Distinct Trajectories of Psychological Distress among Resettled Refugees: Community Acceptance Predicts Resilience while Low Ingroup Social Support Predicts Clinical Distress

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Abstract

Refugees can experience elevated levels of psychological distress upon resettlement, although disparate outcomes over time are expected. The current study modeled trajectories of changes in distress over a 5-year period among resettled refugees and sought to explicate post-settlement factors that influence distress over time. A large-scale sample of refugees resettled in Australia ($N = 2,399$) were tracked over a 5-year period, completing measures of psychological distress at each wave and initial risk and protective factors immediately after resettlement. A latent class growth analysis conducted on distress found four unique classes characterised by (1) resilient levels of distress, (2) consistent clinical distress, (3) recovering levels of distress, and (4) deteriorating distress. Lower perceived discrimination and greater positive context of reception predicted membership to the resilient group and differentiated the recovering and deteriorating groups. Further, lower ingroup social support predicted membership to the clinically distressed group relative to all others. We conclude by echoing calls to strengthen community support for refugees and promote ingroup ties, particularly among those who are the most vulnerable.

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Globally, there are currently 79.5 million individuals who have been forcibly displaced from their homes, 26 million of whom are recognized as refugees and require permanent resettlement in another country (UNHCR, 2020). The prevalence of mental health disorders is markedly higher among resettled refugees than other populations, such as labour migrants (Lindert et al., 2009) and native-born residents (Porter & Haslam, 2005). While estimates vary, large-scale meta-analyses have found the prevalence of depression, post-traumatic stress disorder, and anxiety disorders in refugee samples can range between 20 and 30% at any point in time (Charlson, et al., 2019; Steel et al., 2009).

While many of the risk factors for refugees leading to psychopathology occur before resettlement (e.g., trauma), the resettlement process can introduce new challenges that have large implications for the wellbeing of refugees. Further, early exposure to risk and protective factors in the post-settlement context can impact trajectories of mental health (Beiser, 2006; O'Donnell et al., 2020). While a growing number of longitudinal studies have successfully captured temporal dynamics of distress for refugees (e.g., Wickrama et al., 2002), these studies often obscure individual differences in trajectories of distress by reporting the average rate of change across participants (c.f., Fogden et al., 2020).

To our knowledge, no research using a person-centered approach has examined whether sociocultural factors in the post-settlement period predict discrete patterns of change in mental health for refugees over time. Numerous factors inherent in the resettlement journey of refugees

are known antecedents for psychopathology (Li & Anderson, 2016). Adjusting to the

sociocultural context of the receiving country presents additional difficulties (e.g.,

discrimination, maintaining ingroup ties) that can adversely affect mental health and recovery

experiences (O'Donnell et al., 2020). Individual variation in the type and frequency of these

post-settlement factors may act as a catalyst for change in mental health among refugees

throughout the resettlement process (Stuart & Nowosad, 2020), potentially accounting for

heterogeneous mental health outcomes documented in meta-analyses. However, direct tests of

this proposition are lacking.

We endeavored to address this gap in the literature by exploring the social antecedents of

heterogenous mental health outcomes with data from a large sample of refugees resettled in

Australia assessed over a 5-year period. Like many other receiving countries, attitudes towards

refugee resettlement in Australia have been mixed, with public sentiment ranging from

nationalistic and divisive to supportive and integrative (Cowling et al., 2019). It is these

variations in sociocultural factors that we argue will shape long-term trajectories of ill-health for

refugees within a longitudinal, person-centered approach to the investigation of refugees' well-

being.

Heterogeneity in Resettled Refugees' Mental Health Outcomes Over Time

There is a significant knowledge base about typical rates of change in refugees'

psychopathology and distress over time. Longitudinal studies from around the world (e.g., Steel

et al., 2002; Wickrama, Beiser, & Kaspar, 2002) document significant, average changes in

psychosocial functioning over time. Indeed, population-based studies on the trajectory of mental-

health symptoms in refugees provide strong evidence that, on *average*, rates of depression,

anxiety, and clinical distress are elevated upon resettlement and then decrease over time (e.g.,

Besier & Hou, 2001). In most cases, permanent resettlement signals greater physical safety,

reduced uncertainty about the future, and greater provision of health care services that may

account for the decrease in psychological symptoms (Stuart & Nowosad, 2020).

　　　　While undoubtedly informative, investigations of the typical rates of change fail to

account for the variation in mental health outcomes experienced by resettled refugees. Latent

modelling of the rate of change in psychological symptoms among resettled refugees has found

significant between-person variability in rates of change (Beiser & Wickrama, 2004; Wickrama

et al., 2002), confirming that trajectories of distress over time are not uniform.

　　　　Population health prevalence data confirm that the typical decrease in symptomology for

refugees over time is not universal: Many individuals continue to require long-term treatment for

mental health concerns. Specifically, a review of studies among refugees found an estimated

20% still met clinical cut-offs for psychological disorders at least five years post-settlement

(Bogic et al, 2015). As such, many refugees who experience initially high levels of psychological

distress do not recover over the time. Similarly, there is evidence that previously asymptomatic

refugees can experience increases in distress over time (Mollica et al., 2001). Therefore, while

psychological distress may be initially high and then decrease over time for refugees on average,

this pattern of change is not ubiquitous.

　　　　Recent empirical work supports these assertions. Using a subsample from the first four

waves of the same publicly available data that we employed in the current study, Fogden and

colleagues (2020) found four distinct patterns of distress, (1) individuals who do not experience

elevated levels of distress at any point in time; (2) individuals who experience clinical levels of

distress without recovery, (3) individuals who experience clinically high levels of distress that

diminish over time (recovery experiences), and (4) individuals who initially experience low

levels of distress that increases over time. We extend this work by checking the persistence of these four groups with an additional year of data and using the full sample. Further, we provide new information by examining the sociocultural factors that predict disparate outcomes. Indeed, understanding the roots of disparate trajectories of psychological distress following resettlement can aide health care practitioners in offering targeted services to refugee populations and is therefore an important extension of previous research. For example, identifying factors that may precede marked increases or decreases in psychological distress would enable practitioners and policy makers to design and implement more efficacious preventative interventions. Accordingly, following the identification of distinct patterns of change in distress over time in our study, we sought to examine the predictors of these distinct trajectories focusing on a range of established risk and protective factors for refugee welfare.

Risk and Protective Factors of Psychological Distress Post-Resettlement

For many refugees, the migration process is a necessary means of self-preservation, allowing them to escape war, violence, assault, torture, family separation, persecution, and natural disasters (Herman, 2015). Seeking asylum, however, does not always correspond with an increase of opportunities, as many refugees are forced into temporary refugee camps while they apply for permanent residence in a receiving country (Vossoughi et al., 2018). Traumatic events and prolonged periods of uncertainty in the period prior to resettlement can have a large and detrimental impact on psychological outcomes (Steel et al., 2002). Even more issues are potentially introduced in the post-settlement period where refugees must adjust to the new context (Hynie, 2018). In fact, a growing literature demonstrates that post-settlement factors are more strongly related to post-settlement mental health outcomes than pre-settlement factors (e.g., Chen et al., 2017). Therefore, we make these factors the focus of our investigation.

Feeling supported, accepted, or rejected by fellow refugees from the same ethnic or religious group (the group to which refugees originally belong, or *in*group) and the receiving community (the group to which refugees do not originally belong, or *out*group) have been found to be key predictors of refugee mental health (Hynie, 2018). For instance, positive attitudes from the resettlement society have been associated with fewer mental health problems for refugees (Knipscheer & Kleber, 2006; Schweitzer et al., 2011). In contrast, negative attitudes from the host country can manifest in perceived experiences of discrimination, leading to mental ill-health among refugees, even after controlling for other pre- and post- migration factors (Ellis et al., 2008). Longitudinal research has found that both difficulties integrating (Chen et al., 2019) and experiences of discrimination (Correa-Velez et al., 2015) can have lasting implications among refugee populations, highlighting their long-term importance. With specific reference to the ingroup, social support from one's own community is a well-established protective factor against mental health difficulties (Çelebi,et al., 2017; Schweitzer et al., 2011).

The available evidence clearly indicates that post-settlement factors predict refugees' mental health outcomes (e.g., Li & Anderson, 2016). However, the established literature often fails to account for the diverse levels of initial mental health and distinct patterns of change in mental health over time. By modelling trajectories of psychological distress, we have an opportunity to predict variable rates of change in distress. This approach facilitates a comparison of the relative importance of post-settlement determinants of mental health and identify antecedents of clinically acute distress, as well as predict patterns of recovery and deterioration. Indeed, we suggest that much of the heterogeneity in psychological distress can only be accounted for by examining environmental and social factors (Liddell et al., 2019). Thus, we

seek to take the literature towards a more nuanced understanding of what post-settlement factors may predict over time, clinically and practically.

The current study examined experiences of discrimination, ingroup social support, and the context of outgroup reception as important candidate determinants of distinct trajectories of psychological distress of refugees. In line with previous research, we hypothesized that refugees who feel welcomed into their new home and experience social support would report lower distress over time, while feelings of rejection and discrimination may predict maladaptive trajectories of distress. However, the exploratory nature of the analysis prevents the formation a-priori hypotheses articulating the exact shape of change over time and how they are related to social determinants of health.

These research questions were investigated while controlling for established background and pre-settlement correlates of refugees' distress post-settlement – including age, gender, and experiences of pre-settlement trauma. This approach helped us isolate with greater accuracy and precision the contribution of environmental and social factors in the mental health of refugees in the post-settlement context in Australia.

Method

Participants and Procedure

Data from the Building New Life in Australia (BNLA) study were used in the current study (see De Maio et al., 2014; Edwards et al. 2018 for cohort descriptions and details of methods). Migrating units (individuals, groups, and families named on visa applications) who were granted an Australian Permanent Protection Visa between May and December 2013, were recruited for the study. In total, 2,399 refugees between the ages of 15 and 75 ($M = 35.46$, $SD = $

13.91) from 1,509 migration units were recruited for the study (participant demographics are included in Table 1).

At the time of recruitment, Australia's refugee program consisted of two related intake systems. The largest group of resettled refugees had applications for asylum assessed prior to their arrival in Australia (mostly by the United Nations High Commissioner for Refugees). A second, smaller group of resettled refugees were offered a protection visa following an application for asylum having already arrived in Australia through other means. Quota sampling was employed to ensure that the BNLA sample proportionately reflected both resettlement pathways (Rioseco et al., 2017). As noted in table 1, the proportion of participants who were permanently resettled following either an offshore or onshore application closely reflected the national intake during this time. Further, researchers selected 11 rural and metropolitan locations to conduct interviews based upon three key criteria: (1) maximize the pool of eligible participants, (2) ensure all states and territories were reflected in the final sample, and (3) to ensure all visa subclasses were represented in the final sample, De Maio et al., 2014). In sum, participants represented 31.6% of all refugees who were resettled in Australia and were eligible for study inclusion (Rioseco et al., 2017).

The initial wave of data collection occurred at the end of 2013 via interviews in 19 languages (42.8% Arabic; 23.7% Persian, 8.4% Dari, 9.7% English; 15.4% Other). The second ($N = 2009$), third ($N = 1894$), fourth ($N = 1929$), and fifth ($N = 1881$) waves of data collection occurred approximately 12 months apart (M = 12.09 months, SD = 1.54). The BNLA study was developed with key stakeholders to ensure the survey instrument and study overall were cross-culturally appropriate. A depository of all research output from the BNLA study and information

about accessing the data and measures can be found online (https://aifs.gov.au/projects/building-

new-life-australia).

Table 1.
Sample characteristics at the first measurement (N = 2,399).

Gender	
Male	54.5%
Female	45.5%
Country of Birth	
Iraq	39.3%
Afghanistan	25.5%
Iran	11.9 %
Myanmar	5.6%
Bhutan	3.5%
Pakistan	2.8%
Congo	1.7%
Sri Lanka	1.5%
Egypt	1.3%
Syria	1.3%
Other	5.6%
Migration Pathway [*Total Australian Proportions[a]*]	
Onshore [*80.01%*]	84.2%
Offshore [*19.99%*]	15.8%
Remoteness Classification	
Major City	90.3%
Inner Regional Australia	8.1%
Outer Regional Australia	1.5%
Employment Status	
In paid work	6.1%
Unemployed	93.9%
Religious Beliefs	
Islam	46.3%
Christianity	41.2%
Hinduism	3.0%
Buddhism	1.7%
No Religion	1.3%
Other Religions	6.5%

[a] Proportion calculated from the 2013-2014 information in the Department of
Immigration and Border Protection Annual Report (2014) and reflects the entire 12-
month period, and not specifically during the studies' eligibility period.

Measures

Psychological Distress. The 6-item Kessler screening scale (Kessler et al., 2010) is a non-specific measure of psychological distress routinely used in clinical settings for broad spectrum screening of anxiety and depressive symptomology. Participants indicated the frequency they experienced specific emotional (e.g., *nervous*), cognitive (e.g., *that everything was an effort*), and behavioral manifestations of distress (e.g., *restless or fidgety*) in the previous month (1 = *none of the time* to 5 = *all of the time*). Scores were summed, so that the measure of distress ranged from 6 to 30 (α's .86 to .91 across measurements). Scores above 19 are typically considered clinically relevant levels of distress.

Post-Settlement Factors. *Context of Reception* was measured with a single item, asking participants if they had been made to feel welcome in Australia (1 = *Never* to 4 = *Always*). Similarly, *Discrimination* was measured with a single item where participants were asked if they had been discriminated against, stopped from doing something, been hassled, or made to feel inferior, because of their ethnicity, religion or skin color in the preceding 12 months (1 = *yes*, 0 = *no*). Finally, *Ingroup Social Support* was the mean of two items requiring participants to indicate whether they had felt supported by their (1) ethnic, and (2) religious community (1 = *No*, 2 = *Sometimes,* 3 = *Yes*). The two items assessing ingroup social support were highly correlated (*r* = .73). Each of these measures have previously been published and found to predict physical and mental health outcomes in clearly meaningful directions, thereby providing evidence of their predictive validity (Chen, Hall et al., 2017; Chen, Ling et al., 2017; Chen et al., 2019).

Covariates. Participants were provided with a list of 7 potentially traumatic experiences (e.g., *natural disasters, torture*) and asked whether they had experienced them prior to entering Australia (1 = *yes*, 0 = *no*). Scores were summed to compute a total index of *Pre-Settlement*

Trauma that ranged from 0 to 7. Further, participants age and gender were also statistically controlled.[1]

Analytical Approach

Analyses were conducted in Mplus (v.8.3; Muthén, & Muthén, 2012; coding is available from the authors upon request). An unconditional latent growth curve (LGC) analysis examined the average trajectory of psychological distress during the 5 years following settlement, estimating the intercept (starting point at T1) and pattern of change in distress with both a linear slope and quadratic curve. While this analytical technique provides an estimate of the average starting point and rate of change across the sample, randomly estimated parameters also provide an indication of variability between participants. Latent growth class analysis (LGCA) then attempts to find distinct classes of homogenous individuals that share approximately the same onset levels and rates of change over time within a heterogeneous population (Duncan & Duncan, 2009).

The best fitting model was determined using a number of established, numerical indicators, including; (1) parsimony and theoretical richness, (2) entropy (values greater than 0.7 indicate strong distinction between groups), (3) information criterions, including the Akaike information criterion, Bayesian information criteria, and sample size adjusted Bayesian information criteria (lower values indicate a better fitting model), and (4) the sample size adjusted Lo–Mendell–Rubin likelihood ratio (LMR-LRT) and the Vuong-Lo-Mendell-Rubin test

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[1] We also conducted some sensitivity tests that included additional covariates. Our primary findings held when controlling for the number of refugee settlements participants had been encamped in and whether participants were taking medication for emotional health complaints. For model parsimony, we omitted these variables from the final model to provide a more detailed focus on the sociocultural factors that predicted trajectories of psychological distress in the post-settlement context.

(VLMR). A significant LMR-LRT and VLMR test indicates the number of classes in the analysis provides a better fit than a model with 1 fewer class. Two other factors were considered during the model building phase of the analysis. First, we attempted to ensure the smallest class contained at least 5% of the sample as small classes can potentially impact the precision of the model (Wickrama et al., 2016). Second, model parsimony was considered to ensure each class contributes to the model and is clearly interpretable (Jung & Wickrama, 2008).

Cases in the current dataset were not independent as participants were recruited in migration units. Accordingly, family unit was included in the analysis with a sandwich estimator (maximum likelihood with robust standard errors, MLR) that adjusts the standard errors to produce estimates unbiased by the non-independence of cases (Williams, 2000). MLR estimation has the added benefit of being robust to non-normality by applying a correction to the standard errors of the model (Muthén, & Muthén, 2012).

Participant attrition and non-response were observed in the BNLA study. When considering psychological distress across all 5 waves, the missing data was missing completely at random (MCAR) as evidenced by Little's (1988) MCAR test, $\chi^2(67) = 81.20$, $p = .100$. Missing data were dealt with using Full Information Maximum Likelihood estimation in accordance with established recommendations under conditions of MCAR (Enders & Bandalos, 2001).

After estimating distinct classes of participants based upon a similar starting level and rate of change in psychological distress, we then used a multivariate logistic regression analysis in Mplus to identify whether post-settlement context, as well as pre-settlement factors and background variables, predicted class membership.

Results

Identifying Distinct Trajectories of Psychological Distress

Following the computation of descriptive statistics (Table 2), we conducted an unconditional latent growth curve examining the intercept, linear slope, and quadratic curve of psychological distress over the 5 years with acceptable model fit, $\chi^2(6) = 81.22$, $p < .001$, CFI = .96, TLI = .92, RMSEA = .07, SRMR = .04. The intercept was significantly different from 0 (intercept = 13.03, $p < .001$), and average linear decreases in psychological distress over time were observed (slope = -.38, $p = .003$). The quadratic component of the model was not significant (quad = .05, $p = .130$). However, there was significant heterogeneity in starting levels and rates of change between participants as evidenced by the significant variance of the intercept (variance = 16.74, $p < .001$), and linear slope (variance = 3.72, $p = .022$), but not the quadratic curve (variance = .14, $p = .098$).

We settled upon a 4-class solution in the subsequent latent growth class analysis (Figure 1; Table 4). The VLMR and LMR-LRT approached significance with the addition of the 4th class relative to a 3-class solution, and both BIC and AIC continued to decrease in size indicating that 4 classes provided a more accurate enumeration of classes relative to a 3-class solution (Table 3). The three information criteria statistics (AIC, BIC, and SSBIC) did provide evidence that a 5-class solution may have been optimal. However, the 5th class exhibited increases in psychological distress similar to another class and only contained 3.5% of participants. Accordingly, we retained a 4-class solution for model parsimony and statistical robustness.

Table 2.
The Bivariate Correlations and Descriptive Statistics for Psychological Distress and the demographic, pharmaceutical, pre-settlement factors, and post-settlement factors included in the current study.

	Mean (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Psychological Distress (T1)	13.01 (5.90)	-									
2. Psychological Distress (T2)	12.56 (5.76)	.44**	-								
3. Psychological Distress (T3)	13.18 (5.94)	.40**	.49**	-							
4. Psychological Distress (T4)	11.67 (5.94)	.33**	.46**	.50**	-						
5. Psychological Distress (T5)	12.59 (6.05)	.31**	.40**	.43**	.48**	-					
6. Age	26.68 (17.64)	.16**	.20**	.16**	.22**	.18**	-				
7. Gender[+]	-	-.15**	-.12**	-.13**	-.13**	-.11**	-.02	-			
8. Trauma	2.05 (1.39)	.07**	.17**	.07*	.13**	.10**	.18**	.04	-		
9. Context of Reception	3.35 (0.81)	-.19**	-.13**	-.02	-.01	-.04	.06*	.01	.05*	-	
10. Ingroup Social Support	1.82 (0.82)	.04	-.05*	-.05*	-.06*	-.06*	-.06*	-.05*	-.07*	.08**	-
11. Discrimination[‡]	-	.09**	.04	.03	.03	.04	-.07**	-.01	-.01	-.14**	-.04

* $p < .05$; ** $p < .001$
[+] 1 = Female, 0 = Male
[‡] 1 = Yes, 0 = No

Figure 1. The Four-Class Solution Representing Disparate Trajectories of Psychological Distress at Annual Interventions During the First Five
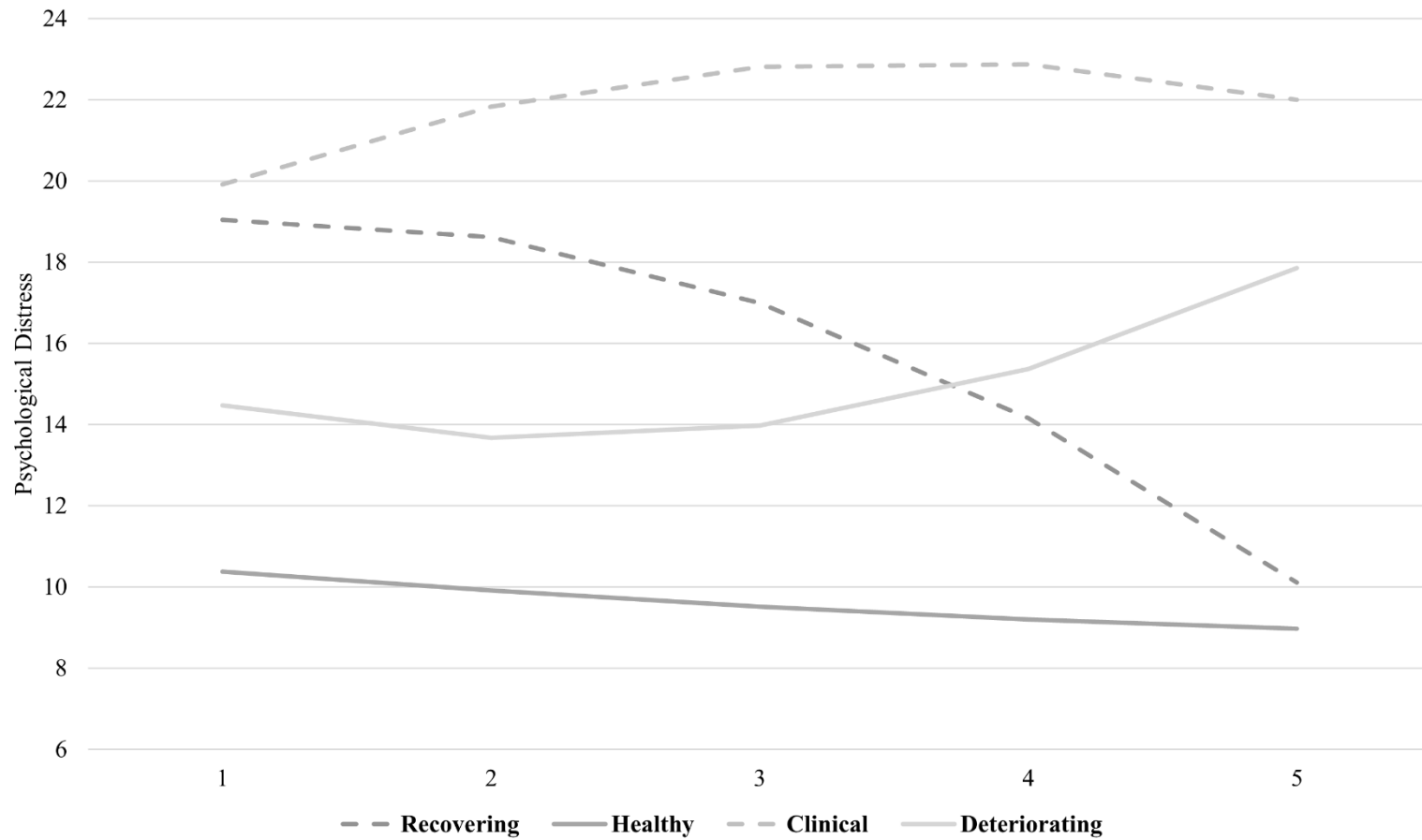
Years Following Resettlement.

Table 3.
Enumeration Indicators of the Most Accurate Number of Classes for the Latent Growth Class Analysis.

	AIC	BIC	SSBIC	VLMR	LMR-LRT	Entropy
1 Class	63560.55	63606.78	63581.36			
2 Classes	61421.63	61490.98	61452.85	2146.92**	2080.07**	0.78
3 Classes	60983.40	61075.86	61025.03	446.23**	432.34**	0.75
4 Classes	60803.66	60919.24	60855.24	187.74	181.89	0.74
5 Classes[†]	60724.76	60863.46	60787.20	86.90	84.20	0.74

$* p < .05$; $** p < .001$; [†]One class accounted for less than 5% of the sample

Table 4.
The Rate and Pattern of Change in Distress Across the Final Four-Group Solution and the Prevalence of Demographics, Pharmaceutical Treatments, and Pre- and Post-Settlement Risk and Protective Factors for each Group.

	Resilient (N = 1441)	Deteriorating (N = 550)	Recovering (N = 220)	Clinical (N = 179)
Latent Growth Curve Results				
Intercept	10.38**	14.47**	19.04**	19.91**
Linear Slope	-0.51*	-1.35	0.18	2.37*
Quadratic Curve	0.04	0.55*	-0.60[†]	-0.46*
Demographics				
Age	33.22 (13.28)	38.91 (14.65)	38.28 (13.63)	42.75 (11.49)
Gender	39.0% Female	52.7% Female	60.5% Female	57.0% Female
Pre-Settlement Factors				
Trauma	1.92 (1.36)	2.17 (1.34)	2.28 (1.48)	2.45 (1.40)
Post-Settlement Factors				
Context of Reception	3.44 (0.75)	2.18 (0.82)	3.11 (0.91)	3.29 (0.90)
Ingroup Social Support	1.84 (0.83)	1.79 (0.81)	1.86 (0.80)	1.64 (0.78)
Discrimination	3.7%	5.5%	8.3%	6.7%

$* p < .05$; $** p < .001$
NOTE: Percentages represent the proportion of participants within each group who responded yes to the question and the numbers represent the mean and standard deviation of scaled variables).

The first group was labelled *'Resilient'* and comprised the majority of the participants (60.3%) who reported low levels of psychological distress that remained substantially unchanged over time. The subsequent three groups all had elevated levels of distress during some or all of the study's duration. The second group labelled '*Clinically Distressed'* (7.5%) was the smallest numerically and reported psychological distress above the clinical cut-off (a score of 19) across all 5 years. The third group, labelled '*Deteriorating'* (23.0%), began with moderate levels of distress that markedly increased over time. Finally, a group labelled '*Recovering'* (9.3%) was identified whom initially reported clinical levels of distress that reduced over time.

Predicting Distinct Trajectories of Psychological Distress

The full results for the multivariate logistic regression analysis can be found in Table 5, while only focal results related to the post-settlement context are discussed in text for parsimony. The table includes the results for the demographic factors and pre-settlement trauma included in the analysis. The odds ratios in Table 5 provide an indication of the likelihood of belonging to the comparison group, relative to the reference group, for every one-unit change in the predictor variable.

Membership to the resilient group was predicted by the context of reception, whereby resettled refugees who felt more welcomed were significantly more likely to belong to the group with consistently low levels of distress compared to the other three distressed groups. Further, feeling welcomed by the receiving society predicted a lower likelihood of belonging to the deteriorating mental health group as compared to the group who experienced recovery in symptoms of distress. Experiences of discrimination within the host community significantly increased the likelihood of belonging to the deteriorating group as compared to the resilient group.

Table 5.

The Odds Ratio [95% Confidence Intervals] depicting the change in likelihood of belonging to the comparison group, relative to the reference group, with a one-unit change in the predictor variable. All possible comparisons are depicted.

Reference Group:	Resilient			Clinical		Deteriorating
Comparison Group:	Deteriorating	Recovering	Clinical	Deteriorating	Recovering	Recovering
Demographics						
Age	1.03** [1.02 to 1.04]	1.03** [1.02 to 1.04]	1.05** [1.04 to 1.06]	0.98* [0.97 to 0.99]	0.98* [0.97 to 0.99]	1.00 [0.99 to 1.01]
Gender	0.55** [0.49 to 0.70]	.37** [0.28 to .51]	0.40** [0.29 to 0.54]	1.39 [0.99 to 1.95]	0.95 [0.64 to 1.41]	0.68* [0.49 to 0.94]
Pre-Settlement Factors						
Trauma	1.12* [1.03 to 1.21]	1.21* [1.08 to 1.36]	1.26* [1.12 to 1.41]	0.90* [0.80 to 1.04]	0.97 [0.84 to 1.11]	1.08 [0.96 to 1.22]
Post-Settlement Factors						
Context of Reception	0.78** [0.68 to 0.89]	0.60** [0.50 to 0.72]	0.75* [0.60 to 0.94]	1.04 [0.82 to 1.30]	0.80+ [0.62 to 1.04]	0.77* [0.63 to 0.94]
Discrimination	1.99* [1.24 to 3.21]	2.75+ [1.45 to 5.21]	2.30 [1.10 to 4.78]	0.87 [0.42 to 1.80]	1.20 [0.53 to 2.68]	1.38 [0.72 to 2.64]
Ingroup Social Support	0.97 [0.85 to 1.12]	1.09 [0.90 to 1.32]	0.77* [0.61 to 0.97]	1.26+ [0.99 to 1.60]	1.41* [1.07 to 1.86]	1.12 [0.92 to 1.38]

+$p < .10$; *$p < .05$; **$p < .001$

Ingroup social support was found to be more selectively protective: Resettled refugees who felt supported by their ethnic and religious groups were significantly less likely to belong to the clinically distressed group, relative to the resilient and recovering group, and marginally relative to the deteriorating group. Indeed, ingroup social support emerged as the only significant predictor that differentiated the clinically distressed group from the recovering group.

Discussion

More refugees than ever before are displaced from their homes and are looking for the protection afforded by permanent resettlement. While resettlement can often signal the end of some dangers, other stressors can emerge during the migration process, especially when the resettlement journey is isolating and met with hostility by the host community. The culmination of these stressors can adversely impact the psychological well-being of refugees immediately following resettlement, and well into the future. Yet, the conditions under which resettlement takes place are varied and may lead to disparate mental health outcomes. In the current study, we highlighted these disparate outcomes for refugees, and identified important post-resettlement predictors of distinct longitudinal trajectories of psychological distress among a large-scale sample of refugees following resettlement in Australia.

As demonstrated in previous research (Fogden et al., 2020), we found evidence of considerable heterogeneity of outcomes among our respondents and distinguishable trajectories of distress post-resettlement. Most of the sample (60.3%) reported consistently low levels of psychological distress across the five years. However, three smaller groups were characterized by clinical levels of distress that persisted over time, or either a recovery or deterioration in their levels of distress over time. This general pattern of trajectories is not entirely unexpected. Past research on stress and coping that has used this analytical approach has found the majority of

people show great resilience following difficult circumstances. For example, 60% of individuals with a traumatic injury (deRoon-Cassini et al., 2010) and 72.5% of individuals with chronic pain (Zhu et al., 2014) had low, stable levels of depression symptoms over time. Another study found 84% of US military service persons reported low, stable levels of PTSD symptomology following deployment (Horton et al., 2010). Across these studies, the nature and proportion of individuals who exhibited more maladaptive trajectories of mental health concerns varied more broadly, making a direct comparison to the current study's classes of psychological distress difficult. However, a notable finding from our analysis is that approximately one third of the sample exhibited variations in their rates of distress following resettlement. Most of these participants had increasing levels of psychological distress (23.0%) but others demonstrated recovery (9.3%). Collectively, these results suggest that refugees' experiences in the post-settlement context can serve to improve or deteriorate mental health outcomes. Our subsequent analyses facilitated an examination of which post-settlement factors predicted these disparate trajectories of distress. We discuss these findings below, with a special focus on their implications for both individual therapy and community interventions.

Perceptions of a supportive receiving society differentiated resilient refugees from all groups of distressed refugees and significantly predicted membership in the recovering as compared to deteriorating trajectory of change over time. Hence, this factor exhibited a broad *protective* function and seemed to be key in determining whether refugees had a positive or a negative outlook. Experiences of discrimination within the host community were a negative counterpart to these dynamics. Discrimination displayed a broadly *damaging* impact on trajectories of distress: Lower levels of perceived discrimination significantly predicted membership in the resilient group as compared to those in the deteriorating group and was

somewhat related to the recovering group. This pattern suggests that discrimination is a risk factor particularly for individuals characterized by a temporally instable trajectories of distress. Collectively, these results highlight how positive attitudes from the resettlement society may both inhibit future increases in psychological distress and promote recovery for those with initially clinical levels of distress. These results related to outgroup reception in the form of acceptance and discrimination add to the well-established research on stigmatization and wellbeing (Paradies et al., 2015; Pascoe & Smart Richman, 2009; Schmitt et al., 2014).

Our findings reinforce well-established calls for policies and services to cultivate positive community attitudes and encourage the social participation and community engagement of refugees (Hynie, 2018). The recent global escalation of ethnocentrism and racial divisions in many countries may dampen expectations that discrimination and stigmatization by majority members can ever be extinguished. Yet, even subtle forms of prejudice and discrimination are not impervious to well-coordinated social and educational efforts (Kawakami et al., 2017). For example, educational training aimed at increasing awareness of daily expressions of prejudice have produced significant and lasting reductions in bias (Devine et al., 2012). In less structured settings, research on intergroup contact theory now demonstrate that encouraging more face-to-face interactions across the 'us/them' divide will typically improve mutual attitudes (Pettigrew & Tropp, 2006). Importantly, more intergroup contact also buffers against the damaging impact that typically infrequent negative contact experiences can have on community harmony and integration (Graf et al., 2014; Paolini et al., 2014).

This study also found that ingroup support differentiated between the clinical group from all the other groups. Indeed, it was ingroup social support that exclusively acted as an important protective factor against the most severe and persistent forms of distress in resettled refugees.

The protective role of *ingroup* social support aligns well with fast growing social psychological research on the implication of social identity and intra-group processes (or 'social cure') in people's health (Haslam et al., 2018; Wakefield et al., 2019). Individuals are more inclined to engage in pro-social behavior and provide support to those who share the same group membership (Levine et al., 2005; Stürmer & Siem, 2017). At the same time, a sense of shared group membership is central to benign attributions of the motives of others' help, which are critical to social support's beneficial consequences (Haslam et al., 2012). Our investigation corroborates the existence of 'social cure' effects in dynamics of refugee resettlement (Çelebi,et al., 2017; see also descriptions of Bobowik and colleagues in Jetten et al., 2017).

Like most population-based studies, the BNLA data do not allow us to identify the exact psychological underpinnings responsible for the ingroup support's ability to inoculate against clinical levels of distress that we detected. Among the many explanations for social cure effects (see Greenaway et al., 2016; Jetten et al., 2017, for overviews), it is likely that (1) supportive ingroup ties offer a host of informational, emotional and tangible resources which can buffer against acute and chronic stressors, and (2) supportive individuals within the ingroup can also more directly encourage or model healthy behavior and lifestyles (Holt-Lunstad et al., 2010). Research in refugee populations have also demonstrated the importance of these processes. For example, Çelebi and colleagues (2017) found ingroup ties during resettlement contributed to satisfy Syrian refugees' need for belonging, identity continuity and esteem, while addressing their need for efficacy and meaning. Refugees' ingroup identification was then associated with lower anxiety and depression, especially among those who drew a sense of belonging from their ethnic and religious ingroup. Future prospective research should test for most promising

mechanisms for social cure effects among refugees (Greenaway et al., 2016; Jetten et al., 2017), that was beyond the scope of the current study.

Our data clearly aligns with previous research that demonstrates the importance of ingroup ties. Yet, specific policies and practices of governments can sometimes undermine resettled refugees' capacity to foster social support from their cultural and religious group. Separation from family, friends, and kin can occur during resettlement and is a serious cause of distress among resettled refugees (Löbel, 2020). Despite their cultural and psychological importance for many resettled refugees, government agencies often do not consider the presence of extended family members (e.g., cousins) or extrafamilial social relations when imposing geographical restraints on resettlement visas (Simich, 2003). Based on our results, it is evident that policy makers should be acutely aware of how their practices can impinge on the capacity for refugees to forge social connections following resettlement and should actively facilitate family and kin reunification. Further, health-focused practitioners working with distressed refugees should offer services seeking to (re)connect the most vulnerable with their ethnic and religious community to foster feelings of connection, belonging, and collective efficacy. Such interventions are not entirely unprecedented (see Lacroix & Sabbah, 2011; Stewart et al., 2012) and have been found to promote resilience and enhance mental health. Our results suggest that these practices should be encouraged in general, but especially to cater for refugees with clinically high levels of distress.

Limitations and Future Research

The strength of the current study is the surveying of a large sample of resettled refugees, using a multi-lingual interview protocol that was developed through wide-spread consultations with stakeholders to ensure the questions were valid across groups of differing cultural and

linguistic backgrounds. The high quality of the data, coupled with the longitudinal design, afforded a nuanced account of how challenges after resettlement can adversely impact psychological distress. However, the study is not without limitations.

Specifically, many of the indicators used in the current study were brief, single-item measures. Despite their wide-spread use in epidemiological and population-based studies, single-item measures have been criticized (Krieger et al., 2005). While not always true, it is generally claimed that multi-item measures can increase the validity and reliability of assessments (Niemi et al., 1986). Accordingly, the current study would have benefited from longer measures. Future research should use more comprehensive indicators of the post-settlement context to both replicate our results and examine some of the mechanisms that we propose underpin our findings. This may be especially true for the findings related to ingroup social support. As noted above, there are many different processes by which social support can positively impact mental health outcomes that were not addressed in the current study. Further, there may be other factors that could confound our findings that were not able to be included in this research. For example, individual differences, like agreeableness and neuroticism may alter how people perceive and evaluate positive social interactions and the availability of social supports (e.g., Allemand et al., 2015). Future research that includes individual difference variables alongside more comprehensive indicators of social support could help address this limitation.

Further, our study only provided a static snapshot of post-settlement factors soon after resettlement to predict longitudinal changes in distress. As such, we cannot determine whether subsequent longitudinal changes in the post-settlement factors, such as discrimination or context of reception, contributed to explain the discrepant development of distress across the classes. Without considering how these factors dynamically change over time, we may not fully elucidate

time-specific mechanisms that potentially account for changes in distress. We recommend that future studies build off our current work, by examining how these post-settlement factors unfold over time to determine if it is their development over time, rather than just their starting point, that instigate certain patterns of changes in psychological distress.

Conclusion

This longitudinal investigation of psychological distress in resettled refugees looked beyond average levels of distress to explore how, and for whom, changes in levels of distress can be expected to provide a nuanced consideration of post- (and pre-) migration factors and their relation to psychological distress over time. We found that accepting responses by the ingroup and support by the host community were both important and consequential for refugees' wellbeing albeit in different ways: Ingroup support was able to inoculate against the most severe and intransigent forms of distress, whereas outgroup support seemed to 'make it or break it' for temporally more instable forms of distress. Thus, it was only when both challenges in the migration process were minimized that refugees were given the best chance to flourish following resettlement.

The high number of resettled refugees with low levels of distress that we found is promising, but this should not lead to complacency. As the number of refugees around the world continues to increase, identifying and ameliorating psychological distress among refugee populations remains a public health emergency. As identified in the current study, building more cohesive communities and supportive social networks could help resettled refugees achieve psychological health, free from distress.

Author Biographies

Alexander O'Donnell is a social and developmental psychologist currently employed at the University of Tasmania, Australia. His research interests include identifying how positive social relationships can lessen divisions within communities by reducing discrimination and prejudice towards disadvantaged groups. In doing so, he aims to identify mechanisms that can help overcome structural and social disadvantages to build safe communities and increase people's wellbeing. In attempting to address these complex social issues, Alex routinely employs longitudinal data modelling on large-scale data collections and also has experiences with mixed-methods research.

Stefania Paolini has expertise in intergroup relations and is best known for her research on intergroup friendship, intergroup anxiety, stereotype change, and contact valence asymmetry. For instance, she has studied the impact of having intergroup friends across the sectarian divider in Northern Ireland on intergroup anxiety and attitudes. She has applied conditioning methods to investigate the learning mechanisms of intergroup anxiety and categorization. Her most recent work has compared the psychological consequences of positive and negative intergroup contact and unveiled the existence of a negativity bias. Her current main focus is on the social psychological bases of people's interest (vs. disinterest) in engaging with diversity. Her research aims to contribute to the understanding of intergroup friction towards increased social cohesion.

Jaimee Stuart is a Senior Lecturer in the School of Applied Psychology at Griffith University and a Senior Research Fellow in the Menzies Health Institute Queensland. Her research focuses on positive development for young people with a focus on the interrelationships between cultural and cyber psychologies. Dr Stuart is particularly interested in understanding patterns of risk and resilience on and offline for those who are minorities (ethnic, religious, gender and sexual orientation) as well as youth who experience inflated risk factors (e.g., exposure to violence, low socio-economic status, displacement). Her research on youth and technology examines cyberaggression and victimisation, parental internet supervision, online disinhibition, social media use, and self-presentation.

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