



The structure and psychosocial correlates of complicated bereavement amongst refugees from West Papua

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Abstract

Purpose Refugees may be at risk of experiencing a complicated form of bereavement. As yet, however, the nosological status of this putative category across cultures remains in question. We apply qualitative and quantitative methods to investigate the manifestations, prevalence, factorial structure and psychosocial correlates of complicated bereavement amongst refugees from West Papua, a population with no past exposure to western concepts of grief or to formal mental health services.

Methods Qualitative methods (focus groups and informant interviews) were used to identify cultural expressions of complicated bereavement derived from international classification systems, that is, DSM 5 persistent complex bereavement disorder (PCBD) and ICD-11 prolonged grief disorder (PGD) in developing a structured interview applied by trained field workers. Participants were adult West Papuan refugees and their offspring recruited from households ($n=486$, response 85.8%) across nine villages in a remote town in Papua New Guinea.

Results The qualitative data obtained from focus groups ($n=20$) and informant interviews ($n=4$) with local psychiatrists supported the cultural validity of complicated bereavement. 16% ($n=78$) of the sample met criteria for PCBD based on DSM-5 criteria and 103 (21%) met criteria for PGD based on ICD-11 criteria. Confirmatory factor analysis yielded a six-factor model of complicated bereavement with a moderately good fit to the data. The model included dimensions of anger/negative appraisal (AN), avoidance/giving up, estrangement from others, and confusion and diminished identity. In contrast, the DSM-5 three-factor model and the ICD-11 two-factor model each yielded a poor fit. Cumulative traumatic losses ($\beta=0.16$, $P=0.03$), duration since displacement [$\beta=0.10$, $P=0.02$] and postmigration living difficulties ($\beta=0.20$, $P=0.01$) were associated with an aggregated index of complicated bereavement, supporting the concurrent validity of the structure identified.

Conclusions Culture and exposure to persecution and displacement may contribute to the content and configuration of the complicated bereavement reaction, an issue that requires recognition in international classification systems and clinical practice.

Keywords Persistent complex bereavement disorder · Prolonged grief disorder · Refugee · ICD-11 · Confirmatory factor analysis · Postmigration living difficulties · Displacement

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Introduction

After a long period of controversy surrounding its nosology [1–4], a category of complicated bereavement has been included in both the DSM5 and ICD11 classifications, represented as persisting complicated bereavement disorder (PCBD) and prolonged grief disorder (PGD), respectively. Nevertheless, the provisional designation of PCBD in DSM5 indicates ongoing doubts concerning the cross-cultural applicability of the category. There is a pressing need, therefore, to investigate whether a category of complicated bereavement (here used in a generic manner) can be

identified across cultures and if so, whether the constellation of symptoms conforms to a meaningful structure. We investigate whether a six-factor model of complicated bereavement (previously identified in the same population, albeit in a different context) can be replicated in an epidemiological study amongst West Papuan refugees living in an isolated region of Papua New Guinea (PNG).

Previous studies of the complicated bereavement constellation have yielded mixed findings. Several studies have identified a two-factor structure comprising separation distress (yearning, searching, and loneliness) and traumatic or emotional distress (numbness, disbelief, distrust, anger, emptiness, and sense of futility about the future) [5–8]. These studies also demonstrated that complicated grief is distinguishable from symptom constellations of depression and anxiety [9, 10]. Other studies, however, have revealed a diversity of symptoms comprising the emotional distress domain, including numbness, feeling stunned, emptiness, mistrust, bitterness over the loss, difficulty accepting the loss, identity confusion, avoidance, and difficulty moving on with life [11]. Notwithstanding ongoing doubts about the underlying structure, a recent meta-analysis of 14 studies amongst bereaved adults from high-income countries recorded a pooled prevalence of PGD of 9.8% [12]. Yet, there is a dearth of epidemiological data extending across culturally diverse populations concerning either the structure or prevalence of complicated bereavement, particularly in populations exposed to extensive traumatic losses.

There are reasons to anticipate that the prevalence of complicated bereavement may be high amongst West Papuan refugees. In the aftermath of the invasion and annexation of West Papua by Indonesia in the 1960s, an indigenous resistance movement engaged in a low-grade armed struggle to achieve national independence. Cumulative evidence indicates that in its efforts to repress the resistance, the occupying military has perpetrated widespread human rights violations including extra-judicial killings and disappearances, political incarceration, torture, atrocities and burning of villages [13–16]. The indigenous population has experienced mass disruptions and displacements from their traditional lands as a result of a program of mass migration of ethnically distinct populations into the territory, together with destruction of agricultural lands by mining ventures, further undermining the cultural integrity of the society [17].

Successive waves of West Papuan refugees have crossed the border into neighbouring Papua New Guinea, the largest group settling in a small border town, Kiunga, the site chosen for the present study. The relocated community faces multiple challenges including extreme geographical isolation, food and water insecurity, fears of hostile incursions across the border, and limited opportunities for education and employment. Health services in the region are rudimentary and there are no agencies providing mental health care

[18]. As a consequence, there is low familiarity amongst the West Papuan resident population about the concepts of complicated bereavement or traumatic stress.

In a previous study amongst West Papuan refugees living in Port Moresby, the capital of Papua New Guinea, we identified a novel six-factor structure of complicated bereavement [19]. Included were the universal elements of yearning/preoccupations, shock/disbelief and behavioural change, but additional domains emerged reflecting anger/negative appraisal, estrangement from others/impairment, and confusion/diminished identity [19]. These latter features were consistent with a cultural syndrome, *Susah Hati* (“Sad Heart”), previously identified in an ethnographic study amongst West Papuan refugees settled in Australia. Refugees with *Susah Hati* exhibited extreme withdrawal and isolation, bitterness and anger, hopelessness, and feelings of alienation/identity confusion [20].

Together, these preliminary observations suggested that complicated bereavement may exhibit not only both universal elements but also reflect culturally specific symptoms across societies and contexts. Specifically, amongst West Papuan refugees, symptoms of distrust, alienation and anger may be accentuated given that the traumatic losses experienced occurred in a setting of pervasive persecution and human rights abuses [13]. Further, it makes sense that there may be a close nexus between traumatic losses and a sense of identity confusion. As indicated, the occupation of West Papuan has undermined all aspects of the traditional, collectivist culture in which personal identity was strongly bound up with the sense of belonging to the ancestral land, the family and wider kinship groups [21]. Feelings of alienation, isolation and identity confusion would be intensified amongst refugees displaced to settings such as Kiunga where they experience long-term isolation, deprivations and insecurity.

Our broad hypothesis, therefore, was that a constellation of complicated bereavement symptoms would be identifiable amongst West Papuan refugees residing in Kiunga comprising universally recognized elements.

Nevertheless, we anticipated that a particular constellation of symptoms would be emphasized to be consistent with the history of cultural disruptions and traumatic losses experienced by this group. We anticipated, therefore, that these context-specific factors would result in symptoms of anger, alienation and identity confusion to exert an influence on the expression of complicated bereavement in this population. The possibility was that the implicit DSM-5 and ICD-11 models may not fit the structure identified amongst West Papuan refugees. To examine these hypotheses, we tested a series of theoretically driven CFAs including the six-factor model identified in our previous Port Moresby West Papuan sample [19] (comprising dimensions of yearning and preoccupations, shock and disbelief, anger and

maladaptive appraisals, interpersonal problems, and identity disturbances), a three-factor DSM5 model (preoccupations/yearning, emotional/reactive distress, interpersonal problems), and a two-factor ICD-11 model (preoccupations/yearning and emotional distress/interpersonal problems). To test the concurrent validity of the structure we identified, we examined its association with relevant psychosocial correlates, that is, the extent of exposure to traumatic losses, the duration of displacement, and the severity of postmigration stressors.

Methods

Sample

We conducted the study in Kiunga between March and September, 2016, recruiting all adults, 18 years and older born in West Papua or the offspring of at least one parent from that territory. Our sampling frame drew on census data collected a year previously by the PNG government identifying all West Papuans living in Kiunga. To update the census, we conducted a house-to-house survey, focusing on the nine villages where West Papuans were concentrated in the Kiunga area. We were unable to contact 115 known adult West Papuans who were absent from the district during the entire duration of our study. Upon further inquiries, virtually all participants who could not be contacted either had relocated to West Papua or elsewhere, yielding a response rate of 85.8%, taking into consideration the absent residents.

Ethics

Ethical permission for the study was provided by the University of New South Wales Human Research Ethics Committee and the Medical Research Council of PNG Ethics Committee.

Field team and procedure

Interviews were conducted by a field team drawn from the West Papuan community and managed by a West Papuan refugee (Moses Kareth) who has worked with our research team on similar projects for several years. Field interviewers were selected based on their fluency in Bahasa Indonesian (the lingua franca of West Papuans), English, and Tok Pisin (the pidgin English widely spoken throughout Papua New Guinea); their status of trust in the community; and their competence and commitment to the project. The team included an equal number of men and women. The team received 3 weeks intensive training under supervision of a clinical psychologist who speaks Bahasa Indonesian. The training program, applied successfully in the preceding Port

Moresby study, focused on interviewing techniques, identification of mental health issues amongst trauma survivors, role-play, and administration of the assessment protocol.

Following training, weekly supervision sessions were conducted via telephone or on-site by the professional team with field workers for the entire study period, extending from March to September 2016.

Measures

Persistent complicated bereavement disorder (PCBD) and prolonged grief disorder (PGD)

The module for complicated bereavement was administered as part of a comprehensive measure of mental health, the Refugee Mental Health Assessment (R-MHAP). The instrument includes a range of other common mental disorders (CMDs) but these were not used in the present analysis [22]. Our initial list of complicated bereavement items was derived from DSM-5 and ICD-11. We interviewed four psychiatrists (out of ten working in PNG) in Port Moresby to inquire whether these items were applicable in the Melanesian culture, noting that there are substantial commonalities in the cultural background of populations across the island of New Guinea. All four psychiatrists endorsed all items, indicating that they were applicable in their daily practices. In addition, two psychiatrists noted contextual variants in the nature and course of prolonged bereavement amongst West Papuans in that feelings and expressions of anger were prominent. We then convened focus groups with West Papuan refugees ($n = 20$) to examine the cultural relevance, content and coverage of items of complicated bereavement. Group members largely endorsed the original list of symptoms but recommended additional symptoms that gave emphasis to particular features of the reaction, especially relating to anger, mistrust, identity confusion, alienation, feelings of isolation, and difficulties in planning for the future. Examples of these items include “*I lost a part of me following the loss*”, “*I was confused about what to do with my life*” and “*I feel like I am stuck in the past*”. Participants also identified a cultural syndrome referred to as *Duka Cita* as the corresponding syndrome in the West Papuan context.

The final module included the original DSM5- and ICD11-derived symptoms plus those recommended by focus group members. Items were rated on a four-point ordinal scale of severity (1 = not at all, 2 = a little, 3 = quite a lot, 4 = extremely) and were applied in that format in the CFAs. To make a provisional diagnosis of complicated bereavement according to DSM5 and ICD11, we collapsed the ordinal scale into a categorical response in which a symptom was regarded as present if assigned the highest two ratings (quite a lot/extreme).

The DSM5 entry criterion was applied involving exposure to at least one death or loss involving a family member and/or close friend in the past 12 months. Those meeting the entry criterion completed all symptom items without the use of skip rules. The analysis, therefore, includes all respondents who completed the complicated bereavement module irrespective of whether they met a full diagnosis according to DSM5 or ICD-11 diagnosis. The symptom pool yielded a high level of internal reliability ($\alpha=0.94$). In our previous study in Port Moresby, we found a high degree of stability of complicated bereavement symptoms over time reflected in no statistical change in the mean symptom score (t1–t2 difference = 6.5, $P=0.398$).

Traumatic losses

Exposure to traumatic losses was assessed using five items from a 31-item trauma event inventory developed for the study in Port Moresby through a process of focus group consultations and individual interviews. The inventory was refined and contextualized by further consultations with key informants from the West Papuan refugee community in Kiunga. Items included traumatic death of family members or loved ones arising from murder, starvation, disease, disappearances and forced separations during periods of conflict. Additional items included being prevented from burying or performing culturally appropriate ceremonies for the deceased.

Postmigration living difficulties (PMLDs)

An inventory based on the Humanitarian Emergency Settings Perceived Needs (HESPER) scale [23] was used to assess the prevalence of common forms of stressors in the community. We adapted the measure to the local culture and context by an extensive series of consultations in which all items were evaluated in focus groups ($n=20$) and by individual informant interviews ($n=4$) undertaken with members of the Kiunga community. The measure comprises 26 items rated on a four-point scale which we collapsed into two categories (0 = no, 1 = yes). Mean scores for individuals were derived by adding responses to all items.

Statistical analysis

We computed a matrix based on bivariate Pearson's correlation coefficients to display inter-correlations between complicated grief items. The prevalence of PCBD and PGD was based on DSM-5 and ICD-11 criteria, respectively. To derive prevalence for symptom-based DSM and ICD diagnoses, we rendered each item into a binary score of 1 (quite a bit, extremely) or 0 (not at all, a little bit).

In confirmatory factor analyses (CFAs) (detailed hereunder), all 18 complicated bereavement items scored in an ordinal manner (rated 1–4) were included. To examine our hypotheses, we tested a series of theoretically driven CFAs including the six-factor model identified in our previous Port Moresby West Papuan sample [19] (comprising dimensions of yearning and preoccupations, shock and disbelief, anger and maladaptive appraisals, interpersonal problems, and identity disturbances), a three-factor DSM5 model (preoccupations/yearning, emotional/reactive distress, interpersonal problems), and a two-factor ICD-11 model (preoccupations/yearning and emotional distress/interpersonal problems).

We examined each of the CFA models for potential misspecifications and made iterative adjustments based on modification indices and normalized residuals (with standardized residuals of 0.20 or above signifying potential errors in model specification) [24].

Factor coefficients and correlations were calculated using a polychoric correlation matrix. In the analysis, we calculated standardized factor loadings and the covariance across factors. In general, a factor coefficient of 0.70 or above is regarded as a reliable indicator of a strongly loading item and a cross-factorial correlation of 0.90 or above indicates an excessively high correlation between factors [25–27]. Given that variables were normally distributed, we applied the maximum likelihood (ML) estimator. Missing data (> 2% on any variable) on any PCBD items were accounted for using ML estimation.

We evaluated model fit using recommended goodness-of-fit and comparative indicators, including a non-significant Chi-square test, the Confirmatory Factor Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Indices of CFI/TLI > 0.95 and a RMSEA < 0.06 are regarded as indicating a good fit between the model and the data. A moderately good fit is indicated by a CFI > 0.90 and a RMSEA < 0.08 [25–27].

Finally, to assess concurrent validity, we applied three separate linear regression models to assess associations of the complicated bereavement total score with (1) the extent of exposure to traumatic losses, (2) the duration of displacement, and (3) the severity of postmigration stressors. Analyses were performed using STATA version 13 [28] and Mplus version 7 [29].

Results

Sociodemographic characteristics

Sociodemographic characteristics of the sample are reported in Table 1. The sample included 470 adults, comprising men (55.9%) and women (44.1%) with a mean age of 35.8 (sd = 0.65) years. Half had completed primary school

Table 1 Mapping of symptoms according to the six-factor, DSM-5 three-factor PCBD, ICD-11 two-factor PGD models

Item	Symptoms	Six-factor model	Persistent complex bereavement disorder (PCBD) three-factor model	Prolonged grief disorder (PGD) two-factor model
1	Have strong feelings (yearnings/longings) for the person who is dead	YP	YP	YP
2	Felt very sorrow and painful about the death	YP	YP	YP
3	Thought a lot about the person who is dead	YP	YP	YP
4	Thought a lot about how or why the person died	YP	YP	YP
5	Had great trouble accepting that the person is gone	SD	ED	ED/IP
6	Felt shocked, stunned, or unable to feel anything	SD	ED	–
7	Had difficulty remembering good things/happy times spent with the person	SD	ED	–
8	Felt bitter or angry about the loss	AN	ED	ED/IP
9	Blamed yourself a lot for the persons death	AN	ED	ED/IP
10	Tried very hard to avoid reminders of the loss	BC	ED	–
11	Felt strong urges to be with the person	BC	IP	–
12	Had difficulty trusting other people since the person's death	BC	IP	–
13	Felt alone or cut off from other people since the person's death	EI	IP	ED/IP
14	Felt that emptiness in your life or that life is meaningless without the person	EI	IP	–
15	Felt unable to cope or do things you normally do without the person	EI	IP	–
16	Felt confused about your role in life	CD	IP	ED/IP
17	Felt that a part of you died with the person	CD	IP	–
18	Had difficulty or been reluctant to plan for the future	CD	IP	ED/IP

DSM-5 Diagnostic and Statistical Manual for Mental Disorder (5th revision), *ICD-11* International Classification of Diseases (11th revision), *PCB* persistent complex bereavement (listed in DSM-5 as a condition for further study), *PGD* prolonged grief disorder, *YP* yearning/preoccupation, *ED* emotional distress, *IP* interpersonal problems, *YP* yearning and preoccupation with the deceased, *SD* shock and disbelief, *AN* anger and negative appraisal, *AB* anger/bitterness, *BC* behavioural change, *EI* estrangement from others and impairment, *CD* confusion and diminished identity

(46.6%) but fewer than one in ten (9.5%) had post-school training or education. Over half (56.9%) were born in West Papua, the remainder (43.1%) being born to West Papuan parents in PNG. Those born in West Papua had lived in Kiunga for a mean of 15.6 (sd = 10.67) years. In relation to residency status, more than half (62.6%) were categorized as displaced persons, 14.6% were PNG citizens, and 2.8% held what is referred to as Permissive Residency Status (PRS) which allows some West Papuans the right to travel between PNG and West Papua but with restrictions. Table 2 reports the prevalence of individual complicated bereavement symptoms. Table 3 presents correlations between complicated bereavement items.

Traumatic loss events

Nearly one-third (28%, $n = 137$) of refugees had been exposed to at least one type of traumatic loss (range 0–15), the most common cause of death being sickness (61%, $n = 287$) and murders ($n = 66$, 14%).

Complicated bereavement

Of the total sample, 16% ($n = 78$) met criteria for PCBD based on DSM-5 criteria and 103 (21%) met criteria for PGD based on ICD-11 criteria.

Postmigration living difficulties (PMLDs)

Respondents reported a mean score of 15.9 (SD = 6.5) on the PMLD measure (range 0–26) where difficulties were rates as moderately serious or very serious problems (Supplementary File 1). Over 80% endorsed problems accessing clean drinking water (90.7%), shortage of food (92.8%), inadequate shelter (80.9%), poverty (92.2%), and provision of aid and support (82.7%).

Confirmatory factor analysis

The DSM-5 three-factor model of PCBD [$\chi^2(132) = 1123.6$, CFI = 0.92, TLI = 0.90, RMSEA = 0.12] and the

Table 2 Prevalence of individual symptoms of complicated bereavement ($n=486$)

Symptoms of PCBD/PGD	Not at all		A little		Quite a lot		Extremely	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1 Have strong feelings (yearnings/longings) for the person who is dead	388	79.8	40	8.2	30	6.2	28	5.8
2 Felt very sorrow and painful about the death	386	79.4	32	6.6	35	7.2	33	6.8
3 Thought a lot about the person who is dead	381	78.4	44	9.1	31	6.4	30	6.1
4 Thought a lot about how or why the person died	383	78.8	40	8.2	29	6.0	34	7.0
5 Had great trouble accepting that the person is gone	399	82.1	50	10.3	27	5.6	10	2.0
6 Felt shocked, stunned, or unable to feel anything	414	85.2	45	9.3	17	3.5	10	2.0
7 Had difficulty remembering good things/happy times spent with the person	402	82.7	48	9.9	24	4.9	12	2.5
8 Felt bitter or angry about the loss	408	84.0	42	8.6	25	5.1	11	2.3
9 Blamed yourself a lot for the persons death	420	86.4	41	8.4	14	2.9	11	2.3
10 Tried very hard to avoid reminders of the loss	408	84.0	52	10.7	15	3.1	11	2.2
11 Felt strong urges to be with the person?	414	85.2	36	7.4	21	4.3	15	3.1
12 Had difficulty trusting other people since the person's death	404	83.1	50	10.3	21	4.3	11	2.3
13 Felt alone or cut off from other people since the person's death	419	86.2	44	9.1	18	3.7	5	1.0
14 Felt that emptiness in your life or that life is meaningless without the person	432	88.9	33	6.8	15	3.1	6	1.2
15 Felt unable to cope or do things you normally do without the person	431	88.7	34	7.0	14	2.9	7	1.4
16 Felt confused about your role in life	436	89.7	38	7.8	7	1.4	5	1.1
17 Felt that a part of you died with the person	444	91.4	31	6.4	3	0.6	8	1.6
18 Had difficulty or been reluctant to plan for the future	434	89.3	41	8.4	7	1.4	4	0.9

ICD-11 PGD two-factor model [$\chi^2(34) = 429.8$, CFI = 0.94, TLI = 0.92, RMSEA = 0.15] each yielded a poor fit to the data, indicated by the high RMSEA values. The six-factor model previously identified amongst West Papuans in Port Moresby yielded a moderately good fit ($\chi^2(120) = 661.2$, CFI = 0.95, TLI = 0.94, RMSEA = 0.07). Table 4 reports the goodness-of-fit statistics associated with the CFA models tested.

Table 5 presents standardized factor loadings for the six-factor model. Most items loaded strongly on the appropriate factors (with standardized factor coefficients/loadings ranging from 0.81 to 0.98). The yearning/preoccupations (YP) dimension comprised items reflecting persistent yearnings/longings, emotional pain/sorrow, and preoccupations with the deceased and with the circumstances surrounding the death. Difficulties accepting the death, shock and disbelief, and resistance to reminiscing about the deceased all exhibited strong loadings on the shock/disbelief factor (SD). The anger/negative appraisal (AN) dimension comprised feelings of anger/bitterness and negative appraisals. Avoidance of reminders, difficulties trusting others, and desire to die, all loaded strongly on the subdomain of behavioural change (BC). Detachment, emptiness, and social impairment loaded strongly on the factor of estrangement from others and impairment (EI). Confusion, difficulties in planning for the future, and sense of diminished identity in turn loaded strongly on the confusion and diminished identity (CD) factor.

Concurrent validity

As a test of concurrent validity, we assessed the associations of the complicated bereavement total score with (1) the extent of exposure to traumatic losses, (2) the duration of displacement (number of years displaced), and (3) the severity of postmigration stressors. Each predictor variable showed statistical associations with complicated bereavement (traumatic loss, $\beta = 0.16$, $SE = 0.08$, $P = 0.03$; PMLD ($\beta = 0.20$, $SE = 0.04$, $P = 0.20$; duration of displacement, $\beta = 0.10$, $SE = 0.02$, $P = 0.02$). Covariates of age, gender, employment and marital status did not contribute to the regression ($P > 0.05$).

Discussion

The key finding from our study is that although the symptoms of complicated bereavement were found to be consistent with that of DSM-5, additional culturally specific features were accentuated amongst West Papuans including anger/negative appraisal, behavioural changes, estrangement and identity confusion. Notably these features are consistent with those recorded in our previous qualitative research amongst the West Papuans resettled in Australia which identified a cultural syndrome, Susah Hati, in this population [20]. In our CFA analyses, neither the DSM-5 three-factor nor the ICD-11 two-factor structures of complicated

Table 3 Correlation matrix of complicated bereavement item pool

	PCBD_1	PCBD_2	PCBD_3	PCBD_4	PCBD_5	PCBD_6	PCBD_7	PCBD_8	PCBD_9	PCBD_10	PCBD_11	PCBD_12	PCBD_13	PCBD_14	PCBD_15	PCBD_16	PCBD_17	PCBD_18	
PCBD_1	1.00																		
PCBD_2	0.88*	1.00*																	
PCBD_3	0.89*	0.93*	1.00*																
PCBD_4	0.87*	0.91*	0.93*	1.00*															
PCBD_5	0.79*	0.80*	0.82*	0.82*	1.00														
PCBD_6	0.70*	0.72*	0.75*	0.73*	0.85*	1.00													
PCBD_7	0.73*	0.72*	0.75*	0.73*	0.79*	0.78*	1.00												
PCBD_8	0.76*	0.74*	0.81*	0.79*	0.78*	0.79*	0.78*	1.00											
PCBD_9	0.70*	0.67*	0.73*	0.71*	0.77*	0.72*	0.77*	0.78*	1.00										
PCBD_10	0.68*	0.71*	0.73*	0.76*	0.69*	0.64*	0.71*	0.74*	0.73*	1.00									
PCBD_11	0.75*	0.75*	0.78*	0.77*	0.75*	0.68*	0.70*	0.73*	0.69*	0.69*	1.00								
PCBD_12	0.77*	0.76*	0.81*	0.78*	0.80*	0.74*	0.72*	0.79*	0.79*	0.72*	0.82*	1.00							
PCBD_13	0.68*	0.68*	0.71*	0.69*	0.73*	0.64*	0.72*	0.73*	0.79*	0.70*	0.69*	0.75*	1.00						
PCBD_14	0.67*	0.65*	0.65*	0.66*	0.68*	0.61*	0.64*	0.63*	0.75*	0.64*	0.69*	0.69*	0.77*	1.00					
PCBD_15	0.66*	0.66*	0.67*	0.67*	0.72*	0.66*	0.72*	0.72*	0.72*	0.62*	0.72*	0.73*	0.80*	0.82*	1.00				
PCBD_16	0.62*	0.59*	0.62*	0.58*	0.62*	0.65*	0.63*	0.67*	0.68*	0.60*	0.66*	0.68*	0.75*	0.79*	0.82*	1.00			
PCBD_17	0.59*	0.59*	0.60*	0.57*	0.61*	0.62*	0.55*	0.63*	0.62*	0.60*	0.67*	0.65*	0.67*	0.76*	0.76*	0.79*	1.00		
PCBD_18	0.64*	0.63*	0.66*	0.63*	0.69*	0.64*	0.67*	0.69*	0.71*	0.65*	0.69*	0.71*	0.78*	0.78*	0.81*	0.85*	0.78*	1.00	

*All correlation coefficients between PCBD items are significant at $p < 0.01$

Table 4 Goodness-of-fit indices for confirmatory factor analytic models tested

Models	Goodness-of-fit statistics					
	χ^2	<i>df</i>	<i>P</i>	CFI	TLI	RMSEA
Six-factor model	661.20	120	< 0.001	0.95	0.94	0.07
DSM-5 PCB: three-factor model	1123.56	132	< 0.001	0.92	0.90	0.12
ICD-11 PGD: two-factor model	429.76	34	< 0.001	0.94	0.92	0.15

PCB persistent complex bereavement, *PGD* prolonged grief disorder, χ^2 Chi square, *df* degree of freedom, *CFI* Comparative Fit Index, *TLI* Tucker–Lewis Index, *RMSEA* root mean square error approximation

Table 5 Standardized factor loadings for the six-factor confirmatory factor analytic model of complicated bereavement in West Papuan refugees living in Kiunga (*n* = 486)

Item content	Six-factor model of complicated bereavement					
	1 (YP)	2 (SD)	3 (AN)	4 (BC)	5 (EI)	6 (CD)
1 Have strong feelings (yearnings/longings) for the person who is dead	0.92					
2 Felt very sorrow and painful about the death	0.95					
3 Thought a lot about the person who is dead	0.98					
4 Thought a lot about how or why the person died	0.95					
5 Had great trouble accepting that the person is gone		0.93				
6 Felt shocked, stunned, or unable to feel anything		0.89				
7 Had difficulty remembering good things/happy times spent with the person		0.87				
8 Felt bitter or angry about the loss			0.89			
9 Blamed yourself a lot for the persons death			0.88			
10 Tried very hard to avoid reminders of the loss				0.81		
11 Felt strong urges to be with the person?				0.87		
12 Had difficulty trusting other people since the person's death				0.91		
13 Felt alone or cut off from other people since the person's death					0.88	
14 Felt that emptiness in your life or that life is meaningless without the person					0.88	
15 Felt unable to cope or do things you normally do without the person					0.92	
16 Felt confused about your role in life						0.92
17 Felt that a part of you died with the person						0.85
18 Had difficulty or been reluctant to plan for the future						0.92

YP yearning and preoccupation with the deceased, *SD* shock and disbelief, *AN* anger and negative appraisal, *BC* behavioural change, *EI* estrangement from others and impairment, *CD* confusion and diminished identity

bereavement yielded a good fit to the data. The findings, therefore, not only provide some endorsement of the universal elements of complicated bereavement in this group but also underscore the influence of culture and the context of persecution and displacement in shaping the content and structure of the reaction pattern.

Strengths of the study were that we undertook a systematic qualitative and quantitative approach to adapting and developing our complicated bereavement measure. Limitations of the study are that it is restricted to one locality, indicating the need for further inquiries across cultures and contexts. We cannot be certain how many of the deaths reported were related to the ongoing conflict in West Papua, although the major cause cited, illness, is often directly or indirectly related to the neglect and discrimination that the indigenous persons experience. In addition, we relied on

retrospective reports of losses which could be subject to anamnestic biases.

Our study recorded a prevalence of 16% for PCB and 21% for PGD. Our estimates are higher compared to the prevalence of 10% found in the general bereaved adult population in high-income settings [12].

More broadly, our study highlights the relevance of making a diagnosis of complicated bereavement in the refugee field. Between 16 and 22% of the sample of refugees met criteria for a diagnosis depending on which classification (DSM5 or ICD11) was used. Yet, there is a remarkable dearth of research into complicated bereavement in the modern refugee literature, a possible outcome of the overweening preoccupation with the diagnosis of posttraumatic stress disorder (PTSD) in the field. As a consequence, there are no systematic studies examining

psychological therapies or psychosocial interventions that focus specifically on complicated bereavement amongst refugees although there has been some interest in this area in general civilian populations [30–36]. There is a pressing need, therefore, to formulate and trial culturally congruent approaches to psychological interventions for complicated bereavement for refugees from a diversity of backgrounds.

In addition, our study identified traumatic losses, postmigration living difficulties, and the length of displacement as being associated with the overall symptoms of complicated bereavement, providing some indication of the concurrent validity of the category. It is plausible that the combination of past losses compounded by the stress of living under protracted conditions of displacement contributed to increased vulnerability to pathological grief.

Although our findings provide broad support for the cross-cultural validity of the construct of complicated bereavement, the emphasis given to certain symptoms is noteworthy, underscoring the importance of the background culture and context in which traumatic losses occur. The variation in emphasis is reflected in the six-factor model which broadly replicated our findings amongst West Papuans in an urban resettlement setting. The dimensions identified in the model are readily interpretable within the history and context of the West Papuan community. Specifically, in a setting of prolonged persecution, it would be anticipated that anger and mistrust would be a prominent outcome of traumatic losses. A similar close nexus between grief and anger has been shown in neighbouring Timor-Leste [37], a country that also has been exposed to persecution during a long period of Indonesian occupation. Identity confusion figured prominently in the six-factor model, a finding that is consistent with the erosion of the traditional, collectivist culture in West Papua. The long-term thwarting of national aspirations and the influx of large numbers of ethnically different populations into the territory would further undermine the sense of identity of refugees, as would the experience of prolonged exile in a remote village across the border from the homeland. In general, our findings have wider implications for the nosology of mental disorders in suggesting that cultural, historical and contextual factors may influence the expression and emphasis given to symptoms across diagnostic categories.

Conclusions

We found an apparently high prevalence of complicated bereavement in this refugee population from West Papua. In addition, our findings broadly replicated the six-factor model of complicated bereavement identified in our previous study amongst West Papuan refugees residing in an urban setting in PNG. Taken together, these findings offer

broad support for the importance of including a category of complicated bereavement in major classification systems but also highlight the need to identify and describe culturally specific reactions based on influences related to culture and the context in which losses occur. Further research is needed amongst other refugee groups and cultures to examine whether the variant of complicated bereavement we have identified applies beyond the West Papuan refugee community.

Compliance with ethical standards

Conflict of interest None.

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