Table 1

Means, Standard deviations, Minimum and Maximum Scores, and Bivariate Correlations Between Study Measures

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. PMLP ^a	1.942	1.177	–				
2. Depression ^b	1.665	.587	0.278*	–			
3. Social support ^c	5.331	1.211	-0.283*	-0.449**	–		
4. Rumination ^d	2.757	.688	0.263*	0.315**	-0.286*	–	
5. Self-esteem ^e	2.866	.345	0.273*	0.586**	-0.359**	0.092	–

Notes. ^aSumscore range: 0-5, ^bSumscore range: 2-3, ^cSumscore range: 1-4, ^dScale range: 1-7,

^eScale range: 1-4

Measures: PMLP (1), BDI (2), SSQ (3), RRS (4), RSES (5),

* $p < .05$, ** $p < .01$

Bivariate Associations Between Study Variables

Correlations between the study variables are presented in Table 1. It was hypothesized that more PMLP's, lower levels of social support and higher levels of rumination would lead to higher levels of depression. In accordance with this hypothesis, more PMLPs, lower levels of social support and higher levels of rumination were associated with increased risk of depression. In fact, the correlation analysis shows statistically significant positive moderate correlation between PMLPs and depression and similarly between rumination and depression, conversely the correlation analysis showed a statistically significant strong negative correlation between social support and depression. Surprisingly, higher level of self-esteem were statistically strong positively correlated to depression. Again, according to expectations, social support was not only significantly and strongly negatively correlated with depression but also moderately negatively correlated with PMLPs and rumination. According to the correlation analysis it seemed that there was no significant statistical relationship between self-esteem and rumination. Moreover, surprisingly, higher level of self-esteem was significantly correlated with lower values of social support, or the other way around. Finally, we also found that more PMLPs were significantly correlated with higher levels of self- esteem.

Total, direct and indirect effects of PMLPs, social support and rumination on depression through self-esteem

The assumptions of multiple regression analysis were tested and all were met. The results of the analyses are shown in Table 2. Regarding depression symptoms, a significant total effect (Step 1) and a significant and negative direct effect (Step 2) of social support on depression symptoms was found. This indicates that higher level of social support were related to lower

levels of depression. Additionally, the analysis revealed a significant positive direct effect (Step 2) of rumination on depression symptoms, indicating that higher levels of self-esteem was associated with higher levels of depression. According to the results of the multiple linear regression analysis, overall model predicted 45% of variance in depression, $R^2 = .458$, $F(4,63) = 13.311$, $p < .001$. This means that almost half of the variance in depression symptoms could be explained by post-migration living problems, social support, rumination and self-esteem.

The bootstrap analyses revealed a significant positive indirect effect of post migration living problems (PMLP), 0.12, BCa 95% CI [.001, .274] on depression levels via self-esteem; and an equivalent in magnitude, but negative, indirect effect of social-support (SSQ), -0.12, BCa 95% CI [-.239, -.031] on depression levels via self-esteem. Thus, considering the significant positive correlation between PMLP and self-esteem, it can be inferred that more PMLP's lead to higher self-esteem and subsequently to higher depression; Additionally, considering the significant negative correlation between social-support and self-esteem, more social support led to lower levels of self-esteem and subsequently to lower depression, or conversely, less social support led to higher level of self-esteem and subsequently to higher level of depression. No indirect effects of rumination, -.020, BCa 95% CI [-.024, .16] were found.

The indirect effect is computed as the product between the effect that a measure has on self-esteem and the effect that self-esteem has on depression. What is left of the total effect on depression, after accounting for the indirect effect via self-esteem, is the direct effect of a measure on depression. If the indirect effect is significant, mediation has occurred. Therefore, in this study the mediation of self-esteem has occurred with respect to PMLP and social support. If the indirect effect is significant but the direct effect is not significant, full mediation has occurred. In this study this is the case of PMLP. However, if the partial effect is significant, but

the direct effect also remain significant, partial mediation has occurred. In this study, this is the case of social support, which is indeed only partially mediated by self-esteem.

Table 2

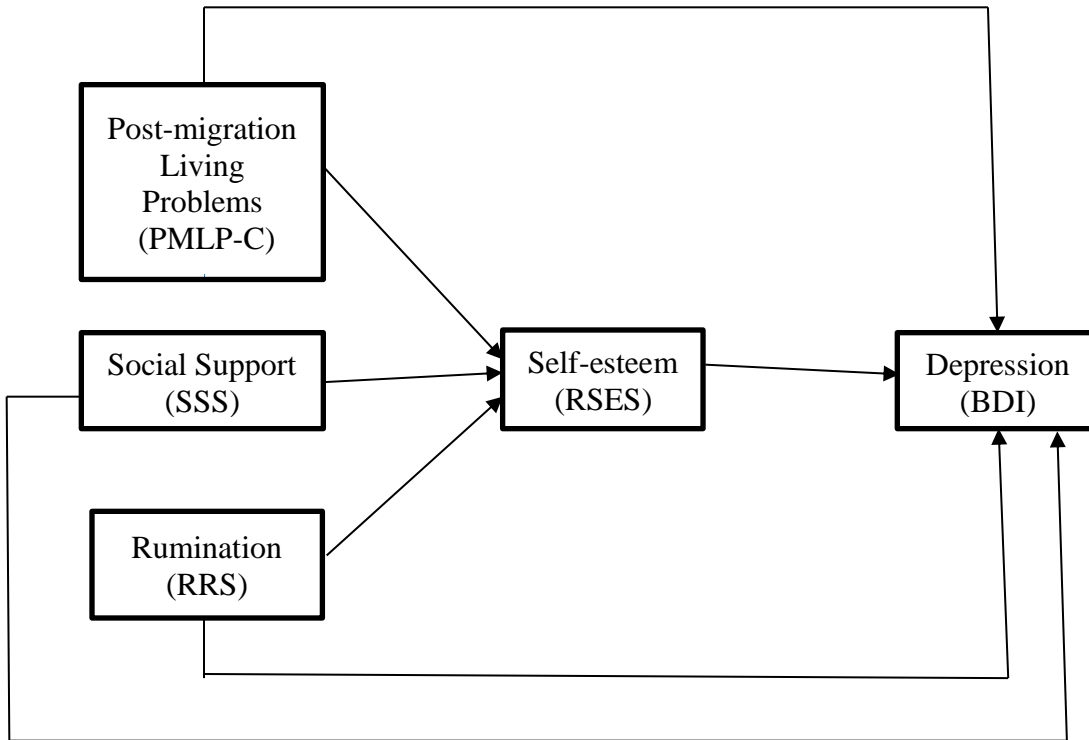
Results of the multiple linear regression analysis with depression as outcome variable: Total and direct effects of PMLPs, Social support and Rumination on depression levels.

Depression symptoms		
Predictors	β step 1	β step 2
adj. $R^2 = .02$, $F(1,67) = 16.9$		
Post-migration living problems	.132	.010
Social support	-.296**	-.176*
Rumination	.255	.275*

Note. β 's in step 1 represent total effects of PMLPs, Social support and Rumination on depression levels. β 's in step 2 represent direct effects of PMLPs, Social support and Rumination on depression levels. *** $p < .001$, ** $p < .01$, * $p < .05$.

Figure 1

*Mediation model showing total, direct and indirect effects between PMLP's, social support, rumination and depression through self-esteem. * $p < .01$;*



Discussion

The current study aimed to contribute to the emerging body of research looking at the associations between PMLP's, social support, rumination and depression and the mediating role of self-esteem on PMLP's, social support, rumination and depression. More PMLPs, lower levels of social support and higher levels of rumination were associated with increased risk of depression. Our findings revealed that more post migration living problems lead higher levels depression consistently with findings by Sun et al. (2020). Consistently with findings by Morris *et al.* (1991) as social support levels decreased, depression increased. We also found that social support was not only significantly and strongly negatively correlated with depression but also

moderately negatively correlated with PMLPs and rumination. We believe this is a novel finding in the literature. Surprisingly however, there was no relationship between self-esteem and rumination, as posited by Philipps & Hine (2014). We believe this is a novel finding in the literature. Moreover, surprisingly, higher level of self-esteem were statistically strong positively correlated to depression, higher level of self-esteem was significantly correlated with lower values of social support, that more PMLPs were significantly correlated with higher levels of self- esteem which contradicts findings by Phillipps & Hines (2014) in that individuals with fragile self-esteem are more likely to employ rumination which increases the likelihood of depression and that relationship between compromised self-esteem and depressive symptoms vary as a result of rumination tendencies.

Mediation analysis showed that when going through the mediator, PMLP's and rumination increased, self-esteem decreased, and depression levels increased. As social support increased, self-esteem decreased, and depression levels decreased , in accordance with findings by Kong, Zhao & You (2013) and Williams & Galliher (2006).and high levels of rumination found to decrease self-esteem and increase depression levels, in accordance with findings by Di Paula & Campbell (2002).

Limitations

Although the risk of limitations was carefully controlled in this study, there were nonetheless some factors to address. The first limitation was that this study has a cross-sectional design which complicates making cause-effect suppositions. The second limitation was that the data in this study was collected through self-report measures which could infringe internal validity. The third limitation was that 5 of 23 items on the PMLP-C were related to the refugee determination process; health, welfare and asylum problems which were not relevant to our

international student population. Therefore, it remained unclear whether participants responded to these items even if they did not identify with them, and thus, this would indicate that this instrument was not the most suitable for our population. The use of an instrument specially designed for students studying abroad would have been more appropriate as it would have fully accounted for problems specific to this population, and in turn would have increased our measurement validity. The fourth limitation was that there were 6 participants who responded inconsistently to our questionnaire, which hindered the internal validity and reliability of the findings. Replicating this study by recruiting more participants would minimise this problem, which rose from using a small-scale sample. The final limitation was the culturally acceptable social support and rumination may have differed between students from Eastern and Western countries. This would be fixed by replicating this study using culturally homogenous groups.

Directions for future research

The current study contributes to the existing evidence positing that a strong social support network lowers the risk for depression. That being mentioned, this study could have been strengthened by looking at how the existence and/or maintenance of previous social networks interplays with the current social support network to protect their risk of depression. Although this study was intended to be conducted on a large sample in order to generalise these findings to all international students in the Netherlands, the quantitative research design does not enable to gain an in-depth examination into the effects of PMLP's, social support and rumination of individual international students. For example, loneliness is a PMLP's but it is unknown which loneliness sub-type is responsible for creating this problem. This issue would be resolved by designing a mixed-measures study incorporating interviews. Although English proficiency was

not a measurement criterion, future studies could determine whether linguistic discrepancies interplay in depression levels in international students in the Netherlands. We did not inquire any information regarding the university they attended or the city they lived in, or any other previous study abroad experience in other European or non-European countries. Therefore, future studies should incorporate the university they would be enrolled in and city in which they reside in to determine whether there are differences between PMLP's, social support and rumination levels in different student cities in the Netherlands. In doing so, this could help city councils produce informative resources to inform future international students of the universities which facilitate international student living.

Clinical implications

This study has produced a number of recommendations for future studies investigating international students in the Netherlands. In order to visualize a holistic picture of international students' experience, this information could also help academic institutions to make data-driven decisions behind the development of mental health policies in international university committees, or support services resources such as mental health helplines counselling services for international students in Dutch universities. Although there is evidence to suggest that universities mental health resources cannot substitute for friendship bonds and that local cultures will not totally substitute for the same-culture networks (Sawir *et al.*, 2007), creating opportunities for international students to meet is a key to a forward move on preventing depression deriving from low social support. This information could also be used to inform prospective international students both on the high prevalence rates of PMLP's, poor or no social support, rumination tendency on low self-esteem and its effect on depression levels. Although

there is evidence to suggest that universities mental health resources cannot substitute for friendship bonds and that local cultures will not totally substitute for the same-culture networks, creating opportunities for international students to meet is a key to a forward move on preventing depression deriving from low social support.

Conclusion

In this study, we examined the relationships between PMLP's, social support, rumination, and depression. We also proposed that self-esteem would be a mediator in the relationship between PMLP's, social support, rumination and depression. We predicted that more PMLP's and higher levels of rumination would lead to higher levels of depression; that lower levels of social support would lead to higher levels of depression. In accordance with our hypothesis, more PMLPs, lower levels of social support and higher levels of rumination were associated with increased risk of depression. Overall, more PMLP's lead to higher levels of depression, although the regression analysis does not show a direct significant relationship. Moreover, higher levels of self-esteem would lead to higher levels of depression and higher levels of rumination would lead to higher level of depression, whereas higher level of social support lead to lower level of depression. Nonetheless, there were methodological and sample limitations which infringed both the validity and reliability of the findings which would be dealt with by replicating this study in the future taking the necessary amendments discussed. Future studies could document the personal experiences of international students in depth and paired with the findings in this study could help the development of policy both in international student committees and inform prospective international students to anticipate some of these factors and the risk they have on depression levels. This study could also be used to design mental health support services for

international students knowing the impact of vulnerabilities such as PMLP's, social support and rumination have on their mental health.

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