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Correlates and Predictors of Prolonged Grief and Mental Health Outcomes in Immigrants/Refugees Exposed to Trauma and Bereavement: A Systematic Review

Journal of Affective Disorders

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Abstract

Background: Trauma and bereavement are two dovetailling fields. However, prior studies in immigrants and refugees have predominately emphasized on trauma and its related disorders (PTSD) and predictive factors. The present study aimed to provide a systematic review of up-to-date literature on correlates and predictors of prolonged grief and mental health outcomes in immigrants and refugees.

Method: We performed a systematic literature review using five databases (PsycINFO, PsycARTICLES, Psychology and Behavioral Sciences Collection, Academic Search Elite PubMed) and manual searching to identify empirical studies matching with our objective. The narrowing process of study selection was designed according to PRISMA guidelines.

Results: The initial search generated 119 articles and 12 met inclusion criteria. Traumatic and multiple losses implying death of first-degree relatives (child, spouse, parent), appeared to be a potent risk factor for prolonged grief, combined prolonged grief and PTSD, depression, disability and idioms of distress.

Limitations: All included studies adopted cross-sectional design, limiting understanding of causative pathways. Heterogeneity of variables used and outcomes measures percluded to perform a meta-analysis.

Conclusions: A consistent trend indicated higher prevalence of prolonged grief and comorbidities in immigrants and refugees. Psychopathological and transcultural aspects are discussed and perspectives for improving further research in this field are paved.

Keywords: Bereavement, trauma, prolonged/complicated grief, immigrant/refugee/asylum seeker, psychopathology.

1. Background and objective

Even though trauma and bereavement are two dovetailling fields (Green, 2000; Figley, Bride &Mazza, 1997; Regehr & Sussman, 2004; Stroebe, Schut & Finkenauer, 2001), research on psychopathology in immigrants and refugees have predominately emphasized on trauma and its stress-related disorders (PTSD, anxiety, and depression also) and contributing factors. A substantial body of research showed that refugees are highly at risk for posttraumatic stress disorder (PTSD) and its aftermath. Fazel, Wheeler and Danesh (2005) estimated this risk at ten times for adult refugees resettled in western countries compared to age-matched general population. This heightened risk is due to a variety of factors, substantially to their exposure to multiple traumatic events, such as violence, torture, injury, disappearance or loss of loved ones, postmigration stressors… (e.g. Aoun, Joundi & El Gerges, 2018; Chen, Hall, Ling & Renzaho, 2017; Knipscheer, Sleijpen, Mooren et al., 2015; Tufan, Alkin & Bosgelmez, 2013). The study by Tufan et al. (2013) showed that suffering torture and death of significant others due the violence highly predicted PTSD in asylum seekers and refugees in Istanbul. Trauma and grief are often not mutually exclusive; immigrants and refugees may suffer from both comorbiditly (Regehr & Sussman, 2004).

There is a recent surge in research investigating the impact of a psychological burden of death of loved ones in the context of migration, as an overwhelming distress often associated with PTSD symptoms. In general, the death(s) can occur simultaneously with traumatic events endured in the homeland preceding the emigration or along the emigration, or latter in the host country. Although some refugees overcome to adjust to or recover from traumatic and multiple deaths and combined traumatic events (Siriwardhana, Ali, Roberts & Stewart, 2014), other ones are more vulnerable to develop chronic grief symptoms overlapping with PTSD sequaela (Green, 2000; Neria & Litz, 2004; Nickerson, Liddell, Maccallum et al., 2014; Regehr & Sussman, 2004).

Grief is a normal response to loss of a loved one, albeit distressing. However, traumatic circumtancies surrounding the death can undermine the normal grieving processes and lead to prolonged grief disorder (PGD). Initially called ʿtraumatic griefʾ or ʿcomplicated griefʾ, PGD refers to maladaptative grief reactions including a range of clinical symtoms, such as painful uncontrollable emotions (e.g. sadness, bitterness, anger), intense yearning and longing for the deceased, distressing intrusive thoughts related to the death (Maciejewski & Prigerson, 2017; Prigerson et al., 2009; Simon et al., 2011). PGD is shown to relate to depresion, anxiety, PTSD, poor quality of life and well-being (e.g. Boelen & Prigerson, 2007; Prigerson, Bierhals, Kasl et al., 1997; Silverman, Jacobs, Kasl, Shear, 2000; Simon, Shear, Thompson et al., 2007). Due to the intrinsic interplay of PGD and PTSD to some extent, innovative prevention and treatment programs on both disorders are emerging for young and adult bereaved refugees (see Murray, Cohen, Ellis et al., 2008; Smid, Kleber, de la Rie et al., 2015). These programs seem promising and it stands to argue that their efficacy needs in-depth understanding of the determinants of prolonged grief reactions in immigrants and refugees who experienced the loss or traumatic loss of a close person. To that end, one should keep in mind the different cultural backgrounds of immigrants and refugees. This implies to take into account the cultural variability in adjusting to trauma and loss (Eisenbruch, 1984a, 1984b; Parkes, Laungani & Young, 2015; Rosenblatt, 2007; Rosenblatt, Walsh & Jackson, 1976), specifically those with presumed trauma-or grief-related disorders (Smid, Groen, de la Rie et al., 2018).

To date, these determinants addressed by the growing literature are scarttered and relatively unknown. A summarized comprehensive overview is thus necessary to illuminate them and to identify high-risk profiles for prolonged state of bereavement and poor health outcomes. The current study therefore aimed to systematically review literature on diverse risk and adaptive factors associated with of prolonged grief reactions and health related

outcomes in immigrants and refugees who faced to death of a loved person. In addition, we discussed novel hypotheses and perspectives to pave the way for further empirical research.

2. Methods

2.1. Data sources and search strategy

To perform this literature review, five electronic databases (PsycINFO, PsycARTICLES, Psychology and Behavioral, Sciences Collection Academic Search Elite and PubMed) were systematically searched to identify potentially relevant articles. Titles and abstracts were searched with a combination of keywords or their truncation with Boolean operators if possible to capture variation in the terminology ([grief OR bereav* OR mourn* OR loss OR widow*] AND [asylum seeker or refugee or immigra* or migra*] AND [health OR well-being OR disorder OR quality of life OR distress* OR depress* OR anxiety OR somati*]). The search terms were designed to be as inclusive as possible, with later filtering of nonrelevant materials. The complete search terms used are presented in Table 1. Finally, we exploited additional sources (e.g. Google Scholar, manual search through reference lists) to check other supplementary suitable articles not identified by our search algorithm.

Table 1. Literature search terms used for keywords

Keywords		Included
1	Grief	Grief, griev*, bereav*, loss, death, mourn*
2	Trauma	Trauma*, post-traumatic stress
3	Immigrant	Immigra*, migrat*
4	Refugee	Refugee, asylum seeker
5	Health	health, disorder, distress, well-being, quality of life, somatization or somatic symptoms, depression, anxiety
#1 OR #2 AND #3 OR #4 AND #5		

2.2. Inclusion and exclusion criteria

The eligibility criteria concerned quantitative studies published in peer-reviewed journals with no language restriction. These studies must survey adult bereaved immigrants, refugees

or asylum seekers. We included studies that adressed any types of death and of relationship to the death, regardless if the death occured either in the home land preceding the migration or during the displacement/migration or latter in the resettlement country. Included studies must address bereavement outcomes.

Given to the United Nations Convention on Refugees' definition of refugees as people who have sought international protection, we excluded articles which targeted internally-displaced people. We also excluded articles that focused on children refuges, so less than 18 years. Studies on non-death grief, such as cultural bereavement, migratory grief were excluded. Furthermore, we did not consider ambiguous loss related to disappeared close person, for this kind of loss does not allow grieving process until the reality death becomes to evidence (e.g. Lenferink, de Keijser, Wessel et al., 2017). Studies on treatment outcomes or on interventions or prevention programs including immigrants and refugees were not retained for the present literature review. Finally, papers based on case study, theorical reflection, doctoral theses, and conference papers or abstracts were excluded. The last search was run on August 2018. One paper in press was included.

2.3. Study selection and data extraction

The narrowing study selection process was designed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Liberati, Tetzlaff et al., 2009, see Fig. 1). The initial search generated 119 potentially relevant papers. After removal of duplicates, the search yielded 78 records. Further screening by reading abstracts led us to retrieve 48 articles for not reporting… While there were two and more papers reporting on the same sample, we included those which presented different relevant aspects of the results. Finally, a total sample of 12 studies met appropriately our inclusion criteria.

From each article we extracted the following data: name of the first author and year of publication, origin country of participants, host country and mean lengh of stay, study design, sample size and data collection methods, sex of parctipants, mean age or range, mean time since the loss, relationship to the deceased person, outcomes measures used. Finally, we summarized the main findings of the study.

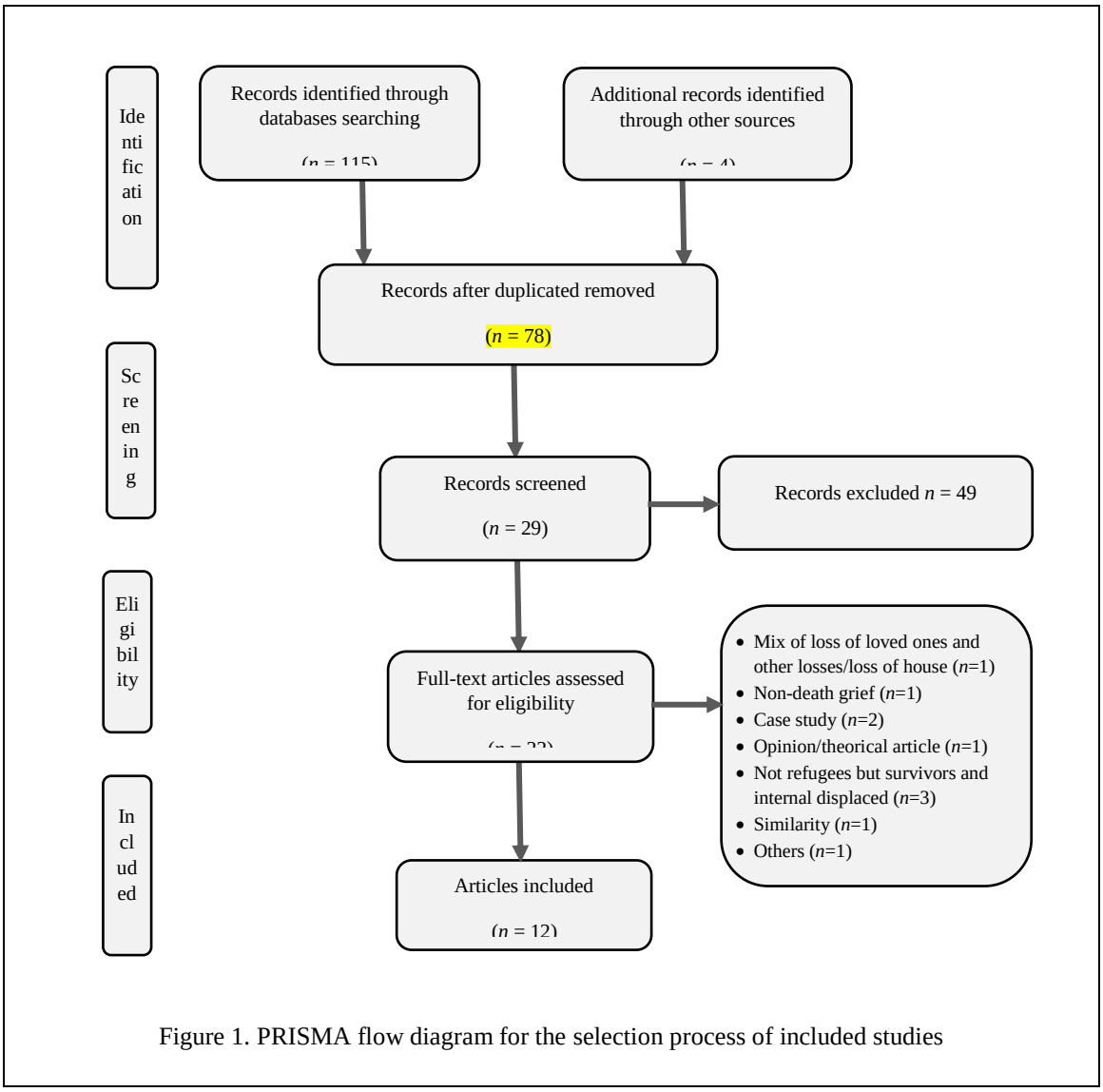


Figure 1. PRISMA flow diagram for the selection process of included studies

2.4. Assessment of study quality

Two investigators screened and evaluated the eligible papers independently. They adopted consensus principle when there were discrepancies in their evaluation' scores, and if necessary a third reviewer was consulted. Given to the cross-sectional design and cross-

cultural setting of our included studies, we adapted Newcastle-Ottawa Scale for cross-sectional studies to assess each study quality. The appraisal criteria are displayed in Table 2. The total score was ranged from 0 to 12. Coding discrepancies were estimated at 6.5% and were solved by consensus decision. The average quality of included studies was 7.2 (*SD*=1.9, range 4–11) out of 12 points. Ten studies (83.3%) used non-random samples. The recruitment procedure as well as inclusion and exclusion criteria of participants were often described (75%). Most studies relied on reliable measures (75%) which underwent in forward and back translation to local language(s). Overall, half of included studies reported sufficient psychometric proprieties of measures used. In 58.3% of studies, the possible confounders such as the time elapsed since bereavement, the relationship to the deceased and the length of stay in resettlement country were not examined and controlled in statistical approach.

Table 2. Quality checklist for included studies

Criteria		Items	Coding
Selection	□	Truly representative of the average in the target population (all subjects or random sampling)	2
	□	Somewhat representative of the average in the target population (non-random sampling)	1
	□	The sampling method is described - Inclusion and exclusion criteria are stated	1
Outcomes assessment	□	Valid instruments used	2
	□	Psychometric proprieties are provided and sufficient	1
	□	Outcome assessment is multi-informant	1
Results reporting	□	Adequate characteristics of study participants (e.g. demographic, clinical, social) are reported	1
	□	Adequate statistical analyses for addressing hypotheses	1
	□	The statistical test used is clearly described, including confidence intervals and the probability level (*p* value).	1
	□	Numbers of individuals at each stage of the study are given, number of participants with missing data are reported for each variable of interest	1
	□	Possible confounders are examined and taken into account in the reporting of the results	1

Table 3. Description of the 12 included studies

Authors (Years)	Participants' origin country	Host country ; Mean lengh of stay	Sample size (*n*)	Study design and data collection	Sex of parctipants	Mean age (±SD) or range (years)	Relationship to the deceased person	Mean time since loss	Outcomes variables	Summary of main findings
Caspi et al. (1998)	Cambodia	USA (Massachusetts) 7 years	161	Comparative CSS, Random Sample, Face-to-face interview	63.4%F, 36.6% M	46.39	Death of child (up to 6 children)	NR	PTSD, depression, anxiety, general health, self-perceived health, somatic and emotional symptoms (culture-dependent depressive state), functioning and functional impairment	○ No association between loss a child and psychiatric symptoms (PTSD, depression, anxiety). ○ Significant group differences regarding self-perceived health, culture-dependent depressive state, somatic symptoms (poor vision, bodily pain, numbness, poor appetite). ○ Relatively small differences between both groups in the performance of actual daily and social activities. ○ Parents whose children died were somewhat more inclined to visit the temple.
Craig et al. (2008)	Bosnia	U.S. 9 (6-12) years	126	CSS, Random sample, Self-reported questionnaire	56% F, 44% M	42	NR	NR	PTSD, CG, anxiety, depression and general mental health (GMH)	○ 54% met diagnostic criteria of CG. ○ Significant differences in level of CG symptoms according to gender and age. ○ CG positively associated to PTSD (r = .78, p < .0005), depression and anxiety (r = .70, p < .0005), negatively associated with well-being (r = –.59, p < .0005) and GMH (r = –.68, p < .0005). ○ By adjusting for gender, age and race, CG added to the prediction of GMH whereas addition of PTSD symptoms to the equation did reliability improve R^2.
Hengst et al. (2018)	Iraq	Netherlands 20 months	294	CSS Nonrandom sample Face-to-face interview	35.4%F, 64.6% M	35.4 ±12.8	Family members (87.6%), friends (49.5%), child (8.1%)	NR	PTSD, MDD, anxiety, Quality of life, disabilities	○ Traumatic losses have direct effect on disability. ○ After controlling for demographics, traumatic events and secondary stress (e.g. long asylum procedure, postmigration stressors) traumatic events and multiple losses have significant effects on all outcomes variables. ○ Unnatural and unexpected loss of child seemed to be the most predictor of all outcomes variables. ○ Female sex independently increased the risk for of the development of PTSD, MDD, anxiety, specifically after losing a child.
Hinton et al. (2013a)	Cambodia	USA (Massachusetts)	100	CSS Nonrandom sample Face-to-face interview	65% F, 35% M	54.2 ±7.5	46% loss of a parent, 29% loss of a sibling, 15% loss of a child.	28.9 ± 11.9	Bereavement Questionnaire, Somatic symptoms (e.g. DSM-IV panic attack symptoms), PTSD	○ 76% had pained recall of a deceased; the person most frequently recalled in the last month (M=5.1) was a parent, following by sibling, child. ○ severity of pained recall of the deceased was highly correlated to the severity of PTSD (r= .62, p < .001). ○ Pained recall group (n=76) were more preoccupied by the spiritual status related to the rebirth of the deceased; they reported high upsetting dreams in the last month (r= .71, p < .001); they also reported more crying episodes lasting 11 min and multiple somatic symptoms, including such symptoms as palpitations, tinnitus, and headache; 70% attributed distress and somatic distress

										triggered by pained recall to *khyâl* attack.
Hinton et al. (2013b)	Cambodia	USA (Massachusetts)	100	CSS Nonrandom sample Face-to-face interview	65% F, 35% M	54.2 ±7.5	46% loss of a parent, 29% loss of a sibling, 15% loss of a child.	28.9 ± 11.9	PGD, self-perceived severity of grief-related distress, PTSD	○ 8% met criteria for a diagnosis of PGD. ○ Of those with PGD, 25% were male. ○ Bitter over loss (46%) and trouble accepting the loss (32%) were pronounced PGD symptoms. ○ 59% reported grief-related functional impairment. ○ PTSD symptoms significantly predicted grief-related distress. ○ PGD symptoms significantly predicted grief-related distress over and above the variance explained by PTSD symptoms. ○ Rebirth concerns and, but more than avoidance of reminders were significantly related to PGD severity (r = .69, p < .001)).
Kokou-Kpolou et al. (2017)	Togo	France and Belgium 11.47 ± 7.82	74	CSS, Nonrandom sample, Self-reported questionnaire	37.8% F, 62.2% M	37.12 ± 11.03	Parents, grandparent	47.01 ± 34.76 months	CG Guilt feeling	○ 41.9% met diagnostic criteria of CG. ○ Being eldest of sibling, unemployed, having less level of education were associated to high levels of CG symptoms. ○ Being under refugee status and when lengh of stay ≥ 10 years, relationship to the deceased were also associated with higher levels of CG symptoms. ○ Participation in mourning rituals marginally explained low level of CG symptoms but significantly related to less guilt feeling.
Momartin et al. (2004)	Bosnia	Australia >3 years of stay for 92%	126	CSS, Nonrandom sample, Face-to-face interview	61% F, 39% M	18-88	Secondary relatives (52%), friends or colleagues (25%), siblings (18%)	2-7 years (traumatic events)	PTSD, acute grief (CBI) Depression	○ No associations between grief and demographics (age, gender, having children, employment status, education level and lengh of stay) were found, except for widowhood caused by the war (χ^2=103.2, p < .01). ○ No relation between grief and PTSD other than a low-order relation with PTSD intrusion dimension. ○ Strong positive relation between acute grief symptoms and depression. ○ Traumatic loss was a specific determinant of acute grief symtoms (odds ratio: 2.1-6.0) and depression.
Nickerson et al. (2011)	Iraqi Mandaean community	Australia 4.7 ±4.3	315 experienced a loss (n = 247, 78.4%)	CSS Nonrandom sample Face-to-face interview	52.5% F, 47.5% M.	37.7 ± 14.7	Family member or close person	NR	PTSD, depression, CG, psychological and physical difficulties.	○ Loss was directly associated with grief symptoms. ○ Grief symptoms influenced the path from loss to depression. ○ Grief symptoms also impacted on the paths from loss to PTSD at both individual and family levels.
Nickerson et al. (2014)	Iraqi Mandaean community	Australia 4.31 ±4.25	248	CSS Nonrandom sample Face-to-face interview	52% F, 48% M	38.31 ±14.53	Family member (%), friends (48.39%)	NR	PTSD, PGD and depression	○ Combined PTSD/PGD class were more likely to female and refugees who have experienced more types of traumas (detention, abuse) and traumatic losses. ○ PGD class compared to resilient class, were more likely to older, refugees who also experienced more types of traumas (detention, abuse) and those who met greater adaptation difficulties.

Panagiotopoulos et al. (2013)	British and Greece	Australia	121	Comparative CSS Nonrandom sample Self-report questionnaire	100% F	77 (57–95)	Death of spouse	13 years	Well-being (self-rated health, depression and loneliness)	○ Greek widows versus British widows manifested reportedly worse self-rated health, and elevated depressive symptoms and loneliness ○ Similary, they displayed higher levels of mourning rituals, religiosity and continuing bonds to the spouse deceased than British ○ Both migrant groups perceived greater degree of emotional support; however Greek widows perceived more greater instrumental support from family whilst British widows from friends. ○ No significant correlations between predictor variables and well-being measures, for either immigrant group
Tay et al. (2015)	West Papua	Papua New Guinea	230	CSS-Nonrandom sample Face-to-face interview	40.5% F, 59.5% M	37 ± 9.80	Death of a family member and/or close friend	≤ 12 months	CG (PCBD + PGD), Adaptation and Development after Persecution and Trauma (ADAPT)	○ No association between CG and age and sex. ○ Traumatic loss and feelings of injustice (one of the factors of ADATP) were associated with CG and its subdomains of yearning/preoccupation; shock/disbelief; anger/negative appraisal and estrangement from others/social impairment
Tay et al. (2018)	West Papua	Papua New Guinea 15.6 ±0.48 (for 43.1%)	486	CSS-Nonrandom sample Face-to-face interview	44.1% F, 55.9% M	35.8 ±0.65	death of a family member and/or a loved (23.7%) - one or more loss	≤ 12 months	Complicated bereavement, PTSD symptoms, postmigration living difficulties, ADAPT	○ No association between CG and sociodemographic factors (age, gender, employment status, marital status). ○ Disrupted interpersonal bonds and networks was the only significant predictor for the complicated bereavement. ○ Traumatic loss events, disrupted interpersonal bonds and networks, and disruption in roles and identities predicted the combined posttraumatic bereavement (CG/PTSD).

Note: F= female; M= male; CSS = cross-sectional study; SD = standard deviation; NR = not reported; CG = complicated grief; PCBD = persistent complex bereavement disorder – cf. DSM-5; PGD = prolonged grief disorder – cf. forthcoming ICD-11; CBI = Core Bereavement Items.

3. Results

3.1. Study characteristics

Table 3 reported study characteristics and summarized main results for each study that was extracted and evaluated. The 12 included studies were published between 1998 and 2018. All used cross-sectional design, with this detail that two studies used a comparative cross-sectional design (Caspi et al., 1998; Panagiotopoulos et al., 2013). Eight studies used face-to-face interview procedure (66.7%) and 4 used self-report questionnaire (33.3%). Four studies were conducted in Australia, two in US and in Papua New Guinea, respectively, one in Netherlands ans one in France and Belgium. All studies surveyed immigrants and refugees from non-western developing countries, exception for a subsample of Greek migrants targeting in the study by Panagiotopoulos et al. (2013). The total of samples was 2388 and sample sizes ranged from 74 to 486 (M = 199, SD = 121.03). Female represented 53.4%. Age ranged widely from 18 to 95. From four samples, participants attended secondary or higher school, college or university. In two samples, the mean number of years of education was above 10. Across six studies, the time since loss was heterogeneous (≤ 12 months to 28.9[SD=11.9] years). The majority of studies described the death as *unexpected, unnatural, traumatic or tragic*. Predominately, death of grandparent or family member was reported in five studies, death of friend or colleague in four studies, death of parent, death of child and death of sibling were reported in three studies, respectively, and death of spouse in one study. Five studies reported multiple losses (Caspi et al., 1998; Hengst et al., 2018; Hinton et al., 2013a, 2013b; Tay et al., 2018).

3.2. Prolonged grief reactions and health related outcomes

3.2.1. Estimated prevalence and specific prolonged grief symptoms

Across three studies that reported PGD prevalence (Craig et al., 2008; Hinton et al., 2013b, Kokou-Kpolou et al. 2017), 8 to 54% of participants were presumed with PGD.

Kokou-Kpolou et al. (2017) found that refugees have scored higher on each CG-item (M = 2.25 and over) and differed significantly from immigrants on symtoms of difficulty to accept the death, avoidance reminders of who died, emptiness, chronic symptoms over 6 months and functional impairment (all $p < .001$). Hinton et al. (2013a, 2013b) reported grief-related functional impairment (59%) and pained recall as common severe bereavement-related symptoms (76%) among Cambodian refugees. The pained recall concerned most frequently the deceased parent. It induced crying episodes lasting about eleven minutes (58%) in the last month, accompanied by palpitations, tinnitus and headache (Hinton et al., 2013a).

3.2.2. Associations between prolonged grief and health related outcomes

Three studies have strictly examined the association between CG and PTSD. Craig et al. (2008) and Nickerson et al. (2011) found a positive intercorrelation for both disorders ($p <$ .001, respectively), whereas Momartin et al. (2004) found null effect. However, all three studies showed that CG correlated to depression (all $p < .001$). In addition, Craig et al (2008) found that CG was positively associated with anxiety, negatively with well-being and with general mental health.

After controlling for gender, age and race, Craig et al. (2008) found that CG accounted for 31% in predicting the variance of general mental health, whilst PTSD symptoms predicted nearly 6%. In similar way, controlling for age and gender, Hinton et al. (2013b) showed that prolonged grief significantly predicted grief-related functional impairment over and above the variance explained by PTSD symptoms. The study by Nickerson et al. (2011) sampled 315 Mandaean refugees from 100 families grouping them at both individual and family levels. This study supported previous results, but at family, by revealing that CG accounted for 64% in the variance of mental health variables whereas PTSD symptoms accounted for 46%. In contrast, at individual level, CG relatively less predicted the variance of mental health

variables (R^2 = .19), compared to PTSD symptoms (R^2 = .33). Hinton et al. (2013b) found that 38% of the variance PTSD severity was explained by the pained recall of the deceased.

3.3. Predictors of PG and health related outcomes

3.3.1. Sociodemographic factors

Across six studies (50%) which examined sex risk factor for CG and comorbidities, three reported its association with PGD (Craig et al., 2008; Hinton et al. 2013b) or with PTSD/PGD class (Nickerson et al., 2014). Hengst et al. (2018) did not use bereavement measure, however, they found that female were at risk for PTSD, depressive and anxiety symptoms, specifically after losing a child. Results from studies by Kokou-Kpolou et al. (2017) and Momartin et al. (2004) showed no significant gender differences in predicting CG. For age risk factor, three studies showed that older refugees were more likely to develop CG symptoms (Craig et al., 2008; Nickerson et al., 2014) or disabilities (Hengst et al., 2018). With regard to education, only one study revealed that immigrants and refugees who attended university less reported CG symptoms (Kokou-Kpolou et al., 2017). Nevertheless, higher education as defined by 13 years or more of education seemed to be a protective factor for PTSD, depression and anxiety, except for CG (Craig et al., 2008). No studies apart from the study by Kokou-Kpolou et al. (2017) examined and reported three additional demographic factors: sibling position, employment and marital status. These authors found that immigrants and refugees who were eldest sibling, married or in common-law union and unemployed were more vulnerable to increased CG symptoms (all $p < .001$).

3.3.2. Bereavement-related factors

3.3.2.1. Traumatic and multiple losses and trauma events. Four studies revealed that traumatic loss has direct effect on PGD (Tay et al., 2015) and, comorbiditly, on PGD and depression (Momartin et al., 2004), or on PTSD/PGD, (Nickerson et al., 2014) and on disability (Hengst et al., 2018). For multiple losses and traumatic events (detention, abuse), respectively, one

study reported significant association with PTSD/PGD (Nickerson et al., 2014). Also, both risk factors significantly explained PTSD and comorbidities (depression, anxiety and disability), and worse quality of life after adjusting for demographics and secondary stressors, i.e., long asylum procedure and postmigration stressors (Hengst et al., 2018). Furthermore, Tay et al. (2015) identified persisting preoccupations with injustice in west Papuan refugees as psychological state due to persecution and traumatic loss. They showed that this feeling of injustice was associated with CG.

3.3.3.2. Relationship to the deceased and modes of death. Three studies examined the potential impact of the relationship to the deceased. Kokou-Kpolou et al. (2017) found that the death of first-degree relatives has moderate effect on CG. They also reported a moderate effect of unexpected loss on CG. Hengst et al. (2018) found that the unnatural and unexpected loss of child seemed to be the strongest predictor of the outcome variables mentioned above. Caspi et al. (1998) found no association between loss a child and conventional psychiatric measures (PTSD, depression, anxiety) but significant association with self-perceived health, culture-dependent depressive state (e.g. ʻa deep worring sadness not visible to others') and somatic symptoms (poor vision, bodily pain, numbness).

3.3.3.3. Time since death. Five studies did not report this variable (Caspi et al., 1998; Craig et al., 2008; Hengst et al., 2018; Nickerson et al., 2011, 2014). One study explored the potential effect of the time since the loss which explained decreased CG symptoms across three years; however this effect was marginally significant after controlling for demographics and factors linked to the immigration (Kokou-Kpolou et al., 2017).

3.3.4. Factors related to immigration status and experience

Two studies investigated three specific factors linked immigration experience (Hengst et al., 2018; Kokou-Kpolou et al., 2017). Hengst et al. (2018) found that long asylum procedure and postmigration stressors were associated with PTSD and comorbidities. Kokou-Kpolou et

al. (2017) showed that participants who were under refugee status and when the lengh of stay was long (10 years and more) reported increased CG symptoms. Both risk factors accounted for 14.7% of the variance of CG.

3.3.5. Interpersonal resources and cultural-related factors

Overall, four studies drew attention to certain culturally specific factors which may affect grief processes in bereaved immigrants and refugees. Hinton et al. (2013a, 2013b) assessed the cultural interpretations of severe bereavement distress and somatic symptoms in Cambodian refugees. In the first study, they found that 70% of those suffering from painful memories (n = 76) of deceased attributed these symptoms to *khyâl* attack[1] and those who were preoccupied by the concerns about the deceased not yet being reborn in the after life (72%) had painful and upsetting dreams of him/her in the last month. In the second study, they showed that concerns about rebirth status were highly correlated with PGD severity. In their side, Kokou-Kpolou et al. (2017) noted that 64.9% of bereaved immigrants and refugees performed culturally appropriate rituals related to death or mourning. Participation in these rituals was associated to decreased grief symptoms, however the effect was small. The study by Panagiotopoulos et al. (2013) did not support the helpful effect of mourning rituals among Greek and British migrant widows in Australia. However, their study found cultural differences in reactions to loss. Greek widows endorsed higher levels of mourning rituals, continuing bonds with the deceased spouse and religious practices than British widows (all p < .001). They, too, reported worse self-rated health, and elevated depressive symptoms and loneliness than British widows. However, except for social support, no significant correlations were found between predictor variables and well-being measures, for either immigrant group. For British, loneliness was correlated negatively to family emotional and instrumental

[1]. This term probably originates in Buddhists texts and in Ayurvedic and traditional Chinese medicine. It refers to an idiom of distress and cultural explanatory model of somatic symptoms often attributed to a dysregulation of "wind flow", a windlike substance which normally courses in the vessels of the body alongside blood (cf. Hinton et al., 2010).

supports and friend emotional support. Depression was related negatively to friend emotional support. For Greek, all well-being outcomes correlated to family emotional and friend emotional supports.

4. Discussion

4.1. Main findings

The present study aimed to provide a systematic review of up-to-date literature on correlates and predictors of prolonged grief and health related outcomes in immigrants and refugees. The review included twelve studies of whose three investigated the prevalence of PGD. This varied widely from 8 to 54% (Craig et al., 2008; Hinton et al., 2013b; Kokou-Kpolou et al. 2017). This broad discrepancy could be mostly explained by the long length of time elapsed since death (M = 28.9, SD = 11.9) in the study sample by Hinton et al. (2013b) which reported the lowest rate. The retrospective reporting of the grief symptoms could have led to anamnestic biases. The two remaining studies reported almost close rates: 41.9–54%. This high prevalence pictured the psychopathological burden of (traumatic) grief experience in immigrants and refugees.

Results pinpointed that prolonged grief correlated with depression, anxiety and worse well-being and health. These results are in straight line with the existing literature (Boelen, 2013; Boelen & Prigerson, 2007; Shear, Simon, Wall et al., 2011). Indeed, finding prolonged grief to relate to most common psychiatric disorders, namely to PTSD, is not surprising, insofar as the deaths resulted mostly from violent circumstances, such as genocides, conflict-war situations, persecution... These traumatic bereavements triggered complex pattern of psychological states and feelings and may explain the overlapping of CG and PTSD intrusion, as noted by Momartin et al. (2004). Interestingly, by using a latent class analysis Nickerson et al. (2014) and Tay et al. (2018) found that a combined CG/PTSD class included PTSD

symptoms related to intrusion, such as intrusive memories, flashbacks, nightmares, psychological or physiological distress to reminders. When examining the impact of CG and PTSD on general mental health (Craig et al., 2008) and postbereavement distress (Hinton et al., 2013b), both studies found that CG explained highly over and above the outcomes' variance than PTSD symptoms. This result is relevant and suggests that grieving process to death may be the detrimental health experience in traumatic immigration-related events. It also suggests that bereaved immigrants and refugees should be prone to re-experience past traumas through pained memories of the deceased close person. As conceptualized by some scholars (Green, 2000; Raphael, 1997; Stroebe, Schut & Finkenauer, 2001), PTSD intrusion focuses on horrifying aspects of traumatic events while bereavement memories concerns the loss per se and the attachment relationship to the death. Even though both psychological states are distinguishable, bereaved immigrants and refugees should re-experience them simultaneously and/or alternatively. Furthermore, results from two included studies (Caspi et al., 1998; Hinton et al., 2013a) draw our attention to the component of somatic symptoms in traumatic grief manifestations among immigrants and refugees who, of note, were mostly from non-Western cultures. Both studies reported persistently high levels of somatic symptoms including blurry vision, dizziness, bodily pain, palpitations, numbness, tinnitus. Reporting such somatic manifestations in non-Western immigrants and refugees is consistent with a abundant literature which noted cultural variation in expression of distress as well as the reference to ethnomedical belief systems to give it sense (e.g. Kirmayer & Young, 1998).

The overall findings from this review regarding risk factors for prolonged grief and health related outcomes in immigrants and refugees are inconclusive. Given to gender, three studies over eight studies found significant association with complicated grief. However, in the study by Craig et al. (2008), data related to the relationship to the deceased person and to time elapsed since the death were not reported, thus inducing potential confounding effect.

Participants in the study by Hinton et al. (2013b) have averaged 28.9 years in timing since the loss and were individuals seeking for professional health care. Thereby, it is stand to reason that this study, as mentioned earlier, contains an anamnestic error; likewise, gender differences in persisting grief symptoms may be influenced by secondary stressors. The third study (Nickerson et al., 2014) found that female were more at risk for comorbid PTSD/PGD, but not for PGD. This implies that the increased vulnerability for female may depend on traumatic events surrounding the bereavement. In sum, it still remains unclear as to whether gender impacts on complicated grief in immigrants and refugees. For age risk factor, data derived from two studies showed that older refugees were more likely to exhibit elevated CG symptoms (Craig et al., 2008; Nickerson et al., 2014). Notwithstanding these data are insufficient to evidence the role of age, it seems that older refugees compared to the yougers have experienced multiple traumas, including traumatic losses which undermined their resilience abilities. Often too, they may have greater adaptation difficulties to their new social environment and customs. Being refugee may be for them a sharp disconnection from their countries, traditions, social networks. In collectivist societies, it seems that reminiscing on ones past life as well as meditation on death and afterlife increased with the age, thereby refugees from non-Western cultures could be more sensitive to revisit past trauma. Regarding education levels and employment status, numerous studies have shown their impact on mental health in refugees (see Hynie, 2017). They also depend partially on integration policy for refugees in resettlement country. Sometimes, many refugees are unemployed for many years and more the length of stay in host country is longer, more they become socially vulnerable. In this review, Kokou-Kpolou et al. (2017) found that bereaved immigrants who have residing in France and Belgium over 10 years exhibited elevated CG symptoms. This is consistent with the study by Gimeno-Feliu et al. (2017) that demonstrated the risk of multimorbidity is twice higher for foreign-born immigrants residing in Spain for 5 years and more than for those

residing for less than 5 years. Another vulnerability factors were pointed out by Kokou-Kpolou et al. (2017), namely sibling position. Indeed, eldest sons are especially affected by bereavement given to the weight of their hierarchy and the enormous expectations placed on them to bury their parent in the dignified way and to manage parental inheritance. These views require further investigation to confirm.

The most potent risk factor evidenced by the present review is the multiple and traumatic deaths. This factor was examined by six studies and, cogently, five showed their direct effect on prolonged grief, PGD/PTSD, depression and disability. Prior clinical analysis support that individuals who dealed with multiple deaths tend to exhibit poorer health outcomes than those who faced to single loss (Rando, 1983, Zisook & Shear, 2009). In individuals who survived to Oklahoma City bombing, in US, Pfefferbaum, Call, Lensgraf et al. (2001) found that those who reported combined high grief scores and PTSD symptomatology presented persistently levels of functional impairment. Indeed, multiple losses lead to what Neimeyer and Holland (2006) called the 'bereavement overload' generating a distressing overflow on abilities to cope. Our readers should be mindeful that in our review study samples that examined multiple and traumatic losses all included at least partially the death of family member. As a result, given to nature of the relationship to the deceased person, the brutality and violence of the death may cause a destructing break-in unabling to symbolize and to call in mind the loss. This depicts a complex trauma generating confusion and erosion of identities and roles, feelings of injustice (Tay et al., 2018) wich in turn worsen the bereavement course and outcomes. It stands to argue that the conventional taxinomy of PTSD may incompletely capture the complexities of such disturbing symptoms (Caspi et al., 1998). According to Bacqué (2003), performing collective mourning rituals is necessary in such traumatic context to disentangle the unresolved grieving process, to drain intrinsic resources in harmonious way to cope. The study by Hinton et al. (2013b) suggests that refugees did not only suffer from a

complex bereavement trauma but also from the impossibility of performing prescribed mourning rituals related to death. Kokou-Kpolou et al. (2017) found that participation in rituals alleviates the grief reactions, albeit the effect size was moderate. Participation in rituals often re-activates and strenghens social support system in adjusting to loss. The study by Panagiotopoulos et al. (2013) revealed the variation in sources of social support depending on cultural background. For British migrants (western country) social support was more provided by friend sources and for Greek migrant (non-western country) it was more provided by family support. It is fair to think that multiple and traumatic losses deprive non-western immigrants and refugees from community and family support and put them in extreme vulnerable position.

4.2. Strengths, limitations and future perspectives

To the best of our knowledge, this systematic review is the first of its kind for providing a comprehensive overview on correlates and risk factors associated with prolonged grief and mental health outcomes in immigrants and refugees. Twelve studies were deemed as qualified for this review. The overall findings demonstrate that empirical research in this field is still in its early stages. One must therefore consider that this review lays the foundations to improve further empirical research on this topic.

We noted several shortcomings, as reflected by the average of our study quality assessment. The first limitation is related to the methodological approach to assessing prolonged grief and co-occurent symptoms. Indeed, although much efforts were undertaken in forward and back translation of measures used, four studies over 9 did not provide psychometric proprieties for grief measure used and half of included studies did not for other outcomes measures. Besides, all studies adopted cross-sectional setting, ten convenience sampling and half self-reporting procedure. These methodological biases and heterogeneity did not allow either to perform a meta-analysis or to draw solid conclusions of our fundings.

The second limitation concerns data study reporting. Two variables are extremely important while conducting study of grief topic: relationship to the lost person and time elapsed since the bereavement. Regarding the second variable, five included studies did not report it. Of the remaining studies, the average time elapsed since the death was 13 years in the study by Panagiotopoulos et al. (2013) and 28.9 in the study by Hinton and colleagues (2013a, 2013b). This large range in timing since the death occured might probably induce memory biases in items' appreciation thus affecting study results. In some cases, it seems that the time since the death(s) and the traumatic events was undistinguishable. However, all multiple deaths did not occur during the conflict-war, genocide or persecution preceding the emigration (e.g. Caspi et al., 1998). The third limitation is holistic and intrinsic to the conceptual, theoretical and empirical framework of the grief approach in traumatized refugees. Yet, the construct of traumatic grief or CG or even PGD was distinctive psychopathological condition distinguishable from PTSD symptomatology (Boelen & van den Bout, 2005; Prigerson et al., 1999, 2009; Shear et al., 2011). Based on the results of the current review, their is a robust trend that there is overlapping symptoms of PGD and PTSD due to the atrocity and violence of death the refugees endured. These considerations arise many questions: do either grief measure or PTSD measure, separately, is sufficient to cover the complexity of such symptoms, sometimes expressed through idioms of distress? Does conservative cutoff of prolonged grief measures (e.g. > 30 for ICG, Shear et al., 2011), with the time criterion of at least 6 or 12 months since the death, is appropriate to diagnose PGD in bereaved refugee population? Should grief reactions in this extremely vunerable population fall within the normative framework of the complicated grief or of the trauma? (Lane & Tribe, 2014). Much efforts are needed to address core issues arisen by these questions. Finally, the fourth limitation is relative to eligibility criteria for this review. We primarely sought to include studies sampling bereaved immigrants, refugees and asylum seekers. In two included studies

(Nickerson et al., 2011; Tay et al., 2018), samples partially included participants who did not experience the death of person (21.6% and 76.3%, respectively), but the type of statistical analysis used did not allow to tease apart the subgroups (e.g. latent class analysis). The choice to including both may have biased the fairness of our results. With these limitations in mind, we convey our readers to interprete this review findings with caution and parsimony.

4.3. Clinical implications

Findings of the current review have valuable clinical implications. They provide useful information wich can be used to refine treatment models for what we called complex traumatic bereavement. It is well investigated that complex PTSD and disturbed grief are more resistive to conventional treatment in non-Western refugees (Boehnlein, 1987). For long decades these disorders were managed, separately. Our results call for an urgent need to innovate therapeutic programs, ideally integrated, which target simultaneous occurrence of prolonged grief and comorbidities (PTSD, anxiety, depression). For instance, Smid et al. (2015) have developed a ʻBrief Eclectic Psychotherapy for Traumatic Grief (BEP-TG)' wich aims to provide treatment for traumatic bereavement combining specific treatment interventions for prolonged grief and comorbidities that may accommodate cultural aspects of bereavement and grief in adult trauma survivors. In addition, they recently created a 'Cultural Assessment of Grief and Grief-Related Psychopathology' in order to explore cultural meaning given by refugees to death and grief they faced to, this to enhance the treatment eff ect (Smid, Groen, de la Rie et al., 2018). One should expect that such innovate tools could contribute to reduce some often pitfalls in application of Western categories in diagnosing and treating psychiatric disorders in refugees (Eisenbruch, 1991). The optimal clinical care might also pay special attention to psychosomatic nature of complex traumatic bereavement symptoms, as component of idioms of distress rooted in symbolic and belief systems (Adansikou, Kokou-Kpolou, Mbassa Menick & Moukouta, 2017; Kirmayer & Young, 1998). Given the results on

social support (Panagiotopoulos et al., 2013), it also appears important to promote social connectedness of bereaved immigrants and refugees with their community members for protecting them against social isolation.

5. Conclusion

This literature review pinpointed correlates and predictive factors of prolonged grief and mental health outcomes in immigrants and refugees who lost of significant others. We found that empirical research in this topic is in its early stages. Findings yielded by this review showed that prolonged grief, combined prolonged grief and PTSD, depression, disability form complex

psychopathological comorbidities requiring therapeutic interventions: medical, psychotherapic and social. These comorbidities are highly influenced by ethnocultural belief systems expressed through somatization and idioms of distress, hence the importance for health care providers to develop intercultural skills in managing such disorders. Results revealed that demographic factors were inconclusive. However there was robust trend showing that traumatic and multiple losses predicted prolonged grief and worse mental health outcomes. With regard to the upsurge of migratory fluxes, of conflict-wars driving million of refugees across the four corners of the globe, it stands right to consider that this topic will draw more and more clinical attention. In this respect, the present literature review layed solid foundations for futur empirical research in this nascent scholarly field.