

### Abstract

European countries have been the key destination for many Syrians since the beginning of the civil war in 2011. In this new context, refugees have faced various challenges, including negative public attitudes and pressure of assimilation that might negatively influence psychophysical adaptation. This indicates the necessity of exploring the factors associated with the adaptation of refugees in their new society. Using a multidimensional individual difference acculturation (MIDA) model as a theoretical framework, the present study investigated the psychophysical adaptation of Syrian refugees ( $N = 265$ ,  $M_{\text{age}} = 33.03$  years) in Germany. The MIDA model is a theoretical model on immigrants' adaptation that takes into account the role of psychosocial resources (e.g., psychological strength), co-national connectedness (e.g., ingroup support), hassles, and acculturation orientations in predicting adaptation of immigrants. Using structural equation modelling, specific hypotheses drawn from the MIDA model were tested. It was found that Syrian refugees with high psychological strength and cultural competence reported high levels of adjustment as indicated by low levels of distress. On the other hand, refugees with high levels of perceived hassles reported low levels of adjustment as indicated by high level of distress. The results highlight the importance of psychological strength, cultural competence, and hassles in refugees' adaption. The study's findings have the potential to inform host country policymakers regarding the positive integration of refugees into German society, and specific recommendations have been made.

*Keywords:* Multidimensional Individual Difference Acculturation (MIDA), psychophysical adaptation, acculturation, Syrian refugees

### **Multidimensional Individual Difference Acculturation (MIDA) Model: Syrian Refugees' Adaptation into Germany**

Since the civil war in 2011, over 5.5 million Syrians have fled their country to seek safety in different parts of the world, including Europe (UNHCR, 2020). Germany is one of the key destination countries for Syrian refugees; about 30,000 Syrians settled in Germany after the civil war began in 2011 (Hindy, 2018). Since the arrival of Syrian refugees to Germany there has been national, political, and social debates on this group (Gurer, 2019). The German government has taken various measures to support the integration of Syrian refugees into Germany. For example, it has offered mandatory integration courses consisting of language and cultural orientation courses (Amaral et al., 2018). The cultural orientation courses have content regarding history, cultural values, norms, and the legal system of Germany. The German government has also implemented labour market policies (e.g., offering vocational training for refugees) to facilitate the labour integration of Syrian refugees (Hindy, 2018). Despite these policies and measures, successful integration of refugees into the German society has not been implemented fully and Syrian refugees still face various integration-related challenges (Fratzcher, 2018; Katbeh, 2020). For example, Syrian refugees reported having difficulty understanding the German language, which decreases their understanding of German laws and regulations, and making it challenging to communicate with host society members (Katbeh, 2020). In addition, it has been found that Syrian refugees have limited or no opportunity for establishing regular contacts with Germans, perceive prejudice, and recognize asymmetric power relations between German individuals and themselves, all of which negatively influence their social integration into German society (Hindy, 2018; Katbeh, 2020).

According to Migration Integration Policy Index (MIPEX), Germany does not have favourable scores on anti-discrimination policies to reduce negative attitudes towards migrants and refugees (Amaral et al., 2018). In other words, in Germany, there is a weak emphasis on anti-discrimination policies as a channel to promote the integration of refugees. Instead, the government integration efforts mainly focus on teaching German values and culture without creating space for discussing refugees' own cultural values (Katbeh, 2020). This is despite the argument that integration of newcomers is a two-way process that requires the efforts of both the larger society and newcomers (Berry, 2005). Indeed, Syrian refugees in Germany has perceived the integration efforts of the German government as a one-way process since they believe that German government's goal is to assimilate them by requiring them to adopt cultural values, norms of Germany (Katbeh, 2020). Furthermore, Syrian refugees have reported patronizing attitudes of the German government toward refugees (Hindy, 2018; Katbeh, 2020).

Germany's integration policies and measures are in contrast to countries with a higher score on MIPEX, such as Canada that have combined integration efforts of refugees (e.g., providing financial support for a year, language training, and employment counselling) with public support and community engagement (Amaral et al., 2018). This effort translates into promoting intercultural contact between Canadians and Syrian refugees to initiate positive intergroup relations, preparing local communities for new policies on refugee resettlement, and anti-discrimination policies (Alboim, 2016). This two-way perspective on integration has facilitated a relatively successful integration of Syrian refugees into Canada (Amaral et al., 2018).

An examination of the literature reveals a limited number of studies regarding the adaptation of Syrian refugees in Europe. For instance, although studies have focused on

predictors of refugees' psychological adaptation (e.g., trauma-related coping self-efficacy, psychological well-being, and acculturation orientations; Green et al., 2019; von Haumeder, 2019), contextual factors and individual factors have been overlooked. Birman and colleagues (Birman & Simon, 2014; Salo & Birman, 2015) have argued that contextual perspective is important in examining adaptation of newcomers in different context. For example, previous studies have shown that immigrant policies of settling societies (e.g., Bloemraad et al., 2008; Bourhis et al., 1997; Helbling, 2013) and characteristics of the immigrant group (e.g., ethnic and linguistic vitality, Galchenko & van de Vijver, 2007) influence adaptation outcomes.

Acculturation refers to psychological, behavioural, and social changes resulting from contact between individuals from different cultures (Redfield et al., 1936; Safdar et al., 2013). Extant research indicates various factors contributing to successful acculturation. Newcomers' cultural competence (Ward & Kennedy, 1993), stressors such as uncertainty surrounding legal status, search for employment, perceived discrimination, fears for relatives who stayed behind (Hassan et al., 2016; Renner et al., 2020; Tinhög et al., 2017), and perceived hassles (Abouguendia & Noels, 2001; Safdar & Lay, 2003) are some of the key factors relevant to acculturation of newcomers. Different models of acculturation have been developed that incorporate the factors discussed above. For instance, Ward and Kennedy (1994) proposed an acculturation model that explores the core (i.e., factors that affect all acculturating groups) and peripheral factors (i.e., culture-specific factors) that influence the psychosocial adaptation of newcomers. Berry (2003) developed an acculturation framework that examines the acculturation strategies of newcomers (e.g., assimilation, separation, integration, and marginalization) in the settling society. Safdar et al. (2003) proposed the MIDA model based on several psychological concepts, including social identity theory (Tajfel & Turner, 1979), acculturation attitudes (Berry,

1980a), positive psychological functioning (Ryff & Singer, 1996), ethnic identity (Phinney, 1990), psychological and sociocultural adaptation (Searle & Ward, 1990), and hassles and psychological distress (DeLongis et al., 1982). The focus of the current study was to examine the acculturation of Syrian refugees in Germany using the MIDA model. We employed the MIDA model for two main reasons. First, most studies examined refugees' negative mental health outcomes (e.g., Gerritsen et al., 2006; Mahmood et al., 2019), but limited research has been directed at the examination of psychological strength as antecedent of their adaptation.

Consistent with previous research (Hassan et al., 2016), we argue that refugees have sources that make them resilient to cope with the stress of the acculturation process. Therefore, they should not be uniformly labelled as a vulnerable group. The MIDA model incorporates psychological strength as a protective factor influencing the adaptation of newcomers. Second, the MIDA model has been employed with different samples in different contexts (e.g., Russian and Indian, Iranian immigrants in Canada (Safdar et al., 2012), Iranian immigrants in Canada, the Netherlands, UK, and US (Safdar et al., 2003; 2009) and with international students in Canada (Rasmi et al., 2009) and Spain (Berger et al., 2019). These studies indicated robust evidence supporting the validity of the model. The current study is the first to test the MIDA model with a sample of refugees within the German context.

### **MIDA Model**

MIDA model provides a framework that explores individuals' acculturation process by focusing on the core factors that influence the adaptation process of newcomers in the new society (Berger et al., 2019; Rasmi et al., 2009; Safdar et al., 2003, 2009, 2012). Consistent with the literature, the core variables predicting successful adaptation of newcomers include psychological strength, cultural competence, perception of social support, and ethnic identity

(Berry, 2003; Ward, 2001; Ward & Kennedy, 1994). Psychological strength is a multidimensional factor and is a trait variable. Conceptually, psychological strength resembles resilience<sup>1</sup>. Resilience is characterized to include personal and social resources that help individuals cope with crisis (Harms, Brady, Wood, & Silard, 2018). The literature indicates that although resilience and well-being are fundamentally related the two are distinct (Harms et al., 2018). Correspondingly, Psychological strength is distinct from psychological well-being which is operationalized in terms of positive emotion and joy and is unidimensional and a state variable. Consistent with previous studies that have examined the relation between resilience and psychophysical constructs, such as coping strategies (Kling et al., 1997), emotion regulation (Gross & John, 2003), and trauma disclosure (Hemenover, 2003), the MIDA model examines the relation between psychological strength as antecedent of psychophysical adaptation (see hypotheses below).

Hassles, another predictor variable in the MIDA model, refer to frequent irritants that individuals encounter and may include acculturation-specific and general hassles. General hassles comprise such experiences as traffic congestion, argument with a friend, and time constraints (Berger et al., 2019; Lay & Safdar, 2003). Acculturation specific hassles include difficulties in interacting with outgroup members or feeling isolated from own community. It has been suggested that hassles are accumulative and have a substantial influence on psychological and physical distress even when compared to major life events (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Weinberger, Hiner, & Tierney, 1987). In the current study, overall hassles were included in the MIDA model.

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<sup>1</sup> In the previous studies on the MIDA model, the term resilience was used. We recognize that we did not use resilience measure and therefore, in the current study we replaced resilience with *psychological strength*.

The model also includes measures of acculturation orientations (consisting of heritage culture orientation and host culture orientation) as mediating variables. The acculturation orientation variables of the model are based on Berry's (2003) bi-dimensional acculturation framework. According to Berry (2003), newcomers' acculturation attitudes are determined by two factors: a) the extent to which newcomers wish to maintain their heritage identity and b) the extent to which newcomers are willing to contact with larger society's members. In the present study, we included the two acculturation dimensions (i.e., heritage culture orientation and host culture orientation) in testing the MIDA model<sup>2</sup>. Research indicates that endorsing both these dimensions is associated with better adaptations. For example, a meta-analysis study conducted by Nguyen and Benet-Martinez (2013) showed that immigrants who identify with both host and heritage cultures are more likely to report psychological and sociocultural adaptation. Similarly, a more recent meta-analysis found engagement with both heritage and host culture (i.e., integration) is associated with the lowest level of depression compared to other acculturation strategies and rejecting both heritage and host cultures (i.e., marginalization) is associated with the highest level of depression among newcomers, including refugees, displaced people, and asylum seekers; Choy et al., 2021). Kim and Gorman (2021) also reported that Asian immigrants in U.S. who endorse engagement with both heritage and host culture had the lowest poor-to-fair physical health compared to those who engaged with one culture. This is consistent with Berry's (1997) integration hypothesis that those who adopt integration strategy feel well (psychologically), do well (socioculturally) and relate well (interculturally) as they benefit from resources of both heritage culture and host culture (Berry, 2017).

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<sup>2</sup> The MIDA model has been tested using either acculturation dimensions (Safdar et al., 2009) or acculturation strategies (Berger et al., 2019; Safdar et al., 2012).

The outcome variables measuring adaptation are the level of engagement with heritage culture (Ingroup Contact) and with the receiving society (Outgroup Contact), which are conceptualized as sociocultural adaptation (i.e., doing well). Similarly, a low level of psychological and physical distress is conceptualized as psychophysical adaptation (i.e., feeling well). Psychophysical adaptation as an outcome variable captures research findings that members of some Eastern and collectivistic cultures tend to show their emotional problems in a somatic way (Cheng & Hamid, 1996). In addition, somatization of depressions and anxiety have been reported broadly among immigrants and refugees (Rohloff, Knipscheer, & Kleber, 2014). Consequently, with the present, non-Western, Syrian sample, we included a measure of physical and psychological symptoms of distress to examine adaptation of participants. Previous studies using the MIDA model showed positive associations between psychological resources and outgroup contact and a negative association between psychological resources and psychophysical distress (e.g., Berger et al., 2019; Safdar et al., 2010). Moreover, connectedness with one's ethnic group and family is associated ingroup contact (e.g., Berger et al., 2019). Studies have also shown that migrants who perceive high hassles tend to report high level of psychophysical distress (e.g., Abouguendia & Noels; 2001; Keles et al., 2017; Safdar et al., 2009).

In the current study, level of employment (i.e., an indicator of doing well) was also added as an outcome variable to the model. Previous studies have examined the importance of the employment adaptation of newcomers within the overall adaptation of immigrants and refugees (e.g., Sidorchuk et al., 2017; Yijälä & Luoma, 2019). It has been suggested that employment status (i.e., employed versus not employed) and quality of employment (i.e., satisfaction with



one's employment) are indicators of employment adaptation (Ward, 2001; Yijälä & Luoma, 2019).

### **The Current Study**

By employing an acculturation model (MIDA) within the refugee context in Germany, we aimed to contribute to the limited literature regarding the adaptation of refugees as well as shedding light on the conditions of Syrian refugees in Germany. The following hypotheses were proposed (see Figure 1):

*Hypothesis 1: Psychological strength is positively associated with host culture orientation (H1a) and negatively with psychological distress (H1b) and physical symptoms (H1c).*

*Hypothesis 2: Cultural competency is positively associated with host culture orientation (H2a) and negatively with psychological distress (H2b) and physical symptoms (H2c).*

*Hypothesis 3: Host culture orientation mediates the relationship between outgroup support and psychological distress (H3a) and physical symptoms (H3b). In other words, those who report high level of outgroup social support have better adjustment as indicated by low level of psychological distress and physical symptoms if they are positively inclined toward the larger society.*

*Hypothesis 4: Heritage culture orientation mediates the relationship between ingroup support and psychological distress (H4a) and physical symptoms (H4b). In other words, those who report high level of ingroup social support have better adjustment as indicated by low level of psychological distress and physical symptoms if they are positively inclined toward their heritage culture.*

*Hypothesis 5: Ingroup support is positively associated with heritage culture orientation.*

*Hypothesis 6: Hassles are positively associated with psychological distress (H6a) and physical symptoms (H6b).*

*Hypothesis 7: Heritage culture orientation is negatively associated with psychological distress (H7a) and physical symptoms(H7b).*

*Hypothesis 8: Host culture orientation is negatively associated with psychological distress (H8a) and physical symptoms (H8b).*

We have also included employment status as an outcome variable which was not included in the MIDA model originally. The examination of employment is exploratory in nature. To test the MIDA model, we employed the structural equation model (SEM), using several recommended goodness-of-fit measures (e.g.,  $\chi^2$ , CFI, NFI, RMSEA) and evaluated how well the hypothesized model fit the observed data.

## **Method**

### **Participants**

Data were collected in 2017 in collaboration with the Research Institute of Vocational Training and Education (f-bb) as part of a larger research project. The sample consisted of 265 Syrian refugees ( $M_{age} = 33.03$ ,  $SD = 9.85$ ;  $Range_{age} = 16-58^3$ ) residing in Germany. The majority of the participants were male (76.8%), and participants' length of stay in Germany ranged between 19 and 24 months (58.3 %) at the time of the study. Of the sample, 10.6% had an elementary education, 32.2% had secondary education, and 26.9% had higher education. In terms of employment, 31.3% of participants were employed, while 68.7% were unemployed.

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<sup>3</sup> Only four participants were younger than 18 years old. The consent form for these participants was signed by an adult who accompanied them.

Also, 94.9% of the participants were asylum seekers. Therefore, they did not have legal refugee status in Germany<sup>4</sup>.

### Measures

The following scales were used in the study and all the items are listed in the appendix<sup>5</sup>. It should be noted that some of the variables in the MIDA model were not included in the current study. Specifically, the measure of ethnic identity had a large number of missing data (i.e., 48% missing data) and had to be dropped from analyses. In addition, In-Group Contact and OutGroup Contact (as measures of sociocultural adaptation) were accidentally omitted in the process of translation and were not included in the survey.

**Psychological Well-Being Scale (Psychological Strength).** This scale is a short version of Ryff and Singer's (1996) Psychological Well-Being Scale. We recognize that the term psychological well-being can be misleading in examining psychological strength. The scale, however, examines the multiple dimensions that are associated with resiliency or psychological strength and does not assess positive emotion and happiness that are characteristics of well-being. The scale consists of 18 items assessing six dimensions including: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. These dimensions combine to make a person resilient and provide personal and social protective factors that an individual can draw from to overcome adversity. Example of item is: "In general, I feel I am in charge of the situation in which I live" (ranging from 0 "Strongly

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<sup>4</sup> We conducted an independent sample t-test assessing the difference between asylum seekers and refugees in terms of main study variables (e.g., psychological strength, hassles, cultural/language competence, psychological distress, etc.). There were no statistically significant differences between the two groups.

<sup>5</sup> The survey included other items, mostly related to vocational training which were not included in the current study.

Disagree” to 5 “Strongly Agree”). Cronbach’s alpha coefficient of the scale for the current study was .56<sup>6</sup>.

**Cultural Competence Scale.** Perceived cultural competence, which assesses one’s perceived cultural efficacy including maintaining close relationships with others, perception of ability to achieve economic goals, feeling comfortable in being the only minority in a group, and language ability, were measured using a short version of Lay and Nguyen’s Cultural Competence Scale (1998 as cited in Safdar et al., 2003). An example of an item is: “I am able to understand jokes and idioms in the host country’s language” (ranging from 0 “Not at all to 5 “Very well”;  $\alpha = .76$ ).

**Outgroup Social Support Scale.** Perceived outgroup social support was measured using 10 items taken from the Multi-dimensional Scale of Perceived Social Support (Zimet et al., 1988). An example of an item is “Your friends from the host country share your good and bad times” (ranging from 0 “Not at all” to 5 “Very often”;  $\alpha = .85$ ).

**Ingroup Social Support Scale.** Perceived ingroup support was assessed using 10 items taken from the Multi-dimensional Scale of Perceived Social Support (Zimet et al., 1988). An example of an item is “Your family/friends or other refugees comfort you whenever you are feeling homesick” (ranging from 0 “Not at all” to 5 “Very often”;  $\alpha = .93$ ).

**Hassles Checklist.** The 12-item hassles checklist developed by Lay and Nguyen (1998) used to measure Syrian refugees’ general, outgroup, ingroup and family hassles (e.g., “Often being mistaken for someone from a different country other than my home country”; ranging from 0 “Not at all my part of life” to 5 “Very much part of my life”;  $\alpha = .70$ ).

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<sup>6</sup> Low alpha was surprising as this scale is well-established and widely used. See limitations of the study.

**Acculturation Orientation Scale.** Demes and Geeraert's (2014) Brief Acculturation Orientation Scale was used to measure participants' acculturation strategies. The scale is bidimensional, and it assesses attitudes toward host culture orientation and heritage culture orientation. Specifically, the scale consists of four items assessing host culture orientation ( $\alpha = .87$ ) and four items assessing heritage culture orientation ( $\alpha = .89$ ) on four indicators of acculturation orientation: the value of cultural friendships, tradition, characteristics, and actions. Sample items are "It is important for me to have home/host country friends," "It is important for me to take part in home/host country traditions" (ranging from 1 "Strongly disagree" to 7 "Strongly agree").

**Health Symptoms Scale.** This scale consists of six items taken from Safdar et al. (2003). These items were derived from the 20-item Health Problems Inventor-Revised (Kohn et al., 1994) and the 18-item Stress Symptoms Checklist (Cheng & Hamid, 1996). An example of an item is "I seem to get sick a little easier than other people" (ranging from 0 "Definitely True" to 5 "Definitely False";  $\alpha = .75$ ).

**Psychological Distress Inventory.** The nine-item Psychological Distress scale taken from Safdar et al. (2003) was used to measure the participants' psychological symptoms. An example of an item is "Have you felt downhearted and blue?" during the past four weeks (ranging from 0 "None of the time" to 5 "All of the time";  $\alpha = .76$ ).

**Employment.** The participants' employment status was assessed by the following item: "How long have you been working in Germany?". Answer options to this question include "I do not work, 1-6 months, 7-12 months, 13-18 months, 19-24 months and more than 24 months".

## Procedure

All scales were translated from English to German and to Arabic using back translation following the guidelines of the International Test Commission (ITC, 2017). The paper-pencil survey was distributed to Syrian participants who attended language and vocational training centers in Nuremberg, Germany by researchers at the f-bb of Nuremberg together with the trainers of the training courses. Informed consent (based on the guidelines of the German Psychological Society (DGP) and the 1964 Helsinki Declaration and its later amendments) was obtained from the participants before data collection, and participants were not asked any identifying questions to protect their anonymity. The study received ethical approval.

## Results

All analyses were conducted using IBM SPSS version 26. Data were checked for normality and missing values prior to analyses. Data on each variable had less than 20% missing values. Little's Missing Completely at Random (MCAR) tests indicated that missing data distributed randomly. Maximum Likelihood imputation was used to handle the missing data. Examining descriptive statistics indicated that participants scored above the mid-point on the scales of psychological strength ( $M = 3.26$ ), cultural competence ( $M = 3.28$ ), outgroup ( $M = 3.13$ ) and ingroup support ( $M = 3.29$ ), and host culture orientation ( $M = 5.59$ ). Contrarily, participants reported low levels of psychological distress ( $M = 1.71$ ), heritage culture orientation ( $M = 3.90$ ), hassles ( $M = 1.87$ ), and physical symptoms ( $M = 1.16$ ) as the mean scores on these scales were below the scales' mid-points (see Table 1).

Zero-order correlation coefficients were in the direction of our expectations. Gender was negatively associated with cultural competence,  $r = -.20^{**}$ ,  $p < .01$ , and positively with psychological distress,  $r = .17^*$ ,  $p < .05$ . Specifically, male Syrian participants reported greater

levels of cultural competence than Syrian female participants whereas female Syrian participants reported higher levels of psychological distress than male Syrian participants. Age was negatively associated only with cultural competence,  $r = -.33^{**}$ ,  $p < .01$ , indicating that older Syrian refugees had less cultural competence than younger Syrian refugees.

As it is reported in Table 1, it was found acculturation specific hassles was significantly correlated with outgroup support,  $r = .13^{**}$ ,  $p < .05$ , and employment status,  $r = -.17^{**}$ ,  $p < .01$  while general hassles was significantly related to host culture orientation  $r = .13^*$ ,  $p < .01$ . Other than these, both types of hassles had consistent correlations with most variables in the study. Specifically, both types of hassles were significantly correlated with psychological distress and physical symptoms. Similarly, both types of hassles were not correlated with psychological strength, cultural competence, ingroup support, and heritage culture orientation. Consequently, we incorporated hassles as one variable in the MIDA model.

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Insert Table 1 About Here

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The effects of gender, age, education, and length of the stay in Germany on study variables were also examined by conducting a series of MANOVA. The significant effects were found on age (Pillai's Trace = .16,  $F(9, 255) = 5.49$ ;  $p < .001$ ; partial  $\eta^2 = .16$ ) and gender (Pillai's Trace = .10,  $F(9, 240) = 2.93$ ;  $p < .01$ ; partial  $\eta^2 = .10$ ). Age had a significant effect only on cultural competence,  $F(1, 263) = 33.07$ ;  $p < .001$ ; partial  $\eta^2 = .11$ . Specifically, younger Syrian refugees had more cultural competence than older Syrian refugees. Likewise, gender had a significant effect only on cultural competence,  $F(1, 248) = 10$ ;  $p < .01$ ; partial  $\eta^2 = .04$  and

psychological distress,  $F(1, 248) = 7.21; p < .01$ ; partial  $\eta^2 = .03$ . More specifically, males reported higher levels of cultural competence than females and females reported greater levels of psychological distress than males. On the other hand, there was no significant effect of refugees' length of stay in Germany (Pillai's Trace = .14,  $F(45, 1065) = .70; p = .93$ ; partial  $\eta^2 = .03$ ) and education (Pillai's Trace = .08,  $F(27, 705) = .73; p = .85$ ; partial  $\eta^2 = .03$ ) on any of study variables.

### **SEM Analysis with AMOS**

We employed structural equation modelling (SEM) to test the fit between the hypothesized model and data using AMOS (Byrne, 2016)<sup>7</sup>. The measurement model was defined based on the relation between variables as hypothesized. The fit indices for the original model were  $\chi^2(25) = 60.51, p < .001$ ;  $\chi^2/df = 2.42$ , CFI = .91; and RMSEA = .07. Model fit was evaluated based on several criteria such as the ratio of  $\chi^2/df$  (CMIN/DF) below 3 (Kline, 1998), GFI (Goodness of Fit Index) .95 and above, CFI (Comparative Fit Index) .90 and above, RMSEA (Root Mean Square Error of Approximation) below .08 (Hooper et al., 2008; Kline, 2005). Based on modification indices, the only change recommended was adding covariance error between psychological strength and outgroup support. This modification improved all fit indices of the model ( $\chi^2(24) = 48.42, p < .01$ ;  $\chi^2/df = 2.02$ , CFI = .94; and RMSEA = .06). Overall, the revised model demonstrated a better model fit than the original model (see Figure 1). We did not remove non-significant paths from the model, as removing them did not result in significant improvement. Moreover, retaining all paths can allow comparability across studies using the MIDA model (Berger et al., 2019).

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<sup>7</sup> Given that gender, age, education, and length of stay in Germany did not statistically influence most study variables, these demographic variables were not controlled in SEM analysis.



Inconsistent with H1a, psychological strength was not associated with host culture orientation ( $\beta = .04, p = .48$ ). Consistent with H1b and H1c, however, we found a significant and negative relationship between psychological strength and psychological distress ( $\beta = -.23, p < .001$ ) and physical symptoms ( $\beta = -.23, p < .001$ ), indicating that Syrian refugees with high psychological strength reported higher levels of psychological adaptation. In line with H2a, H2b, and H2c, cultural competence was positively related with host culture orientation ( $\beta = .29, p < .001$ ), and negatively with physical symptoms ( $\beta = -.20, p < .01$ ) and psychological distress ( $\beta = -.14, p < .05$ ). By using indirect effect plugin of AMOS (Gaskin et al., 2020), we found the indirect effect of out-group support on psychological distress through host culture orientation ( $\beta = -.03, p < .05, 95\% \text{ CI } [-.04, -.01]$ ). This confirms H3a. However, contrary to Hypothesis 3b, we did not find the indirect effect of out-group support on physical symptoms through host culture orientation ( $\beta = .01, p = .51, 95\% \text{ CI } [-.01, .02]$ ). Likewise, H4a and H4b were not supported since heritage culture did not mediate the association between in-group support, and psychological distress ( $\beta = .02, p = .28, 95\% \text{ CI } [-.01, .05]$ ) and physical symptoms ( $\beta = -.00, p = .55, 95\% \text{ CI } [-.04, .02]$ ).

A positive relation was also found between ingroup support and heritage culture orientation ( $\beta = .35, p < .001$ ), which supported H5. We also found a positive correlation between hassles and psychological distress ( $\beta = .17, p < .01$ ) and between hassles and physical symptoms ( $\beta = .12, p < .05$ ), which confirms H6a and H6b. Inconsistent with H7a and H7b, the results did not demonstrate any association between heritage culture orientation and psychological distress ( $\beta = .07, p = .24$ ) and between heritage culture orientation and physical symptoms ( $\beta = -.03, p = .64$ ). In line with H8a, a negative association was found between host culture orientation and

psychological distress ( $\beta = -.15, p < .05$ ). However, contrary to H8b, no association was found between host culture orientation and physical symptoms ( $\beta = .04, p = .52$ ).

Our exploratory analyses showed a negative relationship between hassles and employment ( $\beta = -.16, p < .01$ ), indicating that Syrian refugees with high levels of hassles were more likely to be employed. The results also indicated no association between cultural competence and employment ( $\beta = .04, p = .50$ ).

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### **Discussion**

The findings indicate that Syrian refugees with higher levels of psychological strength reported lower levels of psychological distress and physical symptoms. This finding is consistent with previous results showing that psychological resources are associated with better adaptation of newcomers in the new culture (e.g., Berger et al., 2019; Safdar et al., 2010). Contrary to our expectation, psychological strength was not associated with host culture orientation in the MIDA model, although the two variables were significantly correlated (see Table 1). Several reasons can be suggested to explain this finding. First, it has been suggested that there is a difference between settler and non-settler societies in terms of newcomers' integration within the larger context (Alba & Foner, 2014). Not surprisingly, it is more difficult to integrate into non-settler societies (Sam & Berry, 2010). Haase et al. (2019) reported that Syrian refugees perceived Germany as a non-settler society even though accepting refugees is built in within the German law (Grundgesetz I at 1, art. 16a; Grundgesetz für die Bundesrepublik Deutschland, 1949).

Second, the nature of the inter-group context between Syrian refugees and German society may also explain this lack of relation. Syrian refugees in Germany reported their resentment regarding the patronizing attitudes of German society and government toward them (Hindy, 2018). They expressed that German society does not appreciate their pre-existing skills and their cultural contribution to German society. Instead, they believe that German society tries to transform their existing skills to create new individuals (Hindy, 2018). Furthermore, controlling for cultural competence may account for the lack of significant association of psychological strength with host culture orientation. However, we are cautious in providing these interpretations as the lack of relation between psychological strength with host culture orientation could be mostly due to the scale's low internal consistency.

In line with the past literature, Syrian refugees with higher levels of cultural competence reported more adjustment, as indicated by low levels of psychophysical distress. It is plausible to assume that refugees with cultural competence may do better in dealing with stressors that they encounter during acculturation process. Moreover, Syrian refugees with high cultural competence were more likely to have host culture orientation. This finding is in accordance with previous studies showing that migrants with linguistic and cultural skills are more likely to have positive attitudes toward the host society (Safdar et al., 2009). Taken together, these results suggest the importance of cultural competence in predicting successful psychophysical adaptation. It is also important to note that our design was correlational in nature so that Syrian refugees with host culture orientation might be more culturally competent. Surprisingly, cultural competency was not linked to the employment of Syrian refugees. We argue that the lack of a link between cultural competency and employment is to do with the time lag to achieve cultural skills. Although Germany provides vocational school training to achieve workforce integration

of Syrian refugees, this training takes time (Hindy, 2018). Furthermore, our participants had been in Germany between 19 and 24 months, which is potentially too short to translate into the ability to find employment.

The finding that perceived ingroup support was linked to heritage culture orientation is consistent with the literature (e.g., Safdar et al., 2009; 2010), indicating that support from ingroup increases the tendency to be more inclined to engage with heritage culture; or vice versa. We also found that Syrian refugees with high levels of hassles reported difficulty in psychophysical adaptation. This finding was in line with existing literature (e.g., Berger et al., 2019; Nguyen, 2006; Safdar et al., 2003, 2009, 2010). As mentioned previously, Syrian refugees encounter various acculturative hassles (Hassan et al., 2016). Hence, reducing hassles such as offering language support and humanitarian aid contributes to better mental and physical health of refugees.

Furthermore, we found that Syrian refugees who reported higher levels of hassles were more likely to be employed. Syrian refugees with higher levels of hassles tend to be employed. Since our findings are correlational, this finding can be interpreted bi-directional as well. That is, employed participants could be exposed to more stress and difficulties in their work environment including insensitive comments, insults, language and communication anxiety, and perception of discrimination. It is also important to note that asylum seekers might have restricted employment opportunities due to their legal status. In Germany, most asylum seekers can apply for a work permit after a waiting period (approximately three months; OECD, 2017). Nevertheless, asylum seeker status of Syrian refugees might impact the level of unemployment in the current study.

We also found that individuals who reported outgroup support were less likely to report psychological distress. This effect was mediated through host culture orientation. This finding

corroborates Berry et al.'s (2006) finding that engagement with host culture is associated with immigrants' adjustment. However, we did not find a similar pattern for physical symptoms. Specifically, host culture orientation did not mediate the effect of outgroup support on physical symptoms. Studies indicated that refugees' war-related traumas and negative experiences in the process of fleeing are associated with negative physical health effects (Gerritsen et al., 2006). The absence of a relationship between host culture orientation and physical symptoms may reflect methodological limitations, including internal and external validity of the measures used.

We also did not find a relation between heritage orientation and psychological distress, and physical symptoms. The absence of association between heritage orientations and psychophysical distress is consistent with Berger et al.'s (2019) study conducted with Erasmus students in Europe, while it contradicts Gui et al.'s (2016) findings based on a study with international and domestic students in Canada. This highlights that the nature of the association between acculturation and adaptation variables depends on the specific acculturating groups (e.g., migrants, refugees, and sojourners; Demes & Geeraert, 2014) and the characteristics of the larger settling society (Birman & Simon, 2014). Although maintaining one's heritage culture could act as a protector factor in the lives of newcomers, this may not be a realistic option for our particular sample who settled in Nuremberg with a population structure of 82% German nationality and the majority of the remaining of citizens from EU countries (Office of Urban Research and Statistics for Nuremberg ad Furth, 2017). Overall, in Germany majority members exert pressure on immigrants to assimilate and indeed to most Germans, integration of refugees and migrants means assimilation of them (Hindy, 2018). A recent report has also shown that Syrian refugees perceive that the German government demands them assimilate into German culture (Katbeh, 2020).

The current study employed a variation of the MIDA model consisting of the individual variables instead of composite scores. This allowed us to examine the effect of each variable (e.g., psychological strength, cultural competence, outgroup support, ingroup support and hassles) on adaptation outcomes separately and get a deeper insight. Furthermore, the present study is the first to test the MIDA model with a sample of refugees. The findings indicate that some relations between variables in the model continue to hold across samples and across contexts while other relations varied. Psychological strength and social support play important roles in the adaptation of immigrants, refugees, and sojourners (e.g., international students) as demonstrated in studies using the MIDA model (Berger et al., 2019; Safdar et al., 2003, 2009, 2010). However, the role of acculturation orientations tends to vary across groups (Gui et al., 2016). Consequently, it is suggested to include contextual factors in future examination of the MIDA model to demonstrate the interplay of contextual and individual factors as critical factors influencing acculturation outcomes (Birman & Simon, 2014; Galchenko & van de Vijver, 2007; Salo & Birman, 2015).

Based on the research findings, specific recommendations can be offered to enhance the successful integration of Syrian refugees into Germany. First, a positive relationship between cultural competence and psychological strength, and between cultural competence and psychophysical adaptation highlights the importance of programs aiming to increase the cultural competence of Syrian refugees. Although Germany offers cultural orientation courses, a recent report showed that Syrian refugees struggle to comprehend Germany's traditions, laws, customs, education, and political system (Katbeh, 2020). Hence, developing educational programs in the mother language of Syrian refugees facilitates cultural competence of Syrian refugees and their understanding of Germany's traditions, laws, and customs (Katbeh, 2020).

Second, past research has shown how newcomers' heritage culture can play a protective role in their adaptation into the new society (e.g., Burgos et al., 2017; Nguyen & Benet-Martínez, 2013). Thus, the absence of an association between heritage culture orientation and psychophysical adaptation in the German context delineates the importance of creating some programs for appreciating the cultural diversity and customs, values, and traditions of heritage culture. It is also worth mentioning that the lack of significant findings between heritage culture and psychophysical adaptation might point to the contextual nature of the relationship between acculturation and adaptation. In Germany, Syrian refugees might feel strong assimilative pressures, so heritage culture orientation might not be adaptive. Indeed, we found that the level of heritage cultural orientation was lower than host cultural orientation (see Table 1). This indicates that within the German context, participants did not perceive engaging with their heritage culture would help them in their process of adaptation into the German society. This is consistent with the literature that dominant groups ideologies and policies has impact on the choices that non-dominant groups make (Berry, 1974, 1980b; Safdar & Van de Vijver, 2019). Indeed, when assimilation is expected by the dominant group, melting pot is the outcome, and when separation is expected, segregation is the outcome. We argue that designing and implementing interventions that consider the integration of refugees as a two-way process that requires the efforts of both refugees and host society members is an essential step. In other words, instead of solely emphasizing the role of refugee commitment and efforts in the integration process, it is also essential to emphasize the responsibility of receiving society in the integration process of refugees. Although the German government has recently started to perceive integration as a two-way process (Katbeh, 2020), it can be argued that this perception has not been translated into institutional practices since integration initiatives are still based on

the effort and commitments of refugees (e.g., learning German customs and language). Hence, Germany can learn some lessons from the integration efforts of Canada, which is considered a model for the other countries by the United Nations (Amaral et al., 2018). For example, the Government of Canada put a strong emphasis on getting public support in integrating Syrian refugees through partnerships and teamwork. Through partnering with service providers (e.g., Volunteer Canada), the government of Canada developed a Volunteer Management Handbook to support immigrantserving organizations since such organizations collaborate with volunteers to assist newcomers to Canada (Government of Canada, 2019). Additionally, Syrian refugees have had access to all settlement supports, including one-to-one and group mentoring with senior immigrants and Canadian-born (Government of Canada, 2019). Thus, the German government can also benefit from local, international, national, and local partnerships in integrating refugees and migrants.

Third, the finding that outgroup support was negatively associated with psychological distress through host culture orientation delineates the necessity of initiatives that connect refugees with host society members. Hence, the government of Germany should develop programs to build positive connections and contact between refugees and host society members, public institutions, and community service providers.

The study has some limitations. First, our study is based on a cross-sectional and correlational design, which prevents us from making causal inferences. Future research should conduct longitudinal studies to see clear direction among the variables that predict refugees' adaptation. Second, the low reliability of the psychological well-being scale is one of the main limitations of the study and inconsistent with the previous studies, which indicated an acceptable internal consistency (e.g., Berger et al., 2019; Safdar et al., 2003, 2009). However, despite the



low reliability of the scale, the relation of psychological strength with other variables in the model was in the expected directions. Third, the MIDA model treats acculturation orientations as the dichotomy of host and heritage culture orientation. However, refugees in Germany could identify with other major migrant groups in Germany (e.g., Turkish community), with a particular city or region of Germany, or with a unique sociopolitical group. Hence, host/heritage culture dichotomy could be a theoretical limitation of the MIDA model. The host/heritage culture dichotomy could also be the reason for the limited mediation effects in the current study. Taking other possible acculturation orientation opportunities of immigrants into account can be a critical step for the theoretical development of the MIDA model.

In conclusion, we investigated the associations between personal and contextual variables in examining the adaptation of the Syrian refugees in Germany. Examination of the literature on Syrian refugees highlights the role of language proficiency, employment (Gürsoy & Ertaşoğlu, 2017), faith, connections with settling country's members as important in adaptation of Syrian refugees (Oudshoorn et al., 2019), which are in line with our findings. Our study builds on the existing evidence and further validates the MIDA model as a theoretical model in examining refugees' adjustment. The study contributes to the refugee acculturation literature and highlights the crucial role of key variables in the successful adaptation of Syrian refugees into German society.

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**Compliance with Ethical Standards:** All procedures performed in studies involving human participants were in accordance with the ethical standards of the Universitat de Barcelona and the project partners Ludwig Maximilians University of Munich, University of Guelph and fbb and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards

**Declaration of Interest:** The first author is one of the associate editors of the International Journal of Intercultural Relations.

**Informed Consent:** Informed consent (based on the guidelines of the German Psychological Society (DGP)) was signed and obtained from all individual adult participants included in the study before data collection.

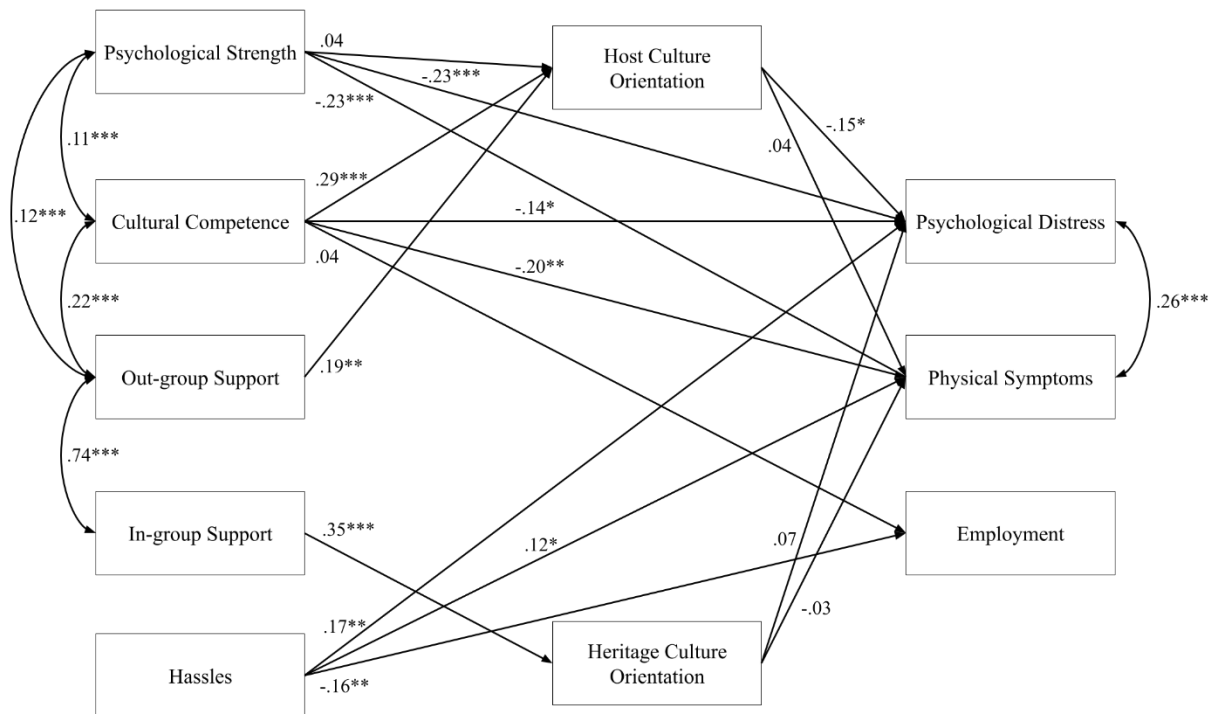
**Availability of Data:** The dataset generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

**Table 1***Descriptive statistics, internal consistency scores of variables and correlations between them*

|                                    | 1      | 2      | 3      | 4     | 5     | 6    | 7      | 8     | 9     | 10     | 11    | 12 |
|------------------------------------|--------|--------|--------|-------|-------|------|--------|-------|-------|--------|-------|----|
| 1. Psychological strength          | -      |        |        |       |       |      |        |       |       |        |       |    |
| 2. Cultural Competence             | .34**  | -      |        |       |       |      |        |       |       |        |       |    |
| 3. Out-group Support               | .30**  | .36**  | -      |       |       |      |        |       |       |        |       |    |
| 4. In-group Support                | .24**  | .21**  | .58**  | -     |       |      |        |       |       |        |       |    |
| 5. Hassles (overall)               | .01    | .13*   | .15*   | .11   | -     |      |        |       |       |        |       |    |
| 6. Heritage Culture Orientation    | .08    | .06    | .25**  | .35** | -.01  | -    |        |       |       |        |       |    |
| 7. Host Culture Orientation        | .20**  | .37**  | .31**  | .14*  | .17** | .15* | -      |       |       |        |       |    |
| 8. Psychological Distress          | -.30** | -.25** | -.21** | -.14* | .12*  | .02  | -.21** | -     |       |        |       |    |
| 9. Physical Symptoms               | -.29** | -.25** | -.13*  | -.15* | .10   | -.05 | -.06   | .48** | -     |        |       |    |
| 10. Employment Status              | .04    | .02    | .00    | .03   | -.16* | .07  | -.02   | -.05  | -.12* | -      |       |    |
| 11. Acculturation Specific Hassles | -.02   | .09    | .13*   | .11   | .89** | .00  | .12    | .17** | .14*  | -.17** | -     |    |
| 12. General Hassles                | .02    | .08    | .10    | .04   | .77** | .01  | .13*   | .15*  | .13*  | -.11   | .46** | -  |
| M                                  | 3.26   | 3.28   | 3.13   | 3.29  | 1.87  | 3.90 | 5.59   | 1.71  | 1.16  |        |       |    |
| SD                                 | .52    | .64    | 1.34   | 1.10  | .66   | 1.51 | 1.24   | .86   | .87   |        |       |    |
| alpha                              | .56    | .76    | .85    | .93   | .70   | .89  | .87    | .76   | .75   |        |       |    |

*Note.* Employment status was coded as 0 = employed and 1 = unemployed\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Figure 1**  
Best-fit MIDA Model



*Note.* Measurement errors (E) were found as follows: Psychological strength E = .27; Cultural competence E = .41; Out-group support E = 1.66; In-group Support E = 1.21; Hassles E = .43; Host culture orientation E = 1.26; Heritage culture orientation E = 1.99; Psychological distress E = .92; symptoms E = .66 ; Employment E = .21.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

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## Appendix

List of all scales in the order described in the method

section.

### **Psychological Well-being (Psychological Strength) Scale.**

*In the following you will find statements that are descriptive for a lot of people. Please indicate the extent to which you think those statements describe you as a person.*

*Likert scale ranging from 0 (strongly disagree) to 5 (strongly agree)*

- 1) I tend to be influenced by people with strong opinions.
- 2) In general, I feel I am in charge of the situation in which I live.
- 3) I think it is important to have new experiences that challenge how you think about yourself and the world.
- 4) I have not experienced many warm and trusting relationships with others.
- 5) I live life one day at a time and don't really think about the future.
- 6) In many ways, I feel disappointed about my achievements in life.
- 7) I have confidence in my own opinions, even if they are contrary to the general consensus.
- 8) The demands of everyday life often get me down.
- 9) For me, life has been a continuous process of learning, changing, and growth.
- 10) People would describe me as a giving person, willing to share my time with others.
- 11) Some people wander aimlessly through life, but I am not one of them.
- 12) I like most aspects of my personality.
- 13) I judge myself by what I think is important, not by the values of what others think is important.
- 14) I am quite good at managing the many responsibilities of my daily life.
- 15) I gave up trying to make big improvements or changes in my life a long time ago.
- 16) Maintaining close relationships has been difficult and frustrating for me.
- 17) I sometimes feel as if I have done all there is to do in life.
- 18) When I look at the story of my life, I am pleased with how things have turned out.

### **Cultural Competence Scale.**

*Please indicate the extent to which the following statements reflect your feelings and opinions most accurately. Likert scale ranging from 0 (Not at all) to 5 (Very well)*

- 1) Regarding your use of language:
- 2) How well do you understand German language?
- 3) How well do you speak German language?
- 4) I feel that I have the necessary skills to adjust to the German culture.
- 5) I believe that while I am in Germany, I am able to develop and maintain close interpersonal relationships with people from this country.
- 6) I believe that while I am in Germany, I am able to develop and maintain close interpersonal relationships with people from my home country.
- 7) I am able to understand jokes and idioms in the German language.



- 8) I believe that I can achieve my economic goals in Germany.
- 9) I would feel comfortable in a group of people where I am the only person from my home country.
- 10) I know how to communicate with my people at work or on the street who are Germans.
- 11) Others have difficulty understanding my speech in the German language. 12) I have no trouble figuring out what I should tip in restaurants and taxis.

### **Outgroup Social Support Scale.**

*Please indicate on the scale given below how much you agree with the following statements regarding the support given to you by your friends from your host country. Likert scale ranging from 0 (Not at all) to 5 (Very often).*

Your friends from Germany ...

- 1) comfort you whenever you feel homesick.
- 2) listen and talk with you whenever you feel lonely or depressed.
- 3) share your good and bad times.
- 4) spend time chatting with you whenever you are bored.
- 5) visit you to see how you are doing.
- 6) provide necessary information to help orient you to your new surroundings.
- 7) help you deal with some local institutions' official rules and regulations. 8) explain things to make your situation clearer and easier to understand. 9) tell you what can and cannot be done in Germany.
- 10) help you interpret things that you don't really understand.

### **Ingroup Social Support Scale.**

*Please indicate on the scale given below how much you agree with the following statements regarding the support given to you by your family/friends or other refugees. Likert scale ranging from 0 (Not at all) to 5 (Very often).*

Your family/friends or other refugees ...

- 1) comfort you whenever you feel homesick.
- 2) listen and talk with you whenever you feel lonely or depressed.
- 3) share your good and bad times.
- 4) spend time chatting with you whenever you are bored.
- 5) visit you to see how you are doing.
- 6) provide necessary information to help orient you to your new surroundings.
- 7) help you deal with some local institutions' official rules and regulations. 8) explain things to make your situation clearer and easier to understand. 9) tell you what can and cannot be done in Germany.
- 10) help you interpret things that you don't really understand.

### **Hassles Checklist.**

*Following is a list of experiences that many people have at some time or other. Please indicate for each experience how much it has been a part of your life over the past few months. Likert scale ranging from 0 (not at all part of my life) to 5 (very much part of my life).*

- 1) Often being mistaken for as someone from a different country other than my home country.
- 2) Being overburdened with traditional family duties and obligations.
- 3) Feeling that I am being taken advantage of by my peers because I am foreign.
- 4) Not enough time to meet my obligations.
- 5) My ideals and values being rejected by my family member(s) because they are seen as too much influenced by the German culture.
- 6) Arguing with spouse or friends.
- 7) Making decisions about my future career.
- 8) Friends from my home country see my values and thinking as too much influenced by the German culture.
- 9) My fluency in the German language is being underestimated by people who are not from my home country.
- 10) Feeling isolated in my home country's community.
- 11) I do NOT seek the advice of my family, since they are often too narrow-minded.
- 12) I feel being pressured by fellow countrymen to participate in cultural or religious events of my home country.

#### **Acculturation Orientation Scale.**

*"It is important for me to" ..... 1 (Strongly disagree) and 7 (strongly agree)*

- 1) have Syrian friends
- 2) take part in Syrian traditions
- 3) hold on to my Syrian characteristics
- 4) do things the way Syrian people do
- 5) have German friends
- 6) take part in German traditions
- 7) develop my German characteristics
- 8) do things the way German people do

#### **Health Symptoms Scale.**

*Many people react with health symptoms to different situations. In the following, please indicate how you yourself see your state of health.*

- 1) In general, would you say your health is (0=poor; 5=excellent)
- 2) During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.) (0=none of the time; 5=all of the time).

*How TRUE or FALSE is each of the following statements for you? (0=Definitely false; 5=Definitely true)*

- 3) I seem to get sick a little easier than other people.
- 4) I am as healthy as anybody I know.
- 5) I expect my health to get worse. 6) My health is excellent.

#### **Psychological Distress Inventory.**

*The following questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. Likert scale ranging from 0 (None of the time) to 5 (All of the time) How much of the time during the past 4 weeks...* 1) Did you feel full of pep (energy)?

- 2) Have you been a very nervous person?
- 3) Have you felt so down in the dumps that nothing could cheer you up?
- 4) Have you felt calm and peaceful?
- 5) Did you have a lot of energy?
- 6) Have you felt downhearted and blue?
- 7) Did you feel worn out?
- 8) Have you been a happy person?
- 9) Did you feel tired?