

Emotion regulation profiles in Syrian refugees and migrants in Germany: self-efficacy, resilience and well-being comparisons

Dana Churbaji ¹, Pascal Schlechter,¹ Angela Nickerson,² Nexhmedin Morina¹

► Additional supplemental material is published online only. To view, please visit the journal online (<https://doi.org/10.1136/bmjment-2024-301099>).

¹University of Münster, Münster, Germany

²UNSW, Sydney, New South Wales, Australia

Correspondence to

Dana Churbaji, University of Münster, Münster, Nordrhein-Westfalen, Germany; churbaji@uni-muenster.de

Received 29 March 2024

Accepted 30 August 2024

ABSTRACT

Background Emotion regulation (ER) plays a central role in psychopathology. Understanding person-centred patterns of ER strategies is crucial for prevention and intervention strategies. However, there is a paucity of research on ER profiles and their psychological correlates in forcibly displaced people (FDP).

Objective This study aimed to identify habitual ER profiles and to examine the predictive role of different psychological variables on these profiles in Syrian FDP in Germany.

Method In a sample of 991 individuals, we conducted a latent profile analysis (LPA) to assess habitual reappraisal and suppression of emotion as ER strategies, as well as self-efficacy, resilience, well-being comparisons, trauma exposure and International Classification of Diseases 11th Revision post-traumatic stress disorder (PTSD) symptoms as potential predictors of ER profile membership.

Results LPA identified four distinct ER profiles: high regulators (12.8%), low regulators (20.6%), reappraisal regulators (25.1%) and suppressive regulators (41.5%). In multinomial regression analysis, self-efficacy, resilience, appetitive well-being comparisons and trauma exposure were significantly associated with profile membership, while PTSD and aversive well-being comparisons showed no significant association. High regulators exhibited the highest levels of self-efficacy, resilience and appetitive well-being comparisons, followed by reappraisal, suppressive and low regulators. Additionally, high regulators reported the highest number of traumatic events, followed by suppressive and low regulators.

Conclusions Our results indicate a higher adaptiveness in high regulation ER profiles as opposed to low regulation ER profiles.

Clinical implications Given that most FDP in our sample relied predominantly on one ER strategy, developing interventions that focus on cultivating a broad repertoire of ER strategies may be beneficial.

BACKGROUND

Increasing forced migration, driven by armed conflict and extreme climates, requires a deeper understanding of mental health challenges faced by affected populations.¹ Post-traumatic stress disorder (PTSD) and depression have been identified as the most prevalent mental disorders in forcibly displaced people (FDP) resettled in Western

WHAT IS ALREADY KNOWN ON THIS TOPIC

- ⇒ Emotion regulation (ER) is an important transdiagnostic factor in the context of mental health in forced migration.
- ⇒ Previous latent profile analysis revealed distinct profiles of ER contributing to our understanding of ER in forcibly displaced people (FDP); however, sample sizes were relatively small and ER profiles have not been linked to important psychological variables including self-efficacy, resilience, well-being comparisons, International Classification of Diseases 11th Revision post-traumatic stress disorder symptoms and trauma exposure.

WHAT THIS STUDY ADDS

- ⇒ In 991 Syrian FDP residing in Germany, we found 4 distinct ER profiles labelled as high regulators, low regulators, reappraisal regulators and suppressive regulators.
- ⇒ Linking the ER profiles to different levels of self-efficacy, resilience and appetitive well-being comparisons provides nuanced insights into ER among Syrian FDP.

HOW MIGHT THIS STUDY AFFECT RESEARCH, PRACTICES OR POLICY

- ⇒ By elucidating distinct ER profiles in a vulnerable population, this study provides important knowledge for future intervention research, ultimately helping to address mental health needs of FDP.

countries.¹ Yet the heterogeneity of mental health outcomes among FDP remains poorly understood.² Furthermore, mental health interventions for refugees still fail to adequately support a significant proportion of individuals.³ This highlights the need to better understand the mechanisms of psychopathology in FDP. Previous studies have mainly focused on identifying predictors of adverse mental health outcomes. Numerous studies have found a dose-response relationship between exposure to potentially traumatic events (PTE), postmigration stressors and psychopathology in forced migration contexts.⁴ The present study aimed to identify distinct profiles of emotion regulation (ER) and their psychological correlates in FDP including



© Author(s) (or their employer(s)) 2024. Re-use permitted under CC BY-NC. Published by BMJ.

To cite: Churbaji D, Schlechter P, Nickerson A, et al. *BMJ Ment Health* 2024;**27**:1–7.

PTSD, exposure to PTE, self-efficacy, resilience and well-being comparisons.

ER has emerged as a key transdiagnostic factor across various mental disorders.⁵ Although there is no universally accepted definition of ER, the definition by Gross⁶ suggests that individuals differ in their habitual use of strategies to modify emotions, either before they are generated (cognitive reappraisal) or after they have occurred (expressive suppression), referred to as antecedent-focused and response-focused ER strategies, respectively. In contrast to emotion suppression, cognitive reappraisal is categorised as an adaptive ER strategy. Individuals with PTSD exhibit a reduced ER ability.⁵ In fact, emotion suppression reflects a core avoidance symptom in PTSD. A recent study with veterans with and without PTSD suggested that expressive suppression but not cognitive reappraisal is related to PTSD.⁷ In the context of forced migration, both premigration and post-migration difficulties are associated with ER difficulties.⁸ Nickerson *et al*⁹ reported that reappraisal (vs suppression) reduced negative affect after exposure to trauma-related visual stimuli in a sample of traumatised treatment-seeking refugees in Australia.

However, linking specific ER strategies directly to psychological outcomes oversimplifies complex, habitual ER patterns, as individuals often rely on multiple ER strategies.¹⁰ Recent studies have implemented latent profile analysis (LPA) as a person-centred approach to investigate different ER patterns in psychopathology.^{10–12} LPA groups individuals into homogeneous subgroups based on their common patterns across multiple ER strategies. Dixon-Gordon *et al*¹¹ identified four ER classes in achievement-related stressors among US students: high regulators (high reappraisal and suppression), low regulators (low reappraisal and suppression), ‘maladaptive’ regulators (high suppression, low reappraisal) and ‘adaptive’ regulators (high reappraisal, low suppression). They observed that high and ‘maladaptive’ regulators exhibited lower mental health compared with low and ‘adaptive’ regulators. In contrast, the results by Loughheed and Hollenstein¹² suggested higher psychopathology rates in ‘maladaptive’ and low regulators, as opposed to high and ‘adaptive’ regulators among Canadian adolescents. However, in a smaller sample of 93 FDP Specker and Nickerson¹³ identified three habitual ER classes—‘high’, ‘adaptive’ and ‘maladaptive’. Their findings showed that ‘maladaptive’ regulators exhibited more PTSD symptoms, while high regulators experienced a broader range of PTE. Notably, they did not find a low regulators class, arguably due to higher emotion suppression linked to prevalent PTEs. Relatedly, an experimental study by Specker and Nickerson¹⁴ with 82 refugees revealed that low variability in ER was linked to higher psychopathology, unlike high ER variability profiles. In summary, despite inconsistencies regarding the adaptiveness of high regulation profiles, current findings suggest that a high regulator profile in FDP is beneficial, emphasising the importance of diverse ER strategies¹⁰ in reducing psychopathology in FDP.

Nevertheless, categorising profiles as ‘adaptive’ versus ‘maladaptive’ may not be useful in cross-cultural settings, as evidence both supports^{15 16} and opposes⁹ a different function of suppression in individuals with non-Western socialisation. Hence, the terms reappraisal profile (high reappraisal, low suppression) and suppressive profile (low reappraisal, high suppression) may be more useful. In this context, it is crucial to examine how different ER profiles manifest and correlate with various psychological factors such as resilience, self-efficacy and well-being comparisons, as well as mental health complaints such as PTSD. Resilience, defined as the capacity to recover from adversity, has been associated with life-satisfaction among Syrian

refugees.¹⁷ Similarly, self-efficacy, the belief in one’s ability to control and manage life events has been associated with better mental health outcomes in FDP.¹⁸ Both constructs are theoretically assumed to be protective and associated with ER profiles with high adaptiveness.

However, research on comparative thinking concerning one’s well-being in forced migration is scarce. Well-being comparisons are important to consider, as judgements of well-being are based on ordinal standards. Empirically, they comprise several comparison types—including social, temporal, criteria-based, dimensional and counterfactual. According to theoretical models and factor analysis, they can be divided into aversive (ie, threatening the comparer’s motives, eg, “*I’m doing worse now than last year*”) and appetitive (ie, consonant with or challenging the comparer’s motives, eg, “*I’m doing better than most refugees*”) comparisons.¹⁹ A recent study on Arabic-speaking FDP in Germany revealed high prevalence of well-being comparisons, with aversive well-being comparisons associated with lower levels of subjective well-being.²⁰ In fact, evidence suggests that especially aversive well-being comparisons are associated with psychopathology including PTSD.¹⁹ Well-being comparisons are further significantly correlated with ER,²¹ yet this still needs to be investigated in FDP. Accordingly, it is assumed that appetitive well-being comparisons will be associated with ER profiles with high adaptiveness in contrast to aversive well-being comparisons.

The primary aim of our study was to examine the different habitual ER profiles among 991 Arabic-speaking Syrian FDP in Germany using LPA. In line with the study by Dixon-Gordon *et al*,¹¹ we hypothesised finding profiles of high regulators (high in reappraisal and suppression), low regulators (low in both ER strategies), reappraisal regulators (high reappraisal, low suppression) and suppressive regulators (high suppression, low reappraisal). Theoretically, we expected that suppressive and low regulators would show higher PTE, PTSD symptoms^{13 14} and aversive well-being comparison frequency, but lower self-efficacy, resilience and appetitive well-being comparisons relative to high and reappraisal regulators.

METHODS

Design, procedures and ethics

The present study is part of a larger project assessing putative psychological mechanisms underlying mental health outcomes in Arabic-speaking refugees and migrants in Germany, marking the first publication concerning well-being comparisons in FDP.²⁰ The present study addresses a unique research question and uses most of the data for the first time. Inclusion criteria were being over 18 years of age, native Arabic speaker and forced migration to Germany. Exclusion criteria were psychotic disorders, current suicide risk or lacking informed consent. The link to the survey was posted on Facebook groups like ‘Syrian refugees in Germany’ (see Churbaji and Morina²⁰ for further details). Written consent was collected at the survey’s start. If participants failed to meet the inclusion criteria or withheld consent, the survey concluded automatically, providing contact details of the Arabic-speaking principal investigator. Skipping questions or navigating back in the survey was not possible. Demographic variables were assessed via single-choice items listed in [table 1](#), including an ‘other’ option for open-ended responses, which were then classified accordingly. We followed the Strengthening the Reporting of Observational Studies in Epidemiology guidelines for observational studies.

Sample

Between May and June 2021, 4765 individuals followed the link posted in various Facebook groups. Of these, 1752 (36.8%) met

Table 1 Sociodemographic variables and outcome variables

Variable	N (%)	M (SD)	Observed range
Gender			
Female	61.5		
Age in years		30.25 (8.49)	18–67
Current state of residence			
Refugee residence permit	67.4		
Permanent residency status	16.1		
Naturalisation	5.7		
Student residency permit	2.2		
Other	8.6		
Household			
Family or partner	70.9		
Shared apartment	7.9		
Single	19		
Other	2.2		
Education			
Elementary school (6 years)	0.7		
Secondary school (9 years)	9.2		
High school diploma (12 years)	33.8		
Undergraduate and postgraduate studies (>12 years)	56.3		
Occupation			
Full time	18.3		
Part time	7.7		
Student or vocational training	44.9		
Unemployed	28.9		
Retired	0.3		
Years since living in Germany		5.49 (2.01)	0–22
Migration			
Asylum	55.1		
Family reunification process	25.7		
Visa application	13.2		
UNHCR resettlement programme	0.8		
Other	5.2		
Outcome variables			
ITQ		9.02 (5.45)	0–24
ERQ suppression		15.62 (5.25)	4–28
ERQ reappraisal		27.86 (6.10)	6–42
GSE		27.10 (5.29)	10–40
BRS		18.43 (4.45)	6–30
CSS-W aversive		18.61 (8.42)	0–40
CSS-W appetitive		16.10 (7.36)	0–40

BRS, Brief Resilience Scale; CSS-W, Comparison Standard Scale-Well-being; ERQ, Emotion Regulation Questionnaire; GSE, General Self-Efficacy scale; ITQ, International Trauma Questionnaire; UNHCR, United Nations High Commissioner for Refugees .

the inclusion criteria, and 1070 (22.5%) completed the entire survey and were included in the study. The current study is based on participants who indicated Syria as their country of origin (92.6%; n=991). Most participants were young-aged, female, with at least a high school degree and applied for asylum after fleeing to Germany (table 1). With an average of 5.49 years (SD=2.01) since living in Germany, 87.1% arrived in Germany between 2014 and 2019.

Instruments

The Arabic version of the *Emotion Regulation Questionnaire* (ERQ²²) is a 10-item self-report questionnaire assessing habitual use of cognitive reappraisal (6 items) and expressive suppression (4 items) on a 7-point Likert scale (1—strongly disagree to 7—strongly agree). It was validated based on a sample of 811 Arabic-speaking individuals in Lebanon, reporting a Cronbach's α of 0.76 for the reappraisal subscale and 0.66 for the suppression subscale. Similarly, the scale yielded an internal consistency of $\alpha=0.80$ for reappraisal and $\alpha=0.67$ for suppression in the current sample.

PTSD symptoms were assessed using the Arabic version of the *International Trauma Questionnaire* (ITQ²³), a self-report measure based on the diagnostic criteria of the International Classification of Diseases 11th Revision (ICD-11) for PTSD. While the ITQ measures both symptoms of PTSD according to the ICD-11 and disturbances of self-organisation, we were only interested in PTSD symptoms for the sake of brevity. That is, we assessed six items focusing on re-experience, avoidance and sense of current threat. Respondents rate their level of distress for each symptom over the past month on a 5-point Likert scale (0—not at all to 4—extremely). In the current sample, α was 0.84.

Self-efficacy was assessed using the *General Self-Efficacy* scale (GSE²⁴). The scale consists of 10 items using a 4-point Likert scale (1—not at all true to 4—exactly true). The scale has been cross-culturally adapted and translated in 25 countries. The Arabic version was validated based on 264 subjects from Syria reporting an α value of 0.79. In the current sample, α was 0.89.

The Arabic version of the *Brief Resilience Scale* (BRS¹⁷) assesses an individual's capacity to bounce back from stressful events. The scale consists of six items rated on a 5-point Likert scale (1—strongly disagree to 5—strongly agree) with items 2, 4 and 6 reverse-coded. The BRS revealed good internal consistency in a sample of Syrian refugees in Iraq. In the current study, α was 0.79.

The *Comparison Standard Scale-Well-being* (CSS-W²⁵) was applied to assess the frequency of comparisons related to one's own well-being. The original CSS-W comprises 14 frequency items divided into appetitive and aversive comparison subscales using a 6-point Likert scale (0—not at all to 5—often). The aversive comparison subscale includes upward social comparisons, upward retrospective and downward prospective temporal comparisons, upward counterfactual comparisons and upward criteria-based comparisons. The appetitive comparison subscale comprises downward social comparisons, downward retrospective and upward prospective temporal comparisons, downward counterfactual comparisons and downward criteria-based comparisons. In the current study, two items assessing war-related counterfactual comparison (eg, thought you would be doing better now if war-related circumstances had been different) were added summing up to 16 items. The CSS-W Arabic was translated and validated based on a sample of Arabic-speaking FDP in Germany showing good internal consistency.²⁰ In the current sample, the α values were 0.72 for the aversive subscale and 0.65 for the appetitive subscale.

The *Refugee Trauma History Checklist* (RTHC²⁶) assessed trauma exposure. It includes eight yes/no items evaluating exposure to war, forced separation from loved ones, loss of family members, witnessing violence, personal physical violence, torture, sexual violence and other life-threatening situations before and after leaving the home country.

Analysis

The LPA was conducted using ‘TidyLPA’²⁷ package in R for MAC. The logistic multinomial regression was performed with Latent Gold software for Windows.²⁸ All remaining descriptive analyses were conducted using IBM SPSS Statistics (V.27) for MAC. First, we conducted LPA to identify latent subgroups based on the observed ER variables. We aimed to categorise individuals into distinct profiles with similar ER response patterns. The default LPA model from TidyLPA, assuming equal variances and zero covariances across profiles, was used. To determine the optimal number of latent profiles, we started with a one-profile solution and successively increased the number of profiles. The successive models were compared using the goodness-of-fit indices: log likelihood, Akaike Information Criterion and sample-size-adjusted Bayesian Information Criterion, with lower absolute values indicating a better fit. The bootstrap likelihood ratio test (BLRT) was also used; a significant value ($p < 0.05$) suggests the model with ‘k’ classes outperforms the previous one with ‘k-1’ classes. Finally, higher entropy values were considered to indicate a greater distinction between profiles. We ran a logistic multinomial regression to examine how our predictor variables are related to membership in the identified latent profiles. In the bias-adjusted three-step approach²⁷ after estimating the latent profile model (step 1), subjects are classified to profiles based on their posterior profile membership probabilities (step 2). In step 3, profile memberships are regressed on sum scores on GSE, RTHC, ITQ, BRS and CSS-W (aversive and appetitive subscale). In this step, the underestimation bias of the regression parameter’s estimates due to membership classification errors is corrected using the maximum likelihood method. Multicollinearity was assessed using Pearson’s correlation coefficient with a cut-off value of 0.80 (online supplemental appendix, table A1). The largest profile served as the reference category for the logistic multinomial regression output. Additionally,

direct comparisons between the profiles are provided to highlight variable differences.

RESULTS

Descriptive statistics

Exposure to at least one PTE was reported by 98.2% of participants. The majority experienced war at close quarters (90%), followed by forced separation from family and friends (53.5%), and loss or disappearance of loved ones (42.4%) as shown in online supplemental appendix, table A2. Table 1 shows the mean values of outcome variables.

Latent profile analysis

Online supplemental appendix, table A3 shows model fit statistics for the LPA. We chose the 4-profile model as the most suitable among the tested solutions due to the substantial reduction of at least 173 points in all ICs compared with the 3-profile model, along with a significant BLRT value ($p < 0.05$). Although the BLRT was also significant in the 5-profile solution, the model was associated with relatively small reduction in ICs of maximum 38 points. The observed 4-profile model aligns with our theoretical framework proposing four ER profiles with an entropy value of 0.78. Figure 1 illustrates the standardised estimated means and 95% CIs of the items for each profile.

The four profiles reflect our hypotheses. Profile 1 is characterised by lower scores on all items, indicating a *low regulators* profile with 12.8% of participants. Profile 2, representing 20.6% of participants is characterised by higher scores on all items, aligning with *high regulators*. Profile 3 accounts for 25.1% of participants, with higher scores in reappraisal and lower in suppression, suggesting a profile of *reappraisal regulators*. Finally, the largest group, profile 4, includes 41.5% of participants, and is characterised by higher suppression and lower reappraisal scores, pointing to *suppressive regulators*. While reappraisal items effectively differentiate between the profiles,

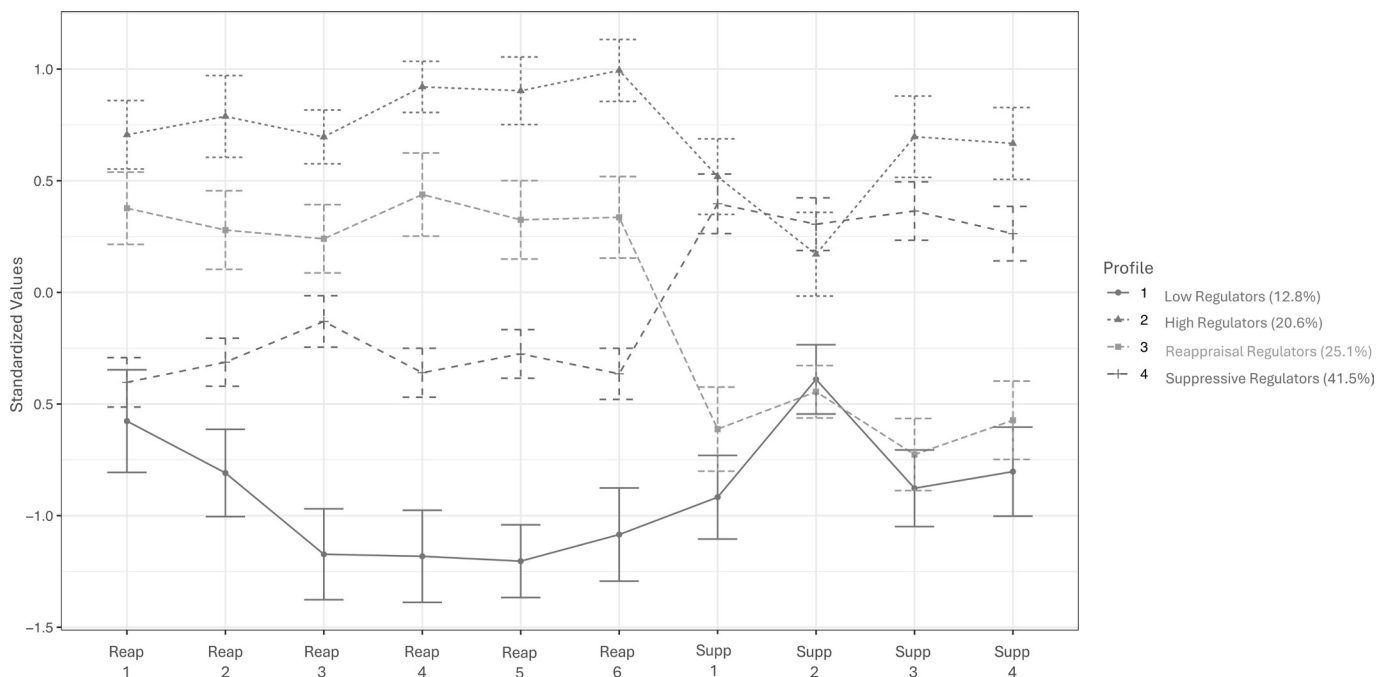


Figure 1 Estimated standardised suppression and reappraisal item means and 95% CIs across the four profiles. Reap 1 to Reap 6 denotes to the six items measuring reappraisal in the Emotion Regulation Questionnaire. Supp 1 to Supp 4 denotes the four items measuring suppression in the same questionnaire.

Table 2 Means of outcome variables across profiles

	Low regulators M (SD)	High regulators M (SD)	Reappraisal regulators M (SD)	Suppressive regulators M (SD)
CSS-W appetitive	14.28 (7.03)	18.22 (8.45)	16.72 (7.04)	15.23 (6.78)
CSS-W aversive	19.63 (8.53)	17.76 (7.81)	17.51 (8.34)	19.35 (8.62)
GSE	23.82 (5.82)	29.24 (5.03)	28.00 (4.58)	26.44 (5.04)
BRS	16.57 (4.68)	19.95 (4.22)	19.29 (4.48)	17.74 (4.14)
ITQ	9.27 (6.15)	9.27 (5.30)	8.20 (5.18)	9.32 (5.43)
RTHC	4.15 (2.12)	4.49 (2.33)	3.77 (1.9)	4.32 (2.07)

BRS, Brief Resilience Scale; CSS-W, Comparison Standard Scale-Well-being; GSE, General Self-Efficacy scale; ITQ, International Trauma Questionnaire; RTHC, Refugee Trauma History Checklist.

suppression items do not significantly distinguish between low and reappraisal regulators, a pattern that is similarly observed between high and suppressive regulators (figure 1).

Table 2 presents mean values of outcome variables across profiles. On protective variables comprising self-efficacy, resilience and appetitive well-being, high regulators showed the highest values followed closely by reappraisal regulators. In contrast, low regulators exhibited the lowest values on these variables. For PTE exposure, high regulators had the highest values followed by suppressive and low regulators with similar values, and reappraisal regulators showing the lowest values. For aversive well-being comparisons, both reappraisal and high regulators showed similarly low values in contrast to suppressive and low regulators showing similarly high values. For PTSD, reappraisal regulators demonstrated the lowest values, with all other profiles displaying similarly high values.

Multinomial regression analysis

Table 3 shows the log ORs for belonging to each profile relative to suppressive regulators. Appetitive well-being comparisons, self-efficacy, resilience and PTE exposure were significantly associated with profile membership, while aversive well-being comparisons and PTSD symptoms were not. The covariates explain 7.4% of the variance in the data. Reflecting on the pattern observed in table 2, higher PTE exposure decreased the probability of being among reappraisal regulators compared with suppressive regulators and significantly differentiated reappraisal against suppressive and high regulators. Appetitive well-being comparisons distinguished all profiles except low against suppressive regulators and reappraisal against high regulators, with higher values linked to high or reappraisal regulators relative to suppressive regulators. Self-efficacy distinguished all profiles except between reappraisal and suppressive regulators, with higher self-efficacy linked to high regulators relative to suppressive regulators. Resilience distinguished all profiles except between reappraisal and high regulators and between low and suppressive regulators, with higher resilience associated with high or reappraisal regulators relative to suppressive regulators.

DISCUSSION

We assessed ER profiles of Syrian FDP in Germany. In line with theoretical expectations, we identified four distinct ER profiles: suppressive regulators, which constituted the largest profile, followed by reappraisal regulators, high regulators and low regulators. From the predictors assessed, PTE exposure, self-efficacy, resilience and appetitive well-being comparisons were significantly associated with profile membership, while PTSD and aversive well-being comparisons were not. As hypothesised, high and reappraisal regulators reported higher values in self-efficacy,

resilience and appetitive well-being comparisons, reflecting higher adaptiveness relative to low and suppressive regulators.

In line with Lougheed and Hollenstein,¹² our findings revealed a high regulators profile comprising individuals who habitually employ both reappraisal and suppression strategies to regulate their emotions. Our findings suggest that despite high rates of PTE exposure in this profile, individuals with a high regulation ER profile reported higher rates of protective psychological factors comprising self-efficacy, resilience and appetitive well-being comparisons, suggesting a form of adaptation and psychological resilience. While Specker and Nickerson¹³ did not identify a low regulators profile, their experimental study¹⁴ showed that low regulation was associated with higher levels of psychopathology. Corroborating this, profiles of low regulators were significantly associated with lower mean values in self-efficacy, resilience and appetitive well-being comparisons compared with high and reappraisal regulators.

Our data further reveal that while suppressive regulators displayed lower levels of protective factors than reappraisal and high regulators, they still have higher mean scores on these protective factors than low regulators. This observation may support the argument that suppression, often classified as a 'maladaptive' ER strategy,⁵ should be considered within a cross-cultural context. A recent meta-analysis reported greater use of emotion suppression in individuals with non-Western socialisation.¹⁶ Still, the association between suppression and higher psychopathology is well-documented.^{5, 9} Taking into account (1) the debate on oversimplifying cultures into 'west-east' dichotomy with little consideration of variations within cultures,²⁹ (2) the specific context of the present sample in which FDP navigate between the heritage and the host culture³⁰ and (3) the high rates of PTE exposure in our sample (98%), attributing an adaptive or maladaptive function to suppression based on our assessment should be handled carefully. Nevertheless, navigating between the heritage and the host culture may necessitate the use of both suppression and reappraisal ER strategies.³⁰ This may also account for the notably high adaptiveness of the high regulation profile in our sample, surpassing the protective factors observed in individuals with a reappraisal profile who habitually favour reappraisal over suppression.

Although the association between PTSD and ER is well-documented⁵ and PTSD scores were high, PTSD was not significantly associated with ER profiles after accounting for PTE exposure, self-efficacy, resilience and well-being comparisons. In the present sample, this could be attributed to PTSD playing a minor role in ER profile membership after accounting for these factors given (1) the high educational background (90.1% have ≥ 12 years of education) and (2) the long years since living in Germany leading to relatively low levels of PTSD symptoms.

Table 3 Output of the bias-adjusted three-step multinomial regression analysis including log ORs and paired comparison of the profiles

Profiles	Comparison between profiles, p value															
	Low regulators	SE	High regulators	SE	Reappraisal regulators	SE	Suppressive regulators	Wald test	P value	Low versus suppressive regulators	High versus suppressive regulators	Reappraisal versus suppressive regulators	Reappraisal versus high regulators	Low versus high regulators	Low versus reappraisal regulators	
Intercept	2.68	1.01	-6.63	0.96	-2.67	0.86	0	64.09	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	
Covariates																
CSS-W appetitive	-0.03	0.02	0.07	0.02	0.06	0.02	0	32.48	<0.00	0.15	<0.00	<0.00	0.52	<0.00	<0.00	
CSS-W aversive	-0.02	0.02	-0.02	0.01	-0.02	0.02	0	2.92	0.4	0.36	0.25	0.14	0.73	0.94	0.14	
GSE	-0.09	0.03	0.11	0.03	0.04	0.02	0	34.30	<0.00	<0.00	<0.00	0.10	<0.05	<0.00	<0.00	
BRS	-0.04	0.04	0.09	0.03	0.07	0.03	0	17.63	<0.00	0.32	<0.00	<0.05	0.49	<0.00	<0.05	
ITQ	-0.01	0.03	0.02	0.02	-0.01	0.02	0	2.73	0.43	0.61	0.31	0.48	0.13	0.26	1	
RTHC	-0.02	0.06	-0.01	0.05	-0.15	0.05	0	8.98	0.03	0.69	0.92	<0.01	<0.05	0.79	0.07	

The profile suppressive regulators is set as the reference group.
 BRS, Brief Resilience Scale; CSS-W, Comparison Standard Scale-Well-being; GSE, General Self-Efficacy scale; ITQ, International Trauma Questionnaire; RTHC, Refugee Trauma History Checklist.

This could suggest that the association between ER strategies and PTSD is impacted by factors like self-efficacy, resilience and well-being comparisons. However, more nuanced research is warranted to understand this outcome. Furthermore, the unexpected lack of significance of aversive well-being comparisons as a predictor of ER strategies might be a result of aversive comparisons leading to negative affect, which is managed to a similar extent by either cognitive reappraisal or suppression, with no difference between the profiles. Alternatively, suppressive regulators may be less accurate in noticing and remembering (and hence reporting) aversive comparisons as they are more likely to avoid a comparison process before completion. Overall, the disparity between aversive and appetitive well-being comparisons highlights the importance of differentiating between the two subscales of the CSS-W²⁰ and warrants further investigation.

Despite the large sample size, our study has several limitations. The low and high regulator profiles might represent extreme response styles due to the self-report nature of the instruments, although scoring trends in the CSS-W aversive subscale counter this argument. The cross-sectional design omits causal inferences, and future research should investigate these associations in experimental or longitudinal settings and include more ER strategies beyond suppression and reappraisal such as acceptance and experiential avoidance. While our study focused on PTSD symptoms, future research should include symptoms of other disorders like depression or anxiety that are prevalent in FDP. Furthermore, our recruitment via social media limits generalisability, as our sample consisted of mainly young and educated adults and it could not be verified that all participants were refugees from Syria. The high PTE exposure (98%) in our sample additionally limits generalisability to high adversity populations. Additionally, internal consistencies of some subscales such as reappraisal in ERQ and appetitive comparison in the CSS-W were rather low. Yet, these values are similar to those reported in the original validation studies and may be attributable to the breath of these constructs.^{22 25} Additionally, omitting the assessment of functional impairment and self-organisation disturbances in the ITQ hindered the examination of PTSD and complex PTSD prevalence. Finally, limiting the assessment of PTE exposure to war-related experiences inhibits the ability to draw conclusion on other interpersonal traumatic experiences.

Clinical implications

Our study has important clinical implications, indicating a high adaptability among individuals relying on both suppression and reappraisal as habitual ER strategies in FDP. Given that the majority of our sample relied on either suppression or reappraisal ER strategies, interventions designed to broaden the ER strategies in FDP may prove useful. Future studies should investigate the efficacy of psychoeducational approaches to promote diverse ER repertoire, potentially paving the way for effective and cost-effective, large-scale interventions for FDP in need of mental healthcare.

In conclusion, our study identified four distinct ER profiles among Syrian Arabic-speaking FDP in Germany. High regulators showed the highest values in protective mechanisms followed by reappraisal regulators, suppressive regulators and low regulators. Our findings extend the current literature by elucidating the association between these profiles and various psychological factors. Future research should further investigate the interaction between habitual ER profiles, additional psychological mechanisms and psychopathology in individuals with a history of forced migration. This exploration may provide valuable

insights for the development of more effective psychological interventions.

Contributors DC and NM designed the study. DC conducted the study and the statistical analyses and wrote a first draft of the manuscript. DC is the guarantor for the study. All authors have contributed to and approved the final version of the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval The University of Münster's local ethics committee granted ethical approval for the study (reference 2021-37-DCh). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available on reasonable request. Data are available on request on the Open Science Framework (<https://doi.org/10.17605/OSF.IO/PA5HB>).

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iD

Dana Churbaji <http://orcid.org/0000-0001-9939-3905>

REFERENCES

- Blackmore R, Boyle JA, Fazel M, *et al*. The prevalence of mental illness in refugees and asylum seekers: A systematic review and meta-analysis. *PLoS Med* 2020;17:e1003337.
- Minihan S, Liddell BJ, Byrow Y, *et al*. Patterns and predictors of posttraumatic stress disorder in refugees: A latent class analysis. *J Affect Disord* 2018;232:252–9.
- Kip A, Priebe S, Holling H, *et al*. Psychological interventions for posttraumatic stress disorder and depression in refugees: A meta-analysis of randomized controlled trials. *Clin Psychol Psychoth* 2020;27:489–503.
- Nguyen TP, Guajardo MGU, Sahle BW, *et al*. Prevalence of common mental disorders in adult Syrian refugees resettled in high income Western countries: a systematic review and meta-analysis. *BMC Psychiatry* 2022;22:15.
- Carmassi C, Conti L, Gravina D, *et al*. Emotional dysregulation as trans-nosographic psychopathological dimension in adulthood: A systematic review. *Front Psychiatry* 2022;13:900277.
- Gross JJ. The Emerging Field of Emotion Regulation: An Integrative Review. *Rev Gen Psychol* 1998;2:271–99.
- Khan AJ, Maguen S, Straus LD, *et al*. Expressive suppression and cognitive reappraisal in veterans with PTSD: Results from the mind your heart study. *J Affect Disord* 2021;283:278–84.
- Nickerson A, Bryant RA, Schnyder U, *et al*. Emotion dysregulation mediates the relationship between trauma exposure, post-migration living difficulties and psychological outcomes in traumatized refugees. *J Affect Disord* 2015;173:185–92.
- Nickerson A, Garber B, Liddell BJ, *et al*. Impact of Cognitive Reappraisal on Negative Affect, Heart Rate, and Intrusive Memories in Traumatized Refugees. *Clin Psychol Sci* 2017;5:497–512.
- Ford BQ, Gross JJ, Gruber J. Broadening Our Field of View: The Role of Emotion Polyregulation. *Emot Rev* 2019;11:197–208.
- Dixon-Gordon KL, Aldao A, De Los Reyes A. Repertoires of emotion regulation: A person-centered approach to assessing emotion regulation strategies and links to psychopathology. *Cogn Emot* 2015;29:1314–25.
- Lougheed JP, Hollenstein T. A Limited Repertoire of Emotion Regulation Strategies is Associated with Internalizing Problems in Adolescence. *Soc Dev* 2012;21:704–21.
- Specker P, Nickerson A. Investigating the relationship between distinctive patterns of emotion regulation, trauma exposure and psychopathology among refugees resettled in Australia: a latent class analysis. *Eur J Psychotraumatol* 2019;10:1661814.
- Specker P, Nickerson A. An experimental investigation of spontaneous emotion regulation variability, negative affect, and posttraumatic stress disorder among traumatized refugees. *Psychol Trauma* 2023;15:219–26.
- Butler EA, Lee TL, Gross JJ. Does Expressing Your Emotions Raise or Lower Your Blood Pressure? The Answer Depends on Cultural Context. *J Cross Cult Psychol* 2009;40:510–7.
- Weiss NH, Thomas ED, Schick MR, *et al*. Racial and ethnic differences in emotion regulation: A systematic review. *J Clin Psychol* 2022;78:785–808.
- Yildirim M, Aziz IA, Vostanis P, *et al*. Associations among resilience, hope, social support, feeling belongingness, satisfaction with life, and flourishing among Syrian minority refugees. *J Ethn Subst Abuse* 2024;23:166–81.
- Nickerson A, Byrow Y, O'Donnell M, *et al*. Cognitive mechanisms underlying the association between trauma exposure, mental health and social engagement in refugees: A longitudinal investigation. *J Affect Disord* 2022;307:20–8.
- Morina N. Comparisons Inform Me Who I Am: A General Comparative-Processing Model of Self-Perception. *Perspect Psychol Sci* 2021;16:1281–99.
- Churbaji D, Morina N. Cognitive factors underlying the impact of postmigration stressors on subjective well-being: Well-being comparisons and self-efficacy. *Clin Psychol Psychoth* 2024;31:e2928.
- Schlechter P, Morina N. The associations among well-being comparisons and affective styles in depression, anxiety, and mental health quality of life. *J Clin Psychol* 2024;80:355–69.
- Kahwagi R-M, Zeidan RK, Haddad C, *et al*. Emotion regulation among Lebanese adults: Validation of the Emotion Regulation Questionnaire and association with attachment styles. *Perspect Psychiatr Care* 2021;57:809–20.
- Vallières F, Ceannt R, Daccache F, *et al*. ICD-11 PTSD and complex PTSD amongst Syrian refugees in Lebanon: the factor structure and the clinical utility of the International Trauma Questionnaire. *Acta Psychiatr Scand* 2018;138:547–57.
- Scholz U, Doña BG, Sud S, *et al*. Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *Eur J Psychol Assess* 2002;18:242–51.
- Morina N, Schlechter P. Habitual aversive and appetitive well-being comparisons in dysphoria: Introducing the Comparison Standards Scale for well-being. *J Affect Disord* 2023;322:132–40.
- Sigvardsdotter E, Nilsson H, Malm A, *et al*. Development and Preliminary Validation of Refugee Trauma History Checklist (RTHC)-A Brief Checklist for Survey Studies. *Int J Environ Res Public Health* 2017;14:1175.
- Rosenberg J, Beymer P, Anderson D, *et al*. tidyLPA: An R Package to Easily Carry Out Latent Profile Analysis (LPA) Using Open-Source or Commercial Software. *JOSS* 2019;3:978.
- Bakk Z, Tekle FB, Vermunt JK. Estimating the Association between Latent Class Membership and External Variables Using Bias-adjusted Three-step Approaches. *Sociol Methodol* 2013;43:272–311.
- Vignoles VL, Owe E, Becker M, *et al*. Beyond the “east-west” dichotomy: Global variation in cultural models of selfhood. *J Exp Psychol Gen* 2016;145:966–1000.
- Eng T, Kuiken D, Temme K, *et al*. Navigating the Emotional Complexities of Two Cultures: Bicultural Competence, Feeling Expression, and Feeling Change in Dreams. *J Cult Evol Psychol* 2005;3:267–85.