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Perceived Social Support and Well-Being of International Students at an Italian University

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ABSTRACT

The present study aims at exploring international students' well-being in relation to their perception of social support and dispersion of dependency on various resources. The participants were 139 international students at an Italian university who completed the WHO-5 Well-being Index, Symptom Checklist 90-R, Multidimensional Scale of Perceived Social Support, and Dependency Grids. The results show that higher well-being is correlated with higher support and lower distress and that higher dispersion of dependency was associated with higher perceived support. International students who seek professional psychological help also report lower well-being, higher distress, and fewer resources compared with those who do not seek psychological support. Further, coming from collectivist cultures (rather than individualist ones) as well as being a long-term (rather than short-term) student was mostly associated with higher distress and less perceived support. These results suggest that counseling services for international students should help them find new sources of social support.

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[2] The authors have no conflicts of interest to declare.

Keywords: dispersion of dependency, international students, social support, well-being

According to the Institute of International Educations (IIE, 2020), the number of international students has been more than one thousand starting from 2015 till date, with a peak in international mobility between 2010 and 2015, growing annually from +2,9% to +10%. The most recent data available for Italy show that in 2018–2019 there were about 89,000 international students, most of whom were from Asia (26,313), outside the European Union (20,453), and inside the European Union (19,624) (Naldi, 2020). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute of Statistics (2020), international students are defined as those "who have crossed a national or territorial border for the purpose of education and are now enrolled outside their country of origin" (para. 1). They can be grouped as long-term or short-term international students, with the former studying in full-time programs and the latter participating in exchange programs, such as Erasmus, lasting from 3 months to 1 year (O'Reilly et al., 2015).

International students are at a greater risk of developing psychological distress (including at a clinical level) compared with domestic students because they are distanced from their main social resources; consequently, they face problems related to the sense of belongingness, loneliness, and acculturative stress (Brunsting et al., 2019; Poyrazli et al., 2004). In addition, they are highly exposed to linguistic, academic, interpersonal, financial, and intrapersonal stressors that can influence their psychological and physical well-being, thus leading to depression, loneliness, homesickness, and psychosomatic symptoms (Mori, 2000). Moreover, students with low levels of belonging to a university who experience a lower sense of coherence as well as less academic and social integration are also the ones who are more likely to seek professional support (e.g., psychologist, social worker, clergy), rather than informal help (e.g., family members, friends; Swanbrow Becker et al., 2018). Therefore, it is crucial to investigate the relationship between social support and well-being in international students and also in relation to their search for professional help. First of all, we will clarify and analyze the construct of social support in relation to well-being. Further, we will revise social support through the lens of personal construct psychology (Kelly, 1955) to gain a more comprehensive view that might inform psychological interventions.

THE CONSTRUCT OF SOCIAL SUPPORT

Social support is a multidimensional construct that refers to the availability of concrete and psychological resources that are perceived or received from interpersonal relationships (Rodriguez & Cohen, 1998). Cohen (1988) distinguished between *structural support*, which quantitatively measures social networks' integration and strength, and *functional support*, which qualitatively evaluates social networks' functions (e.g., tangible, emotional, informational, or

appraisal). However, factorial analyses of various assessment instruments showed that social support measures are often independent; these analyses provided indexes of various aspects of the construct related to the way in which social support is defined (Barrera, 1986).

The lack of a comprehensive definition of *social support* and the lack of a fully explicative model of its links with physical and mental health complicate the establishment of a strong construct validity (Sarason & Sarason, 2009). Two models have been proposed to describe the effects of social support on health: the main-effect model, which states that social support promotes health-eliciting positive psychological states, higher self-esteem, and environmental control (Cohen & Syme, 1985); the stress-buffering model, in which social support buffers the harmful effects of stress before or at the beginning of the psychophysiological reaction (Cohen & Wills, 1985). However, so far, these models have reached mixed or partial validation.

Previous studies have shown that the lack of social support can have an effect on a medical level (Uchino, 2006; Wang et al., 2005), with higher levels of support predicting better prognosis and lower mortality (Brummett et al., 2001). Likewise, some authors have found that social support had direct effects on reducing depression or improving well-being in older people (Oxman et al., 1992) and in various clinical conditions (Ambrosio et al., 2019; Fatima & Jibeen, 2019; Thompson et al., 2017). However, other authors found only indirect and mixed indirect–direct effects of social support in reducing psychological distress and improving well-being (Kagee et al., 2018; Kurtović & Ivančić, 2019).

These results also provide a confusing picture of the role of social support in well-being due to the use of different tests to measure the construct (Fatima & Jibeen, 2019; Thompson et al., 2017; Wang et al., 2005); these tests are sometimes not standardized (e.g., Berkman et al., 1992) and make results difficult to compare and generalize. Further, different studies (Berkman et al., 1992; Brummett et al., 2001; Fatima & Jibeen, 2019; Horsten et al., 2000) indicate different components (structural or functional, emotional or tangible) of social support as the determinants of well-being.

SOCIAL SUPPORT AND INTERNATIONAL STUDENTS

For international students, social support is a fundamental resource by which they cope with acculturative stress and its consequences, such as depression, anxiety, and somatic symptoms (Jou & Fukada, 1997; Lee et al., 2004; Ra & Trusty, 2017; Zhang & Goodson, 2011). Some studies (Aldawsari et al., 2018; Berger et al., 2018; Brisset et al., 2010; O'Reilly et al., 2010) have considered well-being the result of the positive effect of social support on loneliness (Lin & Kingminghae, 2014) or stress (O'Reilly et al., 2015). Other studies exploited international students' life satisfaction in relation to functional support (Yusoff, 2012) or to their need for support, information, and feedback (Bektaş et al., 2009). Several studies (Atri et al., 2007; Dao et al., 2007; Meghani and Harvey, 2016; Nahidi et al., 2018; Sümer et al., 2008) underlined the positive effects of the various components of social support to reduce anxiety and depression, whereas other

studies focused more on the supportive role of different types of social ties. Nabavi and Bijandi (2018) found that family and friends are the ones who mostly moderate the effect of loneliness. Other studies (Bektaş et al., 2009; Lin & Kingminghae, 2014; Mak et al., 2015; Poyrazli et al., 2004) underlined that international students engage mostly with compatriots or other international students and avoid meeting locals, thereby lowering the protective role of social ties.

Previous studies (Hofstede, 2001) have also pointed out how the culture of origin could determine a different attitude toward engaging in social relationships and building social ties, which could influence the well-being and perceived support. Students from collectivist cultures (e.g., Africa, Asia, and South America) are likely to define themselves as aspects of groups, to focus on the context rather than the content in communicating, to search for relationships with ingroup members, compared with students from individualist cultures (e.g., Europe and North America) (Triandis, 2001). Moreover, students from collectivistic countries show more lack of support and distress compared with other subgroups (Poyrazli et al., 2004; Sawir et al., 2008; Yeh & Inose, 2003).

A sparse number of studies has analyzed the influence of the length of stay on the perception of social support and well-being. O'Reilly et al. (2015) found that long-term students perceived more instrumental support and had more ties with locals than the short-term students; however, they did not perceive more well-being. Other authors (Aldawsari et al., 2018; Kim et al., 2019) also found greater stress and a lower autonomy in long-term international students.

PERSONAL CONSTRUCT PSYCHOLOGY

In the context of this complex research field, personal construct psychology (Kelly, 1955) can be a useful perspective to incorporate different aspects of social support and to combine them in a unique measure. According to this perspective, the constructs of dependency are the earliest regularities that we form in our life, linking our survival to caregivers who can satisfy our needs (Kelly, 1969). Kelly (1969) replaced the usual contraposition between autonomy and dependency with the concept of dispersion of dependency, which means that a person can refer to different resources to satisfy their needs (dispersed dependency) or can concentrate it in one or a few resources (undispersed dependency). In this context, a small number of resources and an undispersed dependency suggest a poor social network and social support: If a person relies on a few resources and these resources are not available when he or she needs help, then the person will not be able to receive any support (Walker, 1997, 2005). Previous studies have investigated the dispersion of dependency in several domains (Cipolletta et al., 2012, 2013, 2017, 2019a, 2019b; Cipolletta & Amicucci, 2017; Laso Ortiz et al., 2015; Powell, 2013; Smith et al., 1991; Talbot et al., 1991) and in relation to social network (Mitchell & Latchford, 2010; Stevens & Walker, 1996) and social support (Cipolletta et al., 2019a). However, so far, no study has investigated dependency in the international students and its relationship with social support and well-being.

The Dependency Grid (Fransella et al., 2004; Kelly, 1955) is a measure developed to assess the dispersion of dependency; it can be considered useful in the study of the role of social support for international students' well-being because it can provide information on how students differentiate among the resources and receive support from them. This knowledge can help in designing tailored intervention strategies.

STUDY AIM

The aim of the present study is to investigate the relationships between the dispersion of dependency, perceived social support, well-being, and distress in a sample of international students at the University of Padua (UniPD; Italy) who sought or did not seek professional help from the institutional Psychological Assistance Service (PAS). The following hypotheses informed the study:

1. International students referred to PAS have lower well-being, higher distress, and lower perceived support; they rely on fewer resources; and they have lower dependency than the international students who did not seek help from the service (non-PAS students).
2. International students who are short-term students at the university experience higher well-being and less distress than long-term students at the university do.
3. Students from collectivist cultures experience higher distress and a smaller support network than students from individualist cultures do.
4. Higher dispersion of dependency and perceived support correlates with lower distress and higher well-being.
5. A broader social network correlates with lower distress and higher perceived support.

MATERIALS AND METHODS

Participants

Between March 2019 and January 2020, we recruited 139 long- and short-term international students at University of Padova. The students were recruited through university classes and residences, Facebook groups, and PAS. The PAS provides free-of-charge counseling and psychotherapy to international students at the University of Padova. This psychological support aims at helping students facing a range of issues that affect their ordinary life or academic studies. International students can have information on this service from the university website and can also benefit from other services offered by the university, such as a psychiatric service, a welcome office, and master's degree students (called "buddies") who will welcome and support them during their stay.

The inclusion criteria for this study were: being a short-term or long-term international student at UniPD (bachelor, master, or doctorate); being in Italy for educational purposes. An a priori power analysis using G*Power3 (Faul et al., 2007) showed moderate correlations ($p = 0.3$) in a normal bivariate model with a

significance of $\alpha = .05$ and found that a sample of 115 participants was necessary to achieve a power of .95.

The sample of 139 students with a mean age of 24.39 years (SD = 3.78) included 85 females and 54 males. From the total sample, 43 sought psychological help from PAS and 43 were short-term students (Erasmus), among whom there were 10 PAS and 33 non-PAS. On average, the participants had been in Italy for 1.4 years (M = 15.60 months; SD = 22.15) and had planned to stay 2.4 years (M = 28.36 months; SD = 25.16). Regarding their academic degree programs, 49 were undergraduate students, 75 were master's degree students, eight were PhD students, and seven students' programs were unknown. Regarding the division in individualist and collectivist cultures as defined in the literature (Hofstede, 2001; Triandis, 2001), 69 students came from individualist cultures and 67 from collectivist ones (thus we excluded three people from the analyses that considered the culture of origin because they had dual citizenship). The participants were mostly enrolled in psychology (35%), economics and political sciences (20%), agricultural sciences and veterinary medicine (11%), biology (9%), and engineering (6%) programs.

Data Collection

Besides sociodemographic details, data from the following four questionnaires were collected with the standardized English version.

The WHO-5 Well-being Index (WHO-5; World Health Organization [WHO], 1998) is a five-item, 6-point Likert scale instrument ranging from 0 (*at no time*) to 5 (*all the time*) that assesses the percentage of perceived mental well-being. The score is obtained by multiplying the sum of the responses by 4 (raw score). For raw scores less than 13 (poor perceived well-being), the WHO recommends checking for depression, but we did not proceed with this step because our research did not have a clinical purpose.

The Symptom Checklist 90-R (SCL-90-R; Derogatis, 1983) is a 90-item, 5-point Likert scale (ranging from *not at all* to *extremely*) that uses a self-report inventory to evaluate the severity of externalizing and internalizing distress symptoms along 10 dimensions: somatization (SOM), obsessive-compulsiveness (O-C), interpersonal sensitivity (I-S), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), psychoticism (PSY), and sleep disturbance (SLEEP). The questionnaire also has three general indexes: Global Severity Index (GSI: intensity of general distress level), Positive Symptoms Total (PST: self-reported symptoms), and Positive Symptom Distress Index (PSDI: intensity of distress levels for recognized symptoms). The mean score for each scale (scores ≥ 1 are of interest) was calculated, except PST, whose range is 0–90.

The Dependency Grid (DG; Fransella et al., 2004; Kelly, 1955) is a list of 23 problematic situations (e.g., a time when the participant felt frightened, lonely, or was in poor health). Participants listed, in columns, the people who were important to them (the interviewer added "self" as the final resource in the grid) and indicated the person or the people (including themselves) to whom they would go for help in each situation.

The number of people listed indicates the potential breadth of the participants' social networks. The number of resources selected indicates those in whom the participants can effectively confide. The total number of crosses gives a measure of the total dependency. The uncertainty column index (UCI) shows the distribution of dependency among various resources. The uncertainty column coefficient (UCC) indicates the discrimination among resources. Proportions of 0–1 are used as measures of dispersion. High indexes (≈1) and low coefficients (≈0) indicate a dilated distribution (Walker, 1997) with reliance on all the resources for everything. Low indexes (≈0) and high coefficients (≈1) show a constricted distribution (Walker, 1997) with reliance on a few resources for everything. Finally, the dependency percentages corresponding to specific resources and themselves indicate whom the participants rely on for help.

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) is a validated 12-item, 7-point Likert scale (1 = *very strongly disagree*, 7 = *very strongly agree*) that assesses perceived emotional support over three dimensions: friends (SSfr), family (SSfam), and significant others (SSso), with four items for each dimension. In addition, a global (SStot) score was obtained by calculating each scale's mean score (1–2.9 indicates poor support, 3–5 indicates moderate support, and 5.1–7 indicates high support).

For each instrument, the researcher emphasized that the questions did not have right or wrong answers, but rather depended on one's personal experience. Each participant completed the questionnaires in the order just cited without variation.

Data Analysis

We analyzed DGs with the Gridstat software and the whole data set with SPSS Statistics 25 and R, after first applying the Shapiro–Wilk normality test (finding a distribution that was not normal but that did not have severe violations) and calculating Cronbach's α coefficients for every instrument to assess the test's reliability. We carried out descriptive analyses and *t* tests paired with Bonferroni corrections to verify differences. To test the study hypotheses, we performed planned comparisons to verify the effects of PAS on well-being, distress (PSDI, PSI, and GSI), chosen resources, and total dependency. In addition, we performed comparisons to verify the effects of both length of stay (short- or long-term students) and culture of origin (collectivist or individualist) on distress (PSDI, PSI, and GSI) and perceived social support (SStot). We calculated exploratory Pearson (*r*) and Spearman (rho) correlations to explore the association between variables of interest. Finally, to investigate whether students could be grouped according to their dispersion of dependency, we grouped the perceived support and distress levels as well as data considering nine variables of interest (%well-being, GSI, PST, number of chosen resources, dependency on self, dependency on a significant other, UCI, UCC, and SStot) with a hierarchical cluster analysis (Ward method). Univariate ANOVA with Bonferroni post hoc correction was used to evaluate the degree to which the variables' indexes weighed on the cluster formations and differentiated a cluster from another. A chi-square test was

subsequently applied in cases of distribution among the identified clusters to verify whether significant differences occurred due to sociodemographic variables (being a PAS client, gender, length of stay, and culture).

RESULTS

Cronbach's α proved that the instruments have good reliability for MSPSS (SStot: 0.88; SSfam: 0.86; SSfr and SSso: 0.84), WHO-5 (%well-being: 0.85), and SCL-90-R (PAR: 0.85; O-C: 0.87; I-S: 0.85; DEP: 0.90; ANX: 0.87; HOS, PHOB and PAR: 0.81; PSY: 0.79; and SLEEP: 0.72). Descriptive analysis showed that 46% of international students reported a WHO-5 raw score of less than 13, which indicates poor well-being and a need for further evaluation. For the SCL-90-R, the PSDI and GSI indexes had values higher than 1, which is considered of clinical interest. The mean number of resources indicated in the DG was 10.01 ($SD = 2.83$) with concepts, things, animals, groups, and activities specified as resources by 18 students. The DG also showed a high dispersion of dependency (UCI) but was mainly indiscriminate (UCC). Dependency on self was higher than the participants' dependency on their fathers was, $t(136) = 6.97$, $p < .001$, although it was not different from their dependency on their mothers, after correction, $t(136) = 2.41$, $p = .17$. However, dependency on a significant other (mostly a partner or a friend) was higher than their dependency on their mothers, $t(136) = 7.46$, $p < .001$, fathers, $t(136) = 13.19$, $p < .001$, and self, $t(136) = -3.76$, $p < .001$. SStot was generally high, with the scores being higher than 5. Nevertheless, SSos was higher than SSfam was, $t(138) = 2.43$, $p < .02$, whereas the other comparisons did not survive post hoc correction.

As illustrated in Table 1, planned comparisons showed that PAS clients generally had lower well-being, higher PST, and higher GSI compared with non-PAS clients. PAS clients also showed fewer "chosen" resources compared with non-PAS clients. Comparisons based on the length of stay showed that short-term students had lower distress scores (PSDI, PST, and GSI) and higher SStot scores compared with long-term students. Students from collectivist cultures showed higher PST and GSI and lower SStot compared with those from individualist countries.

Table 1: Planned Comparisons on the Variables of Interest. Only Significant Results Are Shown

Dependent variable	Independent variable	*M*	*SD*	*df*	*t*	*p*
% well-being	PAS	43.35	20.17	137	−3.52	0.001
	non-PAS	55.96	19.24			
PST	PAS	53.02	17.55	137	−3.07	0.003
	non-PAS	42.52	19.07			
PSDI	PAS	2.29	0.54	137	−5.35	<0.001
	non-PAS	1.78	0.51			

Dependent variable	Independent variable	*M*	*SD*	*df*	*t*	*p*
GSI	PAS	1.40	0.70	137	−4.38	<0.001
	non-PAS	0.90	0.59			
chosen res.	PAS	7.60	2.31	137	4.06	<0.001
	non-PAS	9.72	3.02			
PST	short-term	40.86	16.90	137	−2.04	0.04
	long-term	48.00	19.90			
PSDI	short-term	1.76	0.48	137	−2.64	0.01
	long-term	2.03	0.59			
GSI	short-term	0.85	0.57	137	−2.48	0.01
	long-term	1.15	0.68			
SStot	short-term	5.90	0.80	137	2.00	0.049
	long-term	5.55	1.00			
PST	coll	50.47	18.48	134	3.22	0.002
	ind	40.31	18.35			
GSI	coll	1.19	0.67	134	2.62	0.001
	ind	0.90	0.63			
SStot	coll	5.45	1.03	134	−2.82	0.006
	ind	5.89	0.81			

Note: coll: collectivist; ind: individualist; PAS: clients who seek help at the Psychological Assistance Service; non-PAS: clients who did not seek help at the Psychological Assistance Service.

Pearson correlational analysis (Table 2) showed that well-being had moderate negative correlations with distress (GSI, PST, and PSDI) and positive correlations with social support measures (SSso, SStot, SSfam, and SSfr). In addition, %well-being had a weak positive correlation with the dispersion of dependency (UCI) and a negative correlation with UCC. DG measures (i.e., number of dependencies, chosen resources, UCI, and concentration of dependencies, which is a part of the number of indicated resources and UCC) had significant positive correlations with MSPSS measures (SSso, SSfam, SSfr, and SStot) and negative correlations with distress indexes (GSI, PST, and PSDI). Both UCI and UCC had significant positive and negative correlations with distress measures (GSI, PST, and PSDI), but they had weaker correlations than some dependency indexes had (i.e., number of chosen resources, total number of dependencies, and the concentration of dependencies). SCL-90-R measures (GSI, PST, and PSDI) had significant negative correlations (mostly moderate) with MSPSS indexes.

Table 2: Pearson Correlations Between Dependency Grid Measures (DG), Perceived Support (MSPSS), Well-being (WHO-5), and Distress (SCL-90-R)

		MSPSS				WHO-5	SCL-90-R		
	Dependent variable	SSso	SSfam	SSfr	SStot	% well-being	GSI	PST	PSDI
WHO-5	% well-being	-	-	-	-	-	−.56***	−.47***	−.54***
	TOT dependency	.41***	.27***	.37***	.44***	.13	−.17*	−.28***	−.15
	%dependency	.45***	.29***	.40***	.47***	.12	−.09	−.19**	−.07
	indicated res.	.09	.11	.08	.12	.09	−.17*	−.18*	−.16
DG	chosen res.	.20*	.22**	.15	.25**	.17	−.27***	−.28 ***	−.25**
	UCI	.31***	.46**	.18*	.42***	.21*	−.24**	−.22**	−.20*
	UCC	−.48***	−.29**	−.45***	−.50**	−.19*	.17*	.20*	.16
	SSso	-	-	-	-	.29***	−.38***	−.33***	−.36***
MSPSS	SSfam	-	-	-	-	.34***	−.33***	−.28***	−.27***
	SSfr	-	-	-	-	.18*	−.37***	−.35***	−.33***
	SStot	-	-	-	-	.35***	−.45***	−.40***	−.40***

** p<.05 ** p≤.01 ***p≤.001*

Lastly, the cluster analysis highlighted a distribution in three clusters (Figure 1) of 31, 90, and 17 students, respectively, who, according to univariate ANOVA results, differed more for %well-being, $F(2, 135) = 28.71$, $p < .001$, GSI, $F(2, 135) = 101.41$, $p < .001$, PST, $F(2, 135) = 59.26$, $p < .001$, number of chosen resources, $F(2, 135) = 18.46$, $p < .001$, UCI, $F(2, 135) = 41.49$, $p < .001$, UCC, $F(2, 135) = 44.02$; $p < .001$, dependency on a significant other, $F(2, 135) = 11.46$, $p < .001$, dependency on self, $F(2, 135) = 4.28$, $p = .016$, and SStot, $F(2, 135) = 46.70$, $p < .001$.

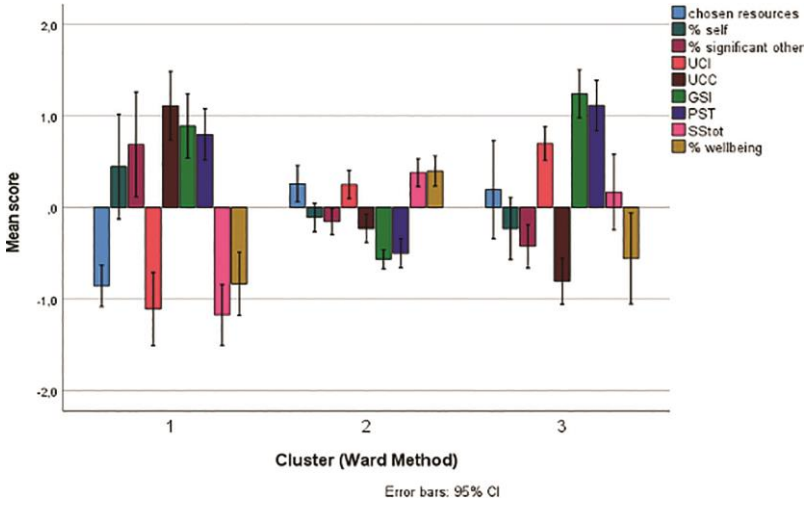

Figure 1: Distribution in the Three Clusters of the Standardized Variables Derived from WHO-5, SCL-90-R, DG, and MSPSS.

Bonferroni post hoc analysis (Table 3) showed that Cluster 1, compared with the other two clusters, had a smaller support network, lower UCI, and higher UCC, with the dependency more concentrated on a significant other and self, accompanied by lower perceived social support. At the same time, Cluster 1 reported lower well-being than Cluster 3 did and higher distress (GSI and PST) than Cluster 2 did. Clusters 2 and 3 did not significantly differ for the support network's breadth, reliance on self, reliance on a significant other, and UCI. Students in Cluster 2 differed from those in Cluster 3 because they had higher UCC and lower distress (GSI and PST) but had lower well-being. Regarding the distribution of participants' characteristics among clusters, chi-square analysis showed that PAS students, X^2 (2, 138) = 10.63, p = 0.005, were mostly distributed in Cluster 1 (48.4%) and Cluster 3 (47.1%), compared with Cluster 2 (21.1%), and that students in Cluster 2 were more often short-term students (37.38%) than students in Clusters 1 and 3 (16.1% and 17.6%, respectively), X^2(2, 138) = 6.60, p = 0.037.

Table 3: Bonferroni Post Hoc Analysis on the Standardized Variables Constituting the Three Clusters. Only Significant Comparisons Are Reported

Dependent variable	Cluster	M	SD	I-J	Std error	95% CI		*p*
						Lower limit	Upper limit	
% well-being	1	−0.84	0.94	−1.23	0.18	−1.66	−0.81	<.001
	2	0.40	0.79					
PST	1	0.80	0.76	1.30	0.15	0.91	1.70	<.001
	2	−0.50	0.75					
GSI	1	0.89	0.96	1.48	0.13	1.14	1.77	<.001
	2	−0.57	0.49					
Chosen res.	1	−0.86	0.62	−1.11	0.19	−1.57	−0.67	<.001
	2	0.26	0.94					
% self	1	0.45	1.56	0.57	0.20	0.06	1.05	=.021
	2	−0.11	0.74					
% signif. Other	1	0.69	1.56	0.84	0.19	0.37	1.31	<.001
	2	−0.16	0.67					
UCI	1	−1.11	1.09	−1.36	0.17	−1.76	−0.96	<.001
	2	0.25	0.73					
UCC	1	1.11	1.02	1.34	0.16	0.95	1.74	<.001
	2	−0.23	0.73					
SStot	1	−1.18	0.90	−1.56	0.16	−1.98	−1.16	<.001

Dependent variable	Cluster	M	SD	I-J	Std error	95% CI		*p*
						Lower limit	Upper limit	
	2	0.38	0.72					
Chosen res.	1	−0.86	0.62	1.12	0.19	−1.70	−0.40	<.001
	3	0.19	1.04					
% signif. Other	1	0.69	1.56	1.11	0.28	0.43	1.79	<.001
	3	−0.43	0.46					
UCI	1	−1.11	1.09	−1.81	0.24	−2.39	−1.23	<.001
	3	0.70	0.36					
UCC	1	1.11	1.02	1.92	0.24	1.34	2.49	<.001
	3	−0.81	0.49					
SStot	1	−1.18	0.903	−1.34	0.23	−1.91	−0.77	<.001
	3	0.17	0.804					
% well-being	2	0.40	0.79	0.96	0.22	0.41	1.50	<.001
	3	−0.56	0.97					
PST	2	−0.50	0.75	−1.62	0.19	− 2.08	−1.15	<.001
	3	1.11	0.53					
GSI	2	−0.57	0.49	−1.81	0.17	−2.21	−1.41	<.001
	3	1.24	0.51					
UCC	2	−0.23	0.734	0.575	0.21	0.07	1.08	=.019
	3	−0.81	0.49					

DISCUSSION

The aim of this study was to investigate international students' well-being in relation to their perceptions of social support and differentiation of resources (dispersion of dependency). Results showed that international students perceived their well-being as poor compared with the general population, confirming that they are potentially highly vulnerable to developing clinical psychological distress (Mori, 2000). Moreover, international students relied more often on another significant person (mostly a partner or a friend), rather than on their mothers, fathers, or selves and did not discriminate among resources. This result suggests that family in general might be less often considered when seeking help and support, probably because of their physical distance, as well as suggesting that international students indiscriminately seek help from one person or another.

Our expectation that seeking professional psychological help is associated with less perceived support and well-being, poor dispersion of dependency, and higher distress was confirmed. PAS clients showed lower well-being, higher distress, and fewer resources compared with non-PAS clients. Results showed that

students coming from collectivist cultures (i.e., Asia, Africa, or South America; for example, students coming from Vietnam, Iran, Venezuela) into an individualist one (i.e., Italy) generally perceived higher psychological distress and less perceived support than those coming from individualist cultures (i.e., Europe and North America) did. This finding is in line with previous literature and is likely due to greater cross-cultural differences (Atri et al., 2007; Bektaş et al., 2009; Dao et al., 2007; Jou & Fukada, 1997; Meghani & Harvey, 2016; Nahidi et al., 2018; Zhang & Goodson, 2011). In relation to the length of stay, short-term students experienced lower distress and higher social support than long-term students did, and they had a greater ability to disperse their dependency. These results expand the current literature (O'Reilly et al., 2015) and are in line with previous findings that pointed out that long-term students show higher stress (Kim et al., 2019). This could be due to a greater difficulty in adapting to a new environment (such as acculturation difficulties) and to the physical distance from their country of origin and support network when the situation lasts longer and/or the perspective is that it will last longer (Aldawsari et al., 2018; Kim et al., 2019). However, further studies should investigate whether this result might be due to different psychological profiles of those who decide to move to another country for shorter rather than longer periods or whether those who leave for longer periods already experience higher levels of distress before leaving.

This study's hypotheses about the relationships between the dispersion of dependency, the breadth of network and social support, psychological distress, and well-being were confirmed. Specifically, greater well-being and lower distress were associated with higher perceived social support (mostly globally and from the family) and higher dispersion of dependency. In line with previous literature (Cipolletta et al., 2019a; Laso Ortiz et al. 2015; Powell, 2013; Talbot et al. 1991), DG measures confirmed their relationship with social support and distress measures and suggested that when someone has a higher number of resources and a higher dispersion of dependency, they perceive greater social support and less distress. Results also confirmed the association between social support and well-being pointed out by previous studies (Atri et al., 2007; Nahidi et al., 2018; Sümer et al., 2008). Although family support was lower than the support of significant others was and had weaker relationships with distress and dispersion than the other kinds of support had, it showed a strong relationship with well-being, suggesting that this could still be an important aspect to consider in psychological interventions for international students.

Finally, the cluster analysis confirmed the expected differentiation of participants based on their dispersion of dependency, levels of perceived support, distress, and well-being. The students grouped in the first cluster were mostly students who sought help from the psychological service, with a lower number of resources, a concentration of the dependencies on themselves and on a significant other, low social support, lower levels of well-being, and higher levels of distress. The second cluster comprised mostly short-term students who did not seek help from the psychological service and who showed a higher number of resources with a higher discrimination among them, higher levels of well-being, and lower levels of distress. Finally, the third group was mainly composed by students who

sought help from the psychological service, who had a high dispersion of dependency but were mainly undifferentiated, that is, they tended to use the resources without discrimination. The third group showed lower well-being and higher levels of distress than the second group. These results suggest that the distribution of dependency may make a difference in well-being: Those with undispersed dependencies, both constricted (Cluster 1) and dilated (Cluster 3), perceived more distress and less well-being than those who mostly dispersed their dependency and differentiated their resources (Cluster 2) did. The fact that short-term and non-PAS students were mostly grouped in Cluster 2 suggests that these students distributed their dependency more on different resources than long-term students did, and that this behavior probably enabled them to maintain their well-being and not ask for professional support.

Limitations and Future Directions

A limitation of our study is that it is cross-sectional; thus, over a period of time, we cannot predict the degree to which social support and dispersion of dependency can be beneficial to distress and well-being. Future studies could address this issue by investigating students' distress before and after the therapeutic intervention, with follow-up meetings after a defined period. In addition, we did not consider whether students sought professional psychological help externally from PAS, whether students had ever relied on psychological support services, or whether they had ever had experiences abroad; all such information could be helpful in drawing students' profiles and in predicting their well-being. Future studies could also investigate whether the physical proximity of the people identified as "significant others" can have an impact on the levels of students' well-being. Also, the social support network of international students could be potentiated by planning specific programs according to the students' length of stay.

CONCLUSIONS

The results of this study showed that the breadth of social networks, the dispersion of dependency, and perceived support identify the associated constructs and that these are useful to understand international students' well-being. Moreover, DG proved to be a useful tool to integrate the information derived by a standardized scale of social support and to provide additional information on students' social ties by differentiating among resources to whom students refer for help. Overall, the results of this study highlight how different aspects such as length of stay, culture of origin, and the search for professional help play a fundamental role in international students' well-being.

All these aspects should be taken into consideration while planning personalized intervention strategies. Psychological interventions should be aimed at promoting well-being by forming groups to share acculturation/enculturation strategies, by reducing the potential cultural stigma associated with seeking psychological help, by guaranteeing counseling services that are accessible and

sensible to cultural differences, particularly for students from collectivist cultures, and by encouraging international students to explore the territory and make new social ties.

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