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Mental health of asylum seekers and refugees: The role of trauma and postmigration living difficulties and the moderating effect of intergroup contact

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ABSTRACT

Refugees undergo traumatic events during the premigration and transit phases and also experience severe difficulties after resettlement in a new country, and they are therefore at high risk of developing mental health problems. The present studies examined if intergroup contact with members of the receiving society moderates these negative impacts on refugees' mental health. Two studies with refugees in Switzerland ($N = 262$) revealed both buffering and exacerbating effects of intergroup contact. Having more Swiss friends was associated with a less negative relationship between postmigration living difficulties and mental health. Surprisingly, having more Swiss friends was also associated with a more negative relationship between traumatization and mental health. These results suggest that intergroup contact may help refugees adjust to the living conditions in the receiving society, but may pose a risk regarding trauma-related disorders.

1. Introduction

At the end of 2021, the total number of people worldwide who were forced to flee their homes due to conflicts, violence, fear of persecution and human rights violations was 89.3 million (UNHCR, 2021). Due to the ongoing Ukrainian war, these numbers will be much higher. It is this forcedness of migration that distinguishes refugees from other types of migrants (Echterhoff et al., 2020). Please note that we use the term refugees in the sense of "persons having been forced to flee their home", whether their refugee status has been recognized or not.

Before and during the flight, refugees are often exposed to multiple types of traumatic events (Marshall et al., 2005; Silove et al., 1998). Research conducted over the past three decades has demonstrated a correlation between various traumatic experiences and subsequent negative psychological outcomes, including posttraumatic stress disorder (PTSD; Johnson and Thompson, 2008; Mollica et al., 1998; Neuner et al., 2004; Steel et al., 2009), depression (Mollica et al., 1998; Starck et al., 2020; Steel et al., 2009) and anxiety (Ayazi et al., 2014). Furthermore, the accumulation of traumatic events is associated with more severe psychiatric symptoms (Knipscheer et al., 2015; Neuner et al., 2004; Steel et al., 2002).

Refugees experience serious difficulties not only during the premigration and transit phases but also after resettlement in a new country (Li et al., 2016). These difficulties include delays in the asylum application process, prolonged status insecurity, rejected refugee claims, poor socioeconomic living conditions, concern about family back home, social exclusion and perceived discrimination. Such postmigration problems have a negative impact on the mental health and psychosocial well-being of refugees (Aragona et al., 2012; Ellis et al., 2008; Hecker et al., 2018; Laban et al., 2005; Schick et al., 2016). Studies on mental health among refugees indicate high prevalence rates of mental health problems, particularly PTSD, anxiety, and depression, compared to the general population (Bogic et al., 2015; Fazel et al., 2005; Steel et al., 2009). A recent meta-analysis based on data from both low and high income countries and from different cultural groups reported a prevalence of 32% for major depressive disorder 31% for PTSD (Patanè et al., 2022).

Despite the high prevalence of mental health problems in refugee populations, there are several barriers limiting access to mental health care, such as language problems, long waiting lists due to limited treatment capacity, stigma of mental disorders and lack of information about mental health treatment (Kiselev et al., 2020; Ng, 1997; Schick and Schnyder, 2017; Schlechter et al., 2021). Therefore, in addition to understanding potential stress factors that contribute to mental health problems among refugees, it is important to investigate potential protective factors.

Considering that reduced social contact, isolation, lack of social support, difficulty with integration, and lack of a sense of belonging are among the most important challenges after the flight (Sundvall, 2021),

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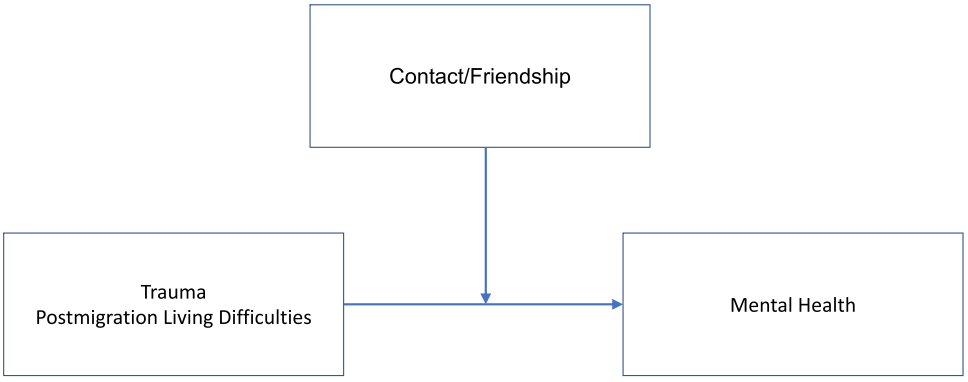

Fig. 1. Assumed relationship between risk factors and mental health of refugees and the role of contact.

mental health among refugees is likely to benefit from supportive interpersonal relationships (Aro et al., 1989; Cohen and Wills, 1985; Dalgard et al., 1995; Kawachi and Berkman, 2001). Studies focusing on migrants and refugees distinguish between bridging and bonding social capital (cf. Putnam, 2000) to examine potential resources available within and outside social networks (e.g., Drever and Hoffmeister, 2008; Lancee, 2010; Laurence, 2011; Li, 2004). Bonding social capital is understood as contact with family members or friends who have the same ethnic or national background, as well as contact with other refugees. Bridging social capital includes social relationships with members of the receiving society (intergroup contact).

The various types of social networks have different functions and provide different opportunities for refugees to adjust to their new society and recover from stressful events before and during their flight. For example, social networks that are based on bonding social capital are very important for maintaining a sense of identity and talking about shared experiences related to flight and migration (Goodson and Phillimore, 2008). Similarly, the Social Identity Model of Identity Change assumes that people faced with traumatic experiences will be more resilient when valued social identities are gained or maintained (Muldoon et al., 2019). Thus, it is likely that contact with other refugees from the same country can be a protective factor for mental health.

Bridging social capital – or intergroup contact with members of the receiving society – has been emphasized in migration studies, but they focused mainly on outcomes such as prejudice and intergroup relations (e.g., Brown and Hewstone, 2005; Pettigrew and Tropp, 2006) or economic integration (De Vroome and Van Tubergen, 2010). Bridging social capital may provide a range of opportunities that could contribute to the development of autonomy, confidence, and security, thereby buffering the negative effects of traumatization and postmigration living difficulties on well-being. For instance, members of the receiving society may be able to offer instrumental support for everyday problems. Similarly, by way of interacting with members of the receiving society, refugees may feel more accepted and welcomed (Kotzur et al., 2018), which is likely to reduce acculturation stress. Therefore, intergroup contact might be a promising protective factor for refugees' well-being and mental health.

However, there have been very few empirical investigations of the effect of intergroup contact on refugees' well-being. For example, a study of Sudanese refugees in Australia concluded that social support from the Sudanese community is positively related to mental health whereas social support from the wider Australian community is not (Schweitzer et al., 2006). In another study of 280 refugees in England, Tip et al. (2019) have shown that intergroup contact with British people at earlier time points was associated with increased well-being of refugees at later time points. However, the authors did not use a standard measure of refugee mental health. A study conducted with refugees in Germany found that contact with members of the receiving society and better language skills were associated with less psychological stress and higher life satisfaction (Walther et al., 2020). A study conducted with adolescent Syrian refugees in Turkey observed positive correlations between interethnic friendships and well-being (Karataş et al., 2021). Finally, research conducted in Italy by Marinucci and colleagues showed that refugees who are more socially connected to Italians may suffer less from social exclusion (Marinucci and Riva, 2021; Marinucci et al., 2022).

To our knowledge, none of the previous studies of refugees' contact with the receiving society has taken into account the severity of pre- and postmigration stressors and their impact on mental health. The goal of the present research was to document both the extent of flight-related stressors and psychological symptoms among refugees in Switzerland and examine the buffering effect of intergroup contact on the negative relationship between stress factors and mental health. The present research consists of two separate studies: a smaller pilot study and a replication with a larger sample. Fig. 1 shows the assumptions guiding the present research. We expected negative relationships between risk factors (trauma and postmigration living difficulties) and mental health, moderated by intergroup contact with receiving society such that these negative relationships would be weaker among refugees with more friends from the receiving society.

2. Method

Our research consists of two studies ($N = 62$ and $N = 200$) examining the same hypotheses. Study 1 was exploratory and Study 2 was done to corroborate the findings of Study 1 which were in part unexpected and did not allow for clear conclusions given the small sample size. Study 2 added a measure of Perceived Stress because this construct was measured with a single item in Study 1. Given the similarity of procedures, we describe the methods and results of these studies side by side to facilitate comparisons. Materials and data associated with this research can be found at https://osf.io/ydfjm/.

2.1. Participants

2.1.1. Study 1

Eight refugee accommodation centers in the canton of Zurich, Switzerland, were included in the sampling scheme. Eligibility criteria included being over 16 years of age, capable of speaking Arabic, Farsi or Tigrinya[1] and living in Switzerland for less than 6 years. A total of 62 refugees and asylum seekers (45 male and 17 female) agreed to enter the study and gave their written informed consent to participation. Judging from anecdotal feedback, reasons for refusal (about 80%) to participate were mostly indifference and concern about sharing personal information. The age of the participants ranged from 16 to 42, with a mean of 26 years ($SD = 6.52$). The majority of participants came from Afghanistan, Syria and Eritrea. Thus, although the sample is a convenience sample, it corresponds relatively closely with the 2017 (i.e. the year of data collection) population statistics for asylum seekers and temporarily admitted

[1] These languages were selected because they were spoken by the majority of refugees and asylum seekers at the time of the survey according to the State Secretariat for Migration SEM (2017).

Table 1
Sample Characteristics for Study 1 and Study 2.

Characteristics	Study 1 $N = 62$	Study 2 $N = 200$
Age *M (SD)*	26.2 (6.52)	28.43 (8.08)
Gender *n* (%)		
Female	17 (27)	66 (33)
Male	45 (73)	134 (67)
Marital status *n* (%)		
Single	28 (46)	99 (49.5)
Married	28 (46)	88 (44)
Separated	0	5 (2.5)
Divorced	4 (6)	2 (1)
Widowed	1 (2)	6 (3)
Country of origin *n* (%)		
Afghanistan	23 (38)	67 (33.5)
Syria	17 (27)	66 (33)
Eritrea	17 (27)	41 (20.5)
Iran	3 (5)	14 (7)
Other	2 (3)	12 (6)
Education level *n* (%)		
No educational qualification	15 (27)	38 (19)
Primary school completed	11 (20)	19 (9.5)
Middle school completed	18 (32)	56 (28)
Vocational school completed	3 (5)	12 (6)
Secondary school completed	6 (11)	55 (27.5)
University degree	3 (5)	19 (9.5)
Job experience *n* (%)		
Yes	38 (62)	136 (68)
No	23 (38)	64 (32)
Years in Switzerland *M (SD)*	1.70 (1.02)	2.98 (1.31)
Residence status *n* (%)		
Permit N	46 (74)	37 (18.5)
Permit F	10 (16)	75 (37.5)
Permit B	5 (8)	76 (38.0)
Without paper	1 (2)	12 (6)
Housing and living conditions *n* (%)		
Asylum camp	19 (35)	96 (48)
living in private housing	36 (65)	93 (46.5)
Other	N.A.	11 (5.5)
Attending the German course *n* (%)		
Yes	42 (68)	151 (77)
No	20 (32)	44 (23)
German proficiency levels *n* (%)		
No language skills	10 (18)	13 (7)
Elementary level (A)	37 (67)	99 (50)
Intermediate level (B)	8 (15)	78 (39)
Advanced level (C)	0	7 (4)

persons (The State Secretariat for Migration SEM, 2017) with regard to age ($M = 26$ vs. $M_{POPULATION} = 25$), gender (27% female vs. 39% female in the population) and country of origin (with the three most frequent countries of origin according to the official statistics being Eritrea, Syria, and Afghanistan). The average duration of time living in Switzerland was 1.69 years ($SD = 1.02$, range = 3 months to 6 years). At the time of the assessment, 74% of participants were still in the asylum procedure (permit N), 16% were temporarily admitted as refugees (permit F), 8% had been recognized as refugees (permit B), and 2% did not have any residence permit (the so-called "Sans Papiers"). Most participants (68%) attended a German course at the time of the assessment. 67% reported only elementary language skills (i.e., "A" level according to the Common European Reference Framework), 15% reported intermediate ("B" level) and 18% reported having no language skills. None of the participants achieved the advanced level of German (see Table 1 for a detailed overview of further sociodemographics).

2.1.2. Study 2

Data from a total of 200 refugees (33% female, 67% male, 0% diverse) aged 18 - 53 years ($M = 28.43$, $SD = 8.09$) were collected. Similar to Study 1, the largest number of participants were between 20 and 30 years old (58%). As in Study 1, the majority of participants came from Afghanistan, Syria and Eritrea. According to the 2019 (i.e. the year of data collection) official statistics of asylum seekers and temporarily admitted persons (The State Secretariat for Migration SEM, 2017), 40% of the population were women, the average age was $M_{POPULATION} = 25.77$, and the four most frequent countries of origin were Eritrea, Afghanistan, Turkey and Syria. Thus, the sample demographics are in relatively close agreement with the population demographics. Length of stay in Switzerland varied from 4 months to 6 years, with an average length of stay of about 3 years ($M = 2.98$; $SD = 1.31$). 38% of participants had a B permit, 37.5% had an F permit, 18.5% had an N permit, and 6% were Sans Papiers. Thus, the average residence status was relatively more secure compared with participants of Study 1. 77% of respondents were attending a German course at the time of the survey. Only 7% of the respondents reported that they had no basic knowledge of German. About half of all respondents had elementary language skills (level A) and about 40% had intermediate language skills (level B). Only 3% of the respondents had achieved the advanced level of German (Level C). Full demographic information can be found in Table 1. Besides differences related to residence status between the two studies, the demographic characteristics of the sample of Study 2 were similar to those in Study 1.

2.2. Procedure

The same procedure was used in Study 1 (conducted in 2017) and Study 2 (conducted in 2019), except that the questionnaire in Study 2 was expanded and the sampling scheme consisted of different refugee accomodation centers to rule out that participants would be included in both samples. Both studies were approved by the ethics committee of the Faculty of Arts and Social Sciences of the University of Zurich (Approval numbers 16.12.2 and 19.4.10). Each participant was informed of the voluntary nature of the study, their right to withdraw at any time and the confidentiality of their responses. The participants were also informed that their responses would not have any influence on their asylum procedure. Finally, participants were informed of the psychological risks associated with reflecting on their traumatic experience and provided with a 24 h hotline of the Outpatient Clinic for Victims of Torture and War at the University Hospital Zurich in case they needed help. Participants took approximately 60 min to fill in the entire questionnaire (which included additional measures that are beyond the scope of the present research report) and received CHF 10 (approx. USD 10) for participation. Except for measures available in the targeted languages, the questionnaire was originally prepared in German and subsequently translated by professional translators into the three languages most commonly spoken in the community accommodations at the time of the survey: Arabic, Farsi and Tigrinya. Additional bilingual people working in the area of refugee integration compared the translation with the German version and suggested minor modifications.

2.3. Measures

2.3.1. Study 1

Traumatic experiences were assessed using a checklist ("trauma list") of 23 common traumatic events experienced by refugees which range from "lack of food or water" to "torture". This checklist, which combines the trauma event lists of the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992; Maercker and Bromberger, 2005) and the Posttraumatic Diagnostic Scale (PDS; Foa, 1995; Foa et al., 1997), was adopted from Schick et al. (2016). The traumatic incidents were scored as follows, 1 = 'no exposure', 2 = 'heard about', 3 = 'witnessed' and 4 = 'self-experienced'. For each participant a total score was calculated by averaging over the items.

Postmigration living difficulties were gathered with the Swiss adaptation (Schick et al., 2016) of the Post-Migration Living Difficulties Checklist (PMLDC; Steel et al., 1999). We added one item to this 17-item scale (i.e., "delay in processing the asylum application"). This item was added because it frequently came up in personal communications with refugees. The item was added within a block of items dealing

with the asylum procedure (i.e., after 'Conflicts with social workers / other authorities' and before 'Worried about not being recognized as a refugee'). Participants indicated the severity of 18 postmigration and asylum-related problems experienced in the past 12 months on a 5-point Likert scale ranging from 1 = 'no problem at all' to 5 = 'a very serious problem'. Items include for example: "Worry about family back home", "Difficulties learning German", "Loneliness, boredom or isolation". For each participant a total score was calculated by averaging over the items.

Mental health problems were assessed with the Refugee Health Screener-13 (RHS-13; Hollifield et al., 2013). The RHS-13 consists of 13 symptom items relating to the spectrum of depression, anxiety, and PTSD, which ask participants to "indicate the degree to which the symptom has been bothersome to you over the past month". The items are rated on a scale from 0 = 'not at all' to 4 = 'extremely'. A sum score of 11 or greater is taken to be a positive screen for clinically relevant mental health problems (Hollifield et al., 2013). In addition, the RHS-13 includes a ***distress thermometer*** which asks individuals to mark their distress from 0 = 'no distress' to 10 = 'extreme distress'. A score of 5 or higher is indicative of a clinically significant level of distress (Hollifield et al., 2013).

Intergroup contact with members of the receiving society was measured with two items asking participants about their friendships with Swiss people (Tropp and Pettigrew, 2005). The first item asked: "How many of your friends are Swiss" (1 = none of my friends, 2 = some of my friends, 3 = less than half of my friends, 4 = about half of my friends, 5 = more than half of my friends, 6 = most of my friends and 7 = all of my friends). As a second question, the exact number of their friends was also asked. In Study 1, both items revealed that 51% did not have any Swiss friends. Given the small sample size, we used a binary version of the variable (coded 0 for "no friends" and 1 for "at least 1 friend") for analyses. In Study 2, the percentage of participants without any Swiss friends was smaller (36%), so we formed a scale (friendship scale) by averaging these two items which were highly correlated with each other ($r = 0.77$).

For control purposes we also inquired about contact with people from participants' home country living in Switzerland using the question: "Do you have contact with people from your home country who live in Switzerland?" This question could be answered with "yes" or "no". This measure was included to assess whether potential effects of contact with the receiving society could be interpreted as effects of intergroup contact or as the effect of social contact more generally.

2.3.2. Study 2

The measures were identical to the measures used in Study 1, except for two changes. First, we included the Perceived Stress Scale (PSS; Cohen et al., 1994) as an additional measure of mental health problems. Preliminary analyses revealed that the 4 positively formulated items were negatively correlated with the remaining items after recoding. In order to create an internally consistent scale, we only averaged the responses to the 6 negatively formulated items (rated from 0 = never to 4 = very often) with higher scores indicating higher levels of perceived stress ($\alpha = 0.82$). Second, we assessed contact with people from the home country by asking "How often do you have contact with people from the home country living in Switzerland?", using a five-point Likert scale rated from 1 ("never") to 5 ("very often"). In addition, as a second control item, the frequency of contact with other refugees in Switzerland was recorded on a 5-point scale from "never" to "very often".

3. Results

To establish the context for examining our main hypothesis regarding the moderating role of intergroup contact, we first provide descriptive results on the traumatic events and postmigration living difficulties respondents reported, as well as the results of the mental health screening and the frequencies of intergroup contact.

Regarding the risk factors, most participants of our studies reported having either experienced or witnessed at least one traumatic event (Study 1: 84%; Study 2: 87%) and rated at least one of the 18 postmigration problems as serious or very serious (Study 1: 92%; Study 2: 94%). Further details on the nature of the traumatic events and postmigration problems can be found in the Supplementary Material.

Regarding mental health, 60% of participants in Study 1 and 64% in Study 2 who completed the RHS-13 reported clinically significant scores for symptoms of post-traumatic stress disorder, anxiety and depression. Ratings on the distress thermometer indicated that 58% of respondents in Study 1 and 55% in Study 2 experienced mental distress at the time of the assessment (i.e., a rating of 5 or more). In Study 2, the average Perceived Stress Scale (PSS; theoretical range from 0 to 4) score was 1.56 ($SD = 1.00$).

Correlation analysis showed that flight-related stress factors were associated with increased psychological health problems (see Table 2).

Finally, before reporting the main results on the moderating role of intergroup contact, we note that, in Study 1, about half of the respondents reported having no Swiss friends (51%), and 37% reported having "some" Swiss friends. 81% of respondents reported having contact with people from their home country living in Switzerland. In Study 2, 36% indicated that they had no Swiss friends, and 45% reported having "some" Swiss friends. These results are consistent with the longer average duration of Study 2's participants' stay in Switzerland. 30% of respondents had frequent or very frequent contact with people from their home country. 27% of respondents had frequent or very frequent contact with other refugees.

3.1. The moderating role of intergroup contact for the relationships between migration-related stressors and mental health

3.1.1. Study 1

To explore the potential buffering effects of intergroup contact, we conducted moderator analyses. Focal predictor variables (postmigration living difficulties and traumatization) were z-standardized ($M = 0$, $SD = 1$). Friendship was converted into a dummy variable coded 0 for "no Swiss friends" and 1 for "at least 1 Swiss friend". The regression model included the focal predictor variables, friendship, as well as the two interaction terms between friendship and the focal predictor variables.

3.1.1.1. Distress as outcome variable. As can be seen in Table 3, friendship with Swiss people had a negative average effect on psychological distress ($b = -1.92$, $SE = 1.02$, $p = .06$), indicating a tendency for participants with Swiss friends to report less distress than participants without Swiss friends. Consistent with the moderator hypothesis, the interaction between contact and postmigration difficulties was significant ($b = -2.47$, SE = 1.13, $p = .03$). The sign of the interaction was negative, suggesting that the relationship between postmigration living difficulties and distress is weaker among refugees who have contact with Swiss people. The effect of postmigration difficulties on distress was positive among participants without Swiss friends ($b = 1.79$, $SE = 0.70$, $p = .01$), indicating that participants with more postmigration problems express more psychological distress. In contrast, the effect of postmigration difficulties on distress was not significantly different from zero among participants with Swiss friends ($b = -0.68$, $SE = 0.88$, $p = .44$). This moderator effect is visualized in the bottom part of Fig. 2. Separate scatterplots with regression lines for participants with Swiss friends and those without Swiss friends confirm the numerical result of a buffering effect of friendship (note that we do not control for the effect of trauma in the visualization).

As friendship was correlated with taking language courses, the moderating influence may be due to this variable. However, when we controlled for the influence of language courses ($b = -1.34$, $SE = 1.01$, $p = .19$), the interaction between postmigration living difficulties and friendship remained negative and significant ($b = -2.57$, $SE = 1.11$,

Table 2
Correlations between mental health variables and flight-related stressors.

Stress Factors	Mental health problems				
	Study 1		Study 2		
	Psychological symptoms	Distress	Psychological symptoms	Distress	Perceived stress
Trauma	.51***	.30*	.26***	.21**	.16*
PMLD	.58***	.26*	.36***	.24***	.31***

Note. PMLD = postmigration living difficulties, ***$p < .001$, **$p < .01$, *$p < .05$.

Table 3
Regression analyses of friendship with Swiss people moderating the relationship between pre- and postmigration stressors and mental health problems (Study 1).

	Model 1			Model 2		
	DV: Distress			DV: Psychological symptoms		
	b	*SE*	*t*	*b*	*SE*	*t*
Intercept	6.12***	.65	9.37	1.34***	.13	10.05
Trauma	1.50*	.69	2.16	.04	.14	.29
Postmigration living difficulties (PMLD)	1.79*	.70	2.55	.34*	.13	2.63
Swiss Friends (1 = yes, 0 = no)	−1.92+	1.02	1.89	.12	.21	.57
Trauma × Swiss Friends	−0.07	1.07	−0.07	.56*	.21	2.67
PMLD × Swiss Friends	−2.47*	1.13	2.19	.08	.23	.37
	R^2			R^2		
	.34			.49		

***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$.

$p = .03$). Furthermore, we removed two items from the PMLD checklist that focus on communication difficulties, namely "difficulties learning German" and "communication problems", to investigate whether the moderating effect of friendship depends on these items. The interaction effect changed only minimally ($b = -2.24$, $SE = 1.15$, $p = .06$). We conclude that friendship does indeed moderate the effect of living difficulties in general, not just the difficulties relating to communication.

3.1.1.2. Psychological symptoms as outcome variable. We repeated the moderation analysis with psychological symptoms as outcome variable. Consistent with the moderator hypothesis, the interaction between friendship and trauma was significant ($b = 0.56$, $SE = 0.21$, $p = .01$), though unexpectedly receiving a positive sign, suggesting that the positive relationship between trauma and psychological symptoms is stronger among participants who have Swiss friends (Table 3). Whereas the effect of traumatic experiences on psychological symptoms was slightly positive, but not significant among participants without Swiss friends ($b = 0.04$, $SE = 0.14$, $p = .76$), the effect was significantly positive among participants with Swiss friends ($b = 0.59$, $SE = 0.15$, $p < .001$). The top part of Fig. 2 visualizes this interaction with separate scatterplots and regression lines for participants with and without Swiss friends.

3.1.1.3. Control analyses. In order to better understand whether the observed moderator effects of intergroup contact might be due to differences in the number of social contacts more generally, we repeated the analyses using contact with people from the home country as a moderator variable. If the number of social contacts accounts for the effects, similar effects might be expected. However, results (shown in the Supplementary Material) indicated that contact with people from the home country as a moderator did not significantly moderate the relationship between trauma and psychological symptoms, nor the relationship between postmigration living difficulties and psychological distress.

3.1.2. Study 2

To explore whether the moderator effects observed in Study 1 could be replicated with a larger sample, we tested the same moderation models as in Study 1 with the following differences. First, whereas intergroup contact was dichotomous in Study 1, we now used z-standardized scale scores as the moderator variable. Second, we ran the moderation analyses not only for distress and psychological symptoms, but also for perceived stress.

3.1.2.4. Distress as outcome variable. The first regression model was done with the dependent variable of mental distress. We first checked whether the buffering effect of friendships with Swiss people on the relationship between postmigration living difficulties and distress observed in Study 1 could be replicated. Although the pattern of coefficients was similar (i.e., positive for PMLD, negative for the interaction with friendship), the buffering effect was not significant (see Table 4). However, as shown in Table 4, there was a significant positive interaction between trauma experiences and contact ($b = 0.53$, $SE = 0.25$, $p = .03$), indicating that among refugees with more Swiss friends, there was a stronger relationship between experienced trauma and psychological distress than among refugees with fewer or no Swiss friends. Fig. 3 shows the relationship between trauma and distress for three approximately equally large groups varying in the number of Swiss friends, namely persons who have no contact ($N = 72$; values ≤ 0.5 on the friendship scale), persons with few friends ($N = 58$; values > 0.5 and < 3.5), and persons with many friends ($N = 70$; values > 3.5).

3.1.2.5. Psychological symptoms as outcome variable. The second regression model included psychological symptoms as a dependent variable and produced the following results (see Table 4): A significant average effect of friendship on psychological symptoms was found ($b = 0.12$, $SE = 0.06$, $p = .04$). The positive sign here indicates that having more Swiss friends was associated with higher symptom scores. Consistent with the results of Study 1, there was a significant positive interaction between trauma experiences and friendship ($b = 0.16$, $SE = 0.06$, $p = .01$), suggesting the association between trauma and psychological symptoms is stronger among participants with more Swiss friends (see bottom part of Fig. 4). Furthermore, there was a significant negative interaction between postmigration living difficulties and friendship ($b = -0.19$, $SE = 0.06$, $p < .01$), consistent with the assumption that friendship buffers the positive relationship between postmigration living difficulties and psychological symptoms (see top part of Fig. 4).

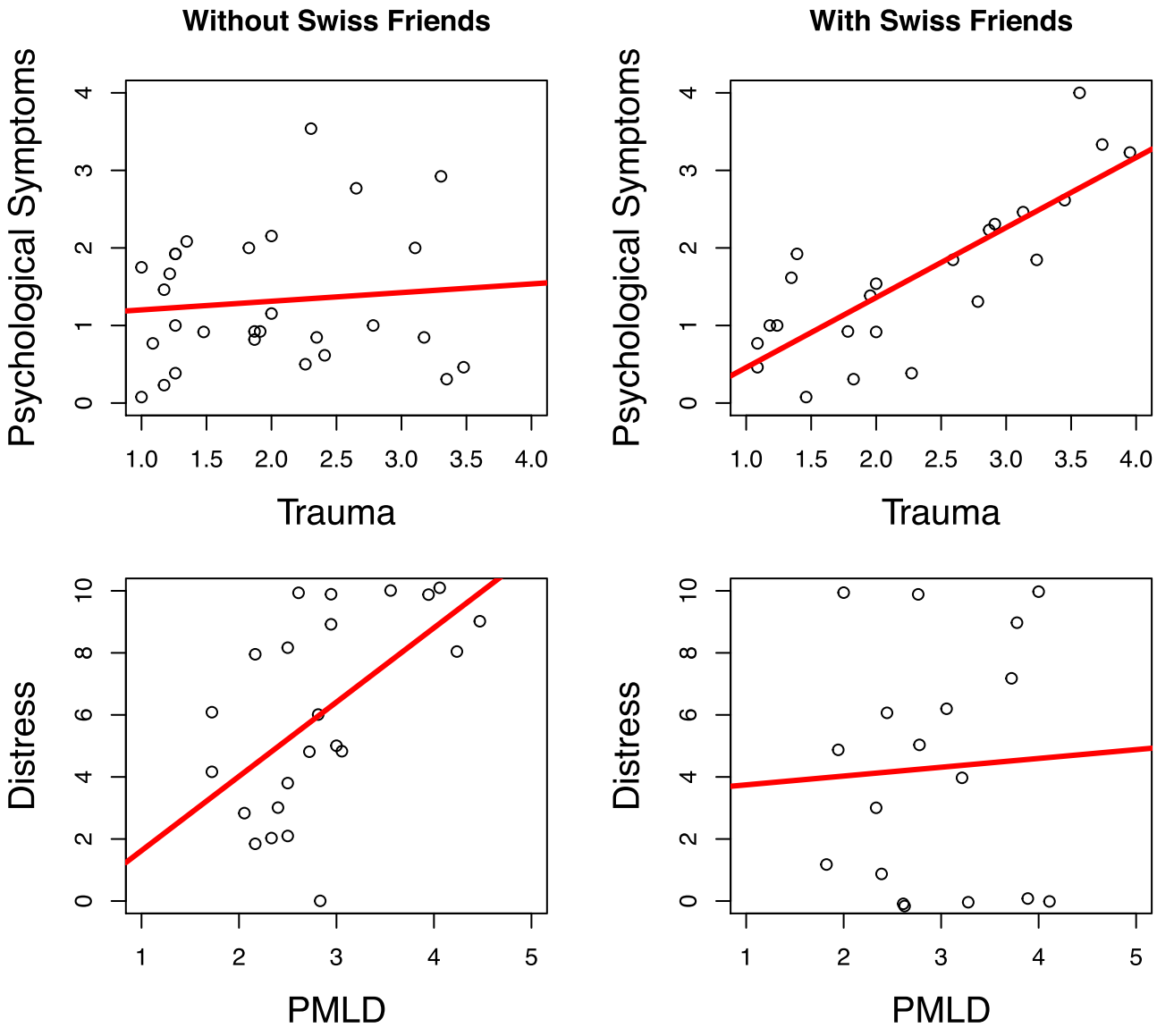

Fig. 2. Relationship between risk factors and mental health among respondents without Swiss friends (left-hand side) and with Swiss friends (right-hand side; Study 1).
Note. PMLD = Postmigration living difficulties.

Table 4
Regression analyses of friendship with Swiss people moderating the relationship between pre- and postmigration stressors and mental health problems (Study 2).

	Model 1			Model 2			Model 3		
	DV: Distress			DV: Psychological symptoms			DV: Perceived stress		
	b	*SE*	*t*	*b*	*SE*	*t*	*b*	*SE*	*t*
Intercept	4.62***	.23	19.9	1.32***	.06	22.6	1.54***	.07	22.9
Trauma	.69**	.23	2.93	.22***	.06	3.61	.13	.07	1.84
PMLD	.70**	.24	2.97	.30***	.06	5.13	.29***	.07	4.21
Friendship	.13	.24	.53	.12*	.06	1.98	.09	.07	1.25
Trauma × Friendship	.53*	.25	2.09	.16*	.06	2.56	.12	.07	1.57
PMLD × Friendship	−0.45+	.25	1.81	−0.19**	.06	3.00	−0.07	.07	1.01
	R^2			R^2			R^2		
	.11			.26			.14		

Note. PMLD = postmigration living difficulties, ***$p < .001$, **$p < .01$, *$p < .05$, +$p < .10$.

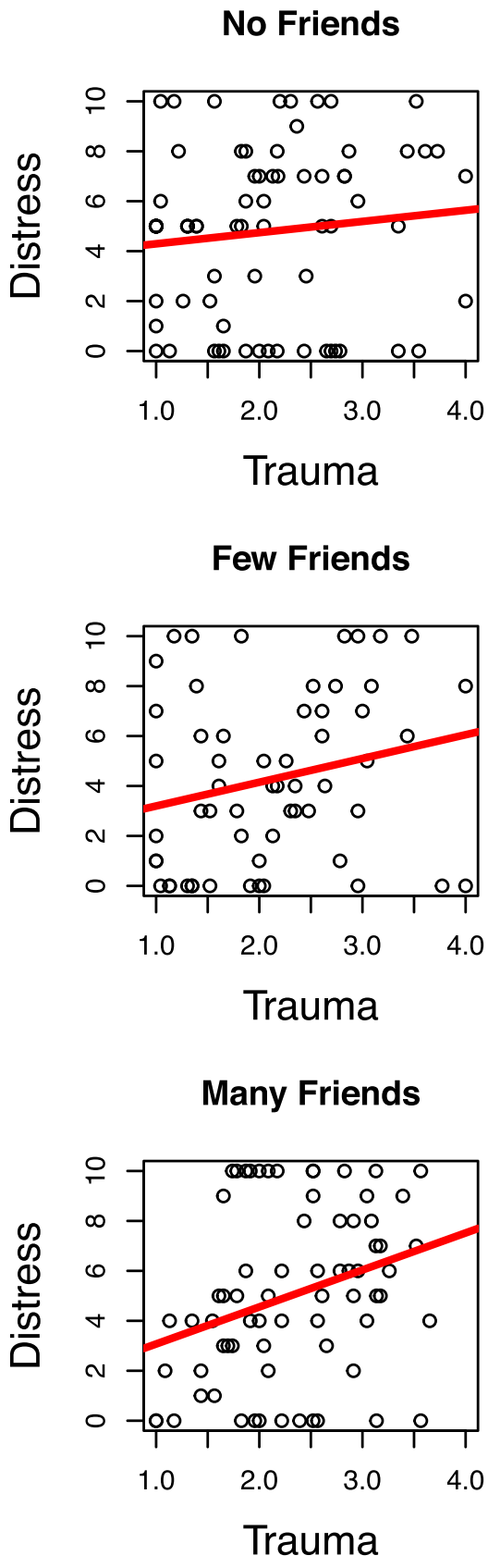

Fig. 3. Relationship between trauma experiences and distress and the moderating effect of contact with Swiss people (Study 2).

3.1.2.6. Perceived stress as outcome variable. The third regression model included perceived stress as the dependent variable. The only significant effect was the positive relationship between postmigration living difficulties and perceived stress. Friendship had no moderating effect on the positive relationship between stress factors and perceived stress (see Table 4).

3.1.2.7. Control analyses. As in Study 1, we repeated all moderator analyses using other indicators of social contacts instead of friendships with Swiss people as moderator variables to explore the possibility that social contacts, in general, might be responsible for the observed effects. However, results (shown in the Supplementary Material) indicated no significant interaction for distress and psychological symptoms (the outcomes for which we observed moderating effects of friendships with Swiss people). The only significant interaction we observed was for perceived stress (the outcome for which we did not observe moderating effects of friendships with Swiss people). Contact with persons from the country of origin significantly strengthened the positive relationship between traumatization and perceived stress ($b = 0.16$, $SE = 0.07$, $p = .03$).

Finally, we included a measure of emotional and cultural integration in all moderator models to address the concern that the moderating effects of intergroup contact reflect effects of better integration. Results (shown in the Supplementary Material) indicate that all moderator effects of intergroup contact remained significant after including integration as a covariate. Integration was only weakly correlated with having Swiss friends ($r = 0.11$, $p = .14$).

4. Discussion

The aim of the present research was to investigate the role of refugees' and asylum seekers' contact with members of the receiving society in the relationship between trauma exposure, postmigration living difficulties and mental health outcomes.

As expected, the majority of refugees in our samples from Switzerland had been exposed to a high number of traumatic events and were subject to a wide range of postmigration living difficulties. Both of these stress factors were found to be associated with increased psychological symptoms and distress, consistent with previous research (Laban et al., 2005; Momartin et al., 2006; Steel et al., 2009; Porter and Haslam, 2005; Schweitzer et al., 2006; Schweitzer et al., 2011). In absolute terms, symptoms and distress levels confirm previous findings that refugees are at an increased risk of mental health problems (Kivling-Bodén, 2001; Laban et al., 2005; Schick et al., 2016).

Given the long waiting times for psychotherapy, we considered it important to better understand whether intergroup contact might serve as a protective factor, buffering the negative effects of migration-related stress factors. Our studies suggest that contact with members of the receiving society can buffer as well as aggravate these negative effects on mental health indicators. Two differences between respondents with Swiss friends vs respondents without Swiss friends were particularly striking. First, the relationship between postmigration living difficulties and mental health problems was weaker among participants with Swiss friends. This finding is consistent with previous research indicating that contact with the receiving society is associated with increased well-being of minority members regarding everyday worries and problems (Eller et al., 2016; Tip et al., 2019). A study conducted about the same time with a similar refugee population in Germany found that time spent with Germans was related to lower psychological distress (Walther et al., 2020). Whereas these earlier studies examined direct associations between contact and well-being, our study addressed the moderating influence of contact. Friends from the receiving society may not prevent postmigration living difficulties from occurring, but they can reduce the negative impact on refugees' mental health through different kinds of social support. In this regard, our findings are consistent with previous research (Marinucci and Riva, 2021; Marinucci et al., 2022) showing

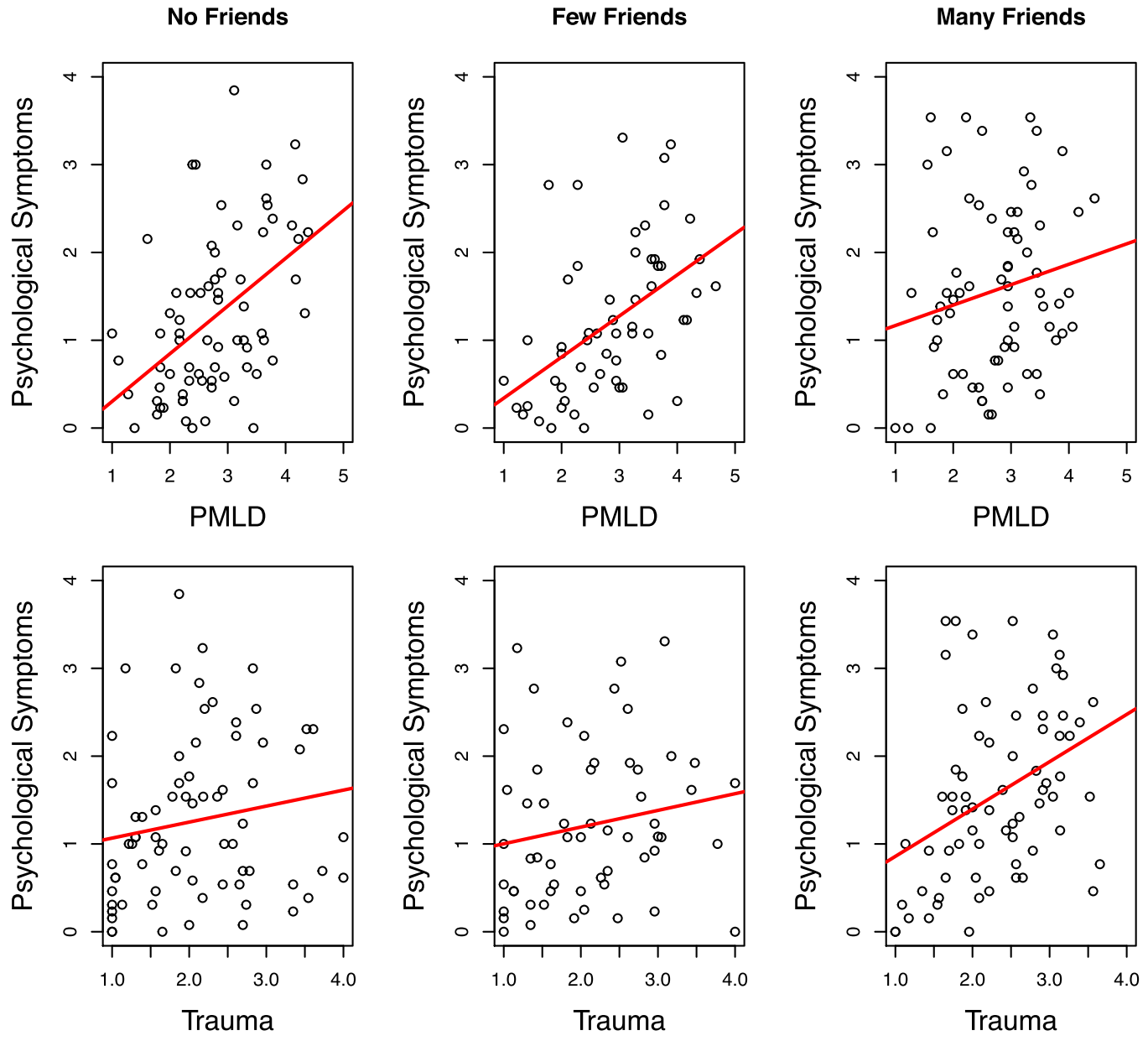

Fig. 4. Relationship between flight-related stress factors and psychological symptoms for refugees varying in the number of Swiss friends (Study 2).
Note. PMLD = postmigration living difficulties.

that intergroup contact may buffer the detrimental effects of social exclusion (i.e. a stressor similar to the postmigration living difficulties of loneliness and discrimination). Given the different refugee populations examined by these authors and in the present research (Western Africa vs. Middle East / Eastern Africa), as well as the different characteristics of the receiving societies (Italy vs. Switzerland), it is encouraging to observe this convergence of results.

A second important finding is that the relationship between traumatization and mental health problems was more strongly positive among participants with (more) Swiss friends. We may only speculate as to the possible explanations of this findings. One possible explanation for this unexpected finding obtained in both studies is that friendship with members of the receiving society may encourage talking about the past, which might remind refugees of the traumatic events and trigger painful memories, leading to higher levels of anxiety and mood disturbance. Another explanation might lie in the asymmetric relationship between refugees and Swiss people. As discussed by Jünemann et al. (2021) with regard to interactions between refugees and German volunteers in support of refugees, the asymmetric nature of the helping relationship may reinforce feelings of dependency and helplessnes, which in turn may lead to more symptoms for those at higher risk. In order to better understand the mechanisms underlying the exacerbating effect of intergroup contact on suffering from trauma, further research is necessary on the nature of intergroup contact between refugees and members of the host society. We suggest that a focus on what they talk about and what kind of help is offered (e.g., autonomy vs. dependency-oriented help, see Becker et al., 2019) would be fruitful. In summary, our results suggest that contact with members of the receiving society may have both positive and negative effects. While intergroup contact may help refugees integrate more easily and quickly into the new society, it may increase their suffering from trauma experiences.

This pattern of results appears to be unique for intergroup contact with members of the receiving society rather than reflecting an effect of social contact more generally. Only for one of the outcome variables

did we observe a moderating effect of contact with persons from the country of origin, indicating that for refugees with more frequent contact with persons from their county of origin living in Switzerland, the association between traumatization and perceived stress was stronger than for refugees with little contact with other persons from the country of origin. Thus, while the potentially harmful moderating effects of intergroup contact regarding the relationship between trauma and mental health may arise both for contact with Swiss people and contact with persons from the country of origin, the potentially beneficial moderating effects were only observed for contact with members of the receiving society.

4.1. Limitations

A few limitations are associated with this study. First, the cross-sectional nature of the study does not allow for causal conclusions. Although the direction of the effects (e.g., from traumatic experiences to psychological symptoms) is uncontroversial, we acknowledge the possibility that unmeasured variables (e.g., individual differences associated with the propensity to form friendships with members of the receiving country) account for some of our findings. Second, the generalizability of our results is threatened by the fact that many refugees we contacted did not want to participate in the study. As a vulnerable group, asylum seekers may feel intimidated or frightened by the interview situation, which may remind them of interviews with migration officers or interrogations in their home country. We tried to minimize such associations by ensuring that participants understood at the beginning of the interview that individual data would be anonymized and would not influence the outcome of their asylum request in any way. Nevertheless, many potential participants refused to participate, and among those who did participate, responses might be distorted in the direction of social desirability. It is unclear, however, how these potential biases would explain our major finding of moderating effects of contact. Furthermore, although the largest language groups of refugees in Switzerland were included in this research, a part of the refugee population in Switzerland was not able to participate: individuals who did not speak any of the languages of study. In addition, people who could not read and write in their native language were excluded. In order to include this group of people, individual interviews would have been necessary, which were avoided to maintain anonymity. Finally, we acknowledge an inconsistency in the measures of contact with different groups. Whereas contact with members of the receiving society was measured in terms of number of friends (i.e., high-quality contact), contact with other refugees or with persons from the country of origin was measured in terms of the frequency of contact (i.e., regardless of the quality of contact). Thus, it is currently unclear whether other types of friendships (i.e., bonding social capital) might produce a similar pattern of results as friendships with members of the receiving society.

4.2. Implications for future research

The present research provided encouraging results for future endeavours to explore the role of intergroup contact for well-being and mental health of refugees. Research on intergroup contact has typically focused on prejudice reduction among majority members as its major outcome variable (e.g., Pettigrew and Tropp, 2006). More recently, intergroup contact scholars have paid more attention to the effects of intergroup contact on other outcome variables that address salient problems and challenges of minorities or disadvantaged groups. This research has revealed that positive contact with the majority or advantaged groups may have demobilizing effects with regard to engaging in collective action toward greater social equality (Saguy, 2018; Hässler et al., 2020). For another example, Kahalon et al. (in press) found that minority group students benefit from high quality contact with majority group students in terms of better academic achievement. The present research expands the scope of potential consequences of intergroup contact for disadvantaged groups. More specifically, the findings suggests that intergroup contact may have consequences for the mental health of refugees, buffering the negative effect of postmigration living difficulties, but exacerbating the negative effect of traumatization.

This research also has important practical implications. The present work reveals a high number of undiagnosed mental health problems among refugees in Switzerland. Without denying the resilience of refugees (see e.g., Hutchinson and Dorsett, 2012), these results suggest a great need for psychiatric and psychotherapeutic diagnosis and therapy. Contact with members of the receiving society has been shown to buffer the negative effects of postmigration living difficulties. This suggests that it would be beneficial for mental health to enable such contacts through decentralized accommodation of refugees. The current practice in Switzerland is that most asylum seekers spend most of their time in asylum homes with limited opportunities for contact with Swiss people. Considering that a common language may facilitate establishing contacts, a match between the language region and refugees' language skills should be play a role in the assignment of refugees to cantons. Again, the current practice in Switzerland is to send asylum seekers to randomly determined cantons with little regard for linguistic compatibility (Auer, 2018).

Although contact with Swiss has a moderating effect on the association between postmigration living difficulties and mental health problems, this contact may strengthen the association between experienced trauma and mental health problems. However, the present work did not investigate the cause of this effect. There are factors that must be taken into account so that these contacts no longer have a harmful effect on health. Based on the findings presented in relation to living difficulties in the host country and mental health problems, it is a possible speculation that contact with Swiss people puts many refugees under a great deal of stress in terms of successful integration and a quick adaptation, thus hindering them from dealing with what they have experienced. Excessive focus on adaptation and integration into the host country can make stabilization after trauma more difficult. Traumatic experiences are often accompanied by a loss of control, powerlessness, and a feeling of worthlessness (Luci and Kahn, 2021). In order to optimally accompany and support traumatized refugees, the feeling of security, orientation, being valued, agency and control should always be strengthened in order to prevent a repetition of experiences of external control and powerlessness. Members of the receiving society who support refugees should include them in decisions and considerations to create feelings of control and appreciation. In addition, it is highly recommended to motivate refugees to make use of the available professional help from psychological and psychiatric services. The vast majority of refugees living in Switzerland are not familiar with the various forms of services offered in the fields of psychiatry and psychotherapy. In this regard, the development of multilingual information materials about the mental healthcare systems is helpful.

Ethics statement

The research reported in this manuscript has been conducted in accordance with the Ethical Guidelines of the Swiss Psychological Society. It was approved by the Ethics Committee of the Faculty of Arts and Social Sciences of the University of Zurich, the approval numbers are provided in the manuscript.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Materials and data are available at https://osf.io/ydfjm/.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.cresp.2023.100118.

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