

## Fear of Cultural Extinction and Psychopathology Among Mandaean Refugees: An Exploratory Path Analysis

Angela Nickerson,<sup>1</sup> Richard A. Bryant,<sup>1</sup> Robert Brooks,<sup>2</sup> Zachary Steel,<sup>2</sup> & Derrick Silove<sup>2</sup>

<sup>1</sup> School of Psychology, University of New South Wales, NSW, Australia

<sup>2</sup> School of Psychiatry, University of New South Wales, NSW, Australia

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### Correspondence

Angela Nickerson, BA (Hons), School of Psychology, University of New South Wales, NSW 2052, Australia.

Tel.: 61 2 9385 3520;

Fax: 61 2 9385 3641;

E-mail: anickerson@psy.unsw.edu.au

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The Mandaeans are a small religious community originating from Iraq and Iran who are facing the possibility of cultural extinction within the next few generations. This study aimed to examine the relationships between life experiences, psychopathology and fear of cultural extinction in Mandaean refugees. A survey was conducted of 315 adult Iraqi Mandaean refugees living in Australia. Past traumatic experiences and current resettlement difficulties were assessed. Mental health outcomes were also examined, including measures of posttraumatic stress disorder (PTSD) and depression. Fear of cultural extinction was measured by items developed in consultation with the Mandaean community. A path analysis was employed to investigate the relationship between trauma, living difficulties, PTSD, depression, and fear of cultural extinction. Results indicated that trauma and living difficulties impacted indirectly on fear of cultural extinction, while PTSD (and not depression) directly predicted levels of anxiety about the Mandaean culture ceasing to exist.

The current findings indicate that past trauma and symptoms of posttraumatic stress contribute to fear of cultural extinction. Exposure to human rights violations enacted on the basis of religion has significant mental health consequences that extend beyond PTSD. The relationship between perception of threat, PTSD, and fear of cultural extinction is considered in the context of cognitive models of traumatic stress. Government immigration policy must prioritize the reunification of small, endangered groups to sustain cultural traditions. Treatment interventions implemented with cultural groups facing extinction should take into consideration anxiety about loss of culture.

Globalization, mass conflict, and large-scale population movements pose unprecedented challenges to maintaining a sense of cultural identity in the modern world [1–5]. Theorists have recognized the negative impact of these factors on the cultural integrity of persecuted and displaced groups, for example, by documenting the deleterious effects of white colonization and subsequent violence and maltreatment on the languages and cultural traditions of the Australian Aborigines [6,7]. Research undertaken since the Holocaust has also highlighted the impact of threats to the Jewish culture such as the symbolic and practical implications of the loss of Yiddish [8] and the impact of assimilatory practices on Jewish religious, cultural, and ethnic identities [9]. Research on migration

indicates that loss of culture is a key concern for many individuals and families who resettle in a new country [e.g., 10,11]. The potential for loss of cultural identity may be compounded amongst refugee groups who are faced with the dual threats of past and ongoing persecution in their home country and difficulties in preserving their cultural identity in countries of resettlement. For small minority groups with unique traditions, the threat to the very existence of their identity in the country of origin and the wide dispersal of members of the community across the world creates the real risk of what we refer to here as “cultural extinction.” We define cultural extinction as the loss of elements that are unique and vital to the identity of a specific cultural group, including

language, religious beliefs, rituals, and customs. As yet, although research has focused on a range of factors that influence the psychosocial adaptation of refugees [12], no study has inquired into the relationship between fear of cultural extinction and relevant mental health outcomes.

Most studies amongst refugees have focused on the impact of past traumatic events on subsequent psychological functioning [13]. The types of psychopathology recorded across ethnic and cultural groups include depression and various anxiety disorders, most commonly posttraumatic stress disorder (PTSD), but also generalized anxiety disorder and panic disorder [14–19]. In addition to exposure to past traumas, difficulties in the resettlement process also affect psychiatric outcomes [20–22]. Challenges associated with sustaining culture, for example, accessing foods appropriate for one's religion, represent a component of the resettlement difficulties that contribute to poorer mental health outcomes [e.g., 21,23]. Eisenbruch [24] has proposed the construct of cultural bereavement to conceptualize the mental health impact of the special sense of loss of traditions experienced by refugees that is not encompassed by Western notions of grief and PTSD. He argues that certain reactions commonly reported by refugees, and often diagnosed as part of PTSD and/or depression, represent grief following disconnection from one's culture. The concepts of cultural extinction and cultural bereavement are similar in their focus on reactions related to the loss of cultural traditions, however they differ in that cultural extinction refers not only to disconnection from one's cultural base as a function of immigration, displacement or assimilation, but the fear that one's cultural identity and continued existence is under threat. This study extends this line of research to a community that is challenged by the real threat of cultural extinction.

There are reasons to anticipate an interaction between actual threats of extinction and levels of PTSD symptoms. This relationship may manifest in one of two ways. One possibility is that fear of cultural extinction may contribute to PTSD, such that persons who have greater fear that their culture will cease to exist in the future exhibit higher levels of symptomatology. One way in which this might occur is if an individual experiences a sense of loss of connection and social support that may be associated with cultural extinction or erosion. Research on posttraumatic stress reactions highlights the importance of social support in buffering the impact of traumatic events [25]. It is therefore possible that the perceived or actual removal of this sense of connectedness may make an individual more vulnerable to symptoms of PTSD. An alternative path is that symptoms of PTSD may contribute to fear of cultural extinction. Cognitive models of posttraumatic stress highlight the role of threat appraisal in the maintenance

of symptoms of PTSD [26,27]. The overestimation of the probability and consequences of a traumatic event occurring in the future, as observed in persons with PTSD [27], may accentuate for fear of cultural extinction. The perception of threat to one's cultural group derived from frequent reports of human rights violations may therefore be exacerbated by appraisals of danger related to PTSD. This study investigates these two possibilities: first that fear of cultural extinction may contribute to psychological distress, and secondly that reasonable fears for the future of the cultural group may be compounded by past trauma experiences and symptoms of traumatic stress.

The Mandaeans are a group currently facing the risk of cultural extinction. Until recently most Mandaeans resided in Iran and Iraq, with the total worldwide numbering approximately 60,000 to 70,000 persons [28,29]. The Mandaeans adhere to an ancient pre-Christian religion thought to be the last surviving Gnostic faith [30–32]. During the period of contemporary conflict in Iraq since the onset of the 2003 war, Mandaeans have been systematically persecuted with repeated reports appearing that members are victim to murder, kidnapping, forced conversion, and forced circumcision [28,33–35]. This campaign of ethnic cleansing has forced many Mandaeans to flee Iraq, resulting in the displacement of the majority of the population to neighboring and Western countries [32].

Resettlement in other countries has introduced new challenges for the Mandaean sense of cultural identity. For example, contrary to the dictates of the Mandaean tradition, marriages outside the religion have been common in countries of recent resettlement [35]. As the theology specifies that both one's parents must be Mandaean, children of mixed-religion marriages are not considered part of the community [36]. Together with the additional impact of the loss of life sustained in campaigns of persecution, particularly in contemporary Iraq, there has been a significant decrease in the overall number of persons identified as Mandaean. As a consequence, there are legitimate fears amongst Mandaean followers that the religion and culture will become extinct within the next few generations.

Only one previous study has been undertaken amongst Mandaean refugees. This study documented the deleterious effect of restrictive refugee policies on the mental health of this group. Specifically, prolonged detention in immigration centers and being afforded only temporary protection visas were both associated with elevated levels of psychiatric morbidity [37]. The aim of this study, based on a further community survey, was to explore the relationship between past trauma, current resettlement difficulties, mental disorders such as depression and PTSD and fear of cultural extinction.

**Table 1** Sample demographics

|                              | No. (%) of subjects |
|------------------------------|---------------------|
| Gender                       |                     |
| Male                         | 150 (47.5)          |
| Female                       | 165 (52.5)          |
| Age (years, mean [SD])       | 37.7 (14.7)         |
| Education (years, mean [SD]) | 11 (3.8)            |

## Method

### Participants

Study participants ( $N = 315$ ) took part in a cross-sectional survey of Mandaean refugees residing in Sydney, conducted in 2006–2007. As no census data were available, a list of individuals and families in the Sydney area (numbering 367 persons) was obtained from community leaders. All potential participants were then invited to take part in the survey with 52 persons declining to participate (response rate = 86%). Demographic information on the sample is presented in Table 1.

### Procedure

In initial focus groups conducted with community representatives, it became evident that the possibility that the Mandaean culture and religion would cease to exist in the near future was a key fear in the Mandaean community. Common beliefs regarding possible factors leading to extinction were documented as part of this process. We then developed items assessing both fear of cultural extinction and relevant associated beliefs. The research team checked with reconstituted focus groups to ensure that the items were accurate in depicting the most prevalent and important fears and that the wording was culturally appropriate.

Three bilingual (English and Arabic) Mandaean research assistants administered survey measures in interview form in Arabic, with questions and responses being read aloud and clarification provided as necessary. Written consent was obtained from participants, and interviews took place in participants' homes. Participants were reimbursed \$A50 for their time, and those in need of mental health care were referred to a specialist torture and trauma rehabilitation service located in Sydney.

### Measures

Measures reported in this study formed part of a larger questionnaire battery. All measures were translated into Arabic and independently back-translated into English with discrepancies being rectified by the translators,

research assistants and the research team [38]. Demographic information including age, gender, and years of education was collected.

Fear of cultural extinction was assessed by the five items developed for this study. Participants first rated how worried they were that the Mandaean religion and culture would cease to exist in the future (1 = *not at all worried*, 4 = *extremely worried*). Responses to this item were used in statistical modeling to represent fear of cultural extinction. Four additional dichotomous items assessed participants' beliefs regarding the reason for this potential extinction: "The Mandaean religion is closed to others," "The Mandaean community is spread worldwide," "Mandaeans are being persecuted," and "Mandaeans are the target of genocide" (*yes/no* response options).

Difficulties associated with the resettlement process were assessed using the 19-item Post Migration Living Difficulties Checklist (PMLD) [22,39,40]. This scale examines the extent to which postmigration challenges, such as insecure visa status, being unable to return home in an emergency, limited access to health care, loneliness, and financial stressors had been of concern to the individual over the past twelve months. Three additional postmigration stress items were generated for the current study in consultation with the Mandaean community: "Lack of organized social activities for your community," "Refused permission to perform necessary religious rituals," and "People not recognizing your religion as a legitimate religion." Items were rated on a five-point Likert-type scale (0 = *not a problem*, 4 = *a very serious problem*). Items scored as a serious or very serious problem were considered positive responses, yielding a total count of living difficulties. The scale has been found to distinguish between asylum seekers and refugees with secure and insecure residency status and has been consistently identified as a predictor of mental health amongst displaced populations [22,23,37].

Exposure to trauma and symptoms of PTSD were assessed using the Harvard Trauma Questionnaire (HTQ) [41]. This 32-item scale consists of two 16-item subscales. The first indexes exposure to 16 types of traumatic events commonly experienced by refugees, and provides a count of types of traumas to which the individual has been exposed. Seven additional trauma categories were identified in consultation with community members and included in the scale: armed robbery, destruction of belongings or business, arson, forced religious conversion, attack with explosives, and injury due to war. The second subscale measures symptoms of PTSD, with participants rating each symptom on a four-point Likert scale in terms of how troubled they were by the symptom in the past week (1 = *not at all*, 4 = *extremely*). A continuous

measure of PTSD symptoms derived from this scale was used for modeling (see below), with diagnostic estimates provided by a DSM-IV derived algorithm [42].

A version of the Hopkins Symptom Checklist adapted for refugees (HSCL-25) [43] was also employed. This measure consists of two subscales assessing anxiety and depression. Only the 15-item depression subscale was used in the current study. Symptoms of depression were measured on a four-point scale in terms of how much they troubled the participant in the past week (1 = *not at all*, 4 = *extremely*). A continuous index of symptoms of depression was used for the purposes of statistical modeling, with a DSM-IV algorithm used to indicate diagnosis [42].

### Statistical Methods

Preliminary analyses revealed that the data were clustered within family groups. Significant clustering was found for trauma exposure (intraclass correlation coefficient [ICC] = 0.22,  $P < 0.001$ ), PTSD (ICC = 0.35,  $P < 0.001$ ) and depression (ICC = 0.22,  $P < 0.001$ ). Path analysis controlling for the effects of family clustering was conducted using the maximum likelihood estimate method in Mplus 5.1 (Muthén & Muthén, 2006).

The basic analytical strategy involved the construction of a saturated model, with theoretical considerations driving the ordering of variables such that prior trauma exposure and current stressors preceded psychopathology. Three models were examined. Two tested the possibility that fear of extinction impacted on psychological disorders (Models 1 and 2), and one tested the reverse; that psychological disorders predicted fear of cultural extinction (Model 3). Non-significant pathways were then removed serially, with the least significant pathway being removed at each step to refine the model. This process continued until a structural model with all paths significant was obtained.

Evaluation of model fit was based on chi square, with a significance level of less than 0.05 indicating inadequate fit, plus the recommended minimal set of fit indices including the Standardized Root Mean Square Residual (SRMR < 0.1); a Root Mean Square Error Approximation (RMSEA < 0.05), Comparative Fit Index (CFI  $\geq$  0.90), and the Tucker–Lewis Index (TLI  $\geq$  0.95) [44–46]. Given the sample size, chi-square was considered the key indicator of model fit.

In Model 1, it was specified that life experiences (trauma and living difficulties) would predict fear of extinction, which would predict mental disorders (PTSD and depression) ( $\chi^2[3] = 5.62$ ,  $P = 0.132$ , CFI = 0.994; TLI = 0.981, RMSEA = 0.053, SRMR = 0.032). In Model 2, it was specified that life experiences (trauma

and living difficulties) and fear of extinction would covary and predict mental disorders (PTSD and depression) ( $\chi^2[4] = 14.06$ ,  $P = 0.007$ , CFI = 0.975; TLI = 0.944, RMSEA = 0.090, SRMR = 0.079). Neither model in which fear of extinction predicted psychological outcomes was satisfactory, as in both models the relationship between fear of extinction and psychological disorders (PTSD and depression) was non-significant. This resulted in psychological disorders becoming disconnected from trauma exposure and living difficulties, which is inconsistent with theory and previous research. Furthermore, the non-significant relationship between PTSD, depression and fear of extinction was not reflective of the conceptualization of fear of extinction as an anxiety-based construct. Thus, analyses focused on Model 3, which examined fear of cultural extinction as an outcome of traumatic experiences and living difficulties mediated by the psychological processes of depression and posttraumatic stress.

## Results

### Reasons for Feared Cultural Extinction

Rates of endorsement of the extinction index were: 39 (12.5%) of participants were not at all worried that the Mandaean religion and culture would cease to exist in the future, 61 (19.4%) were a little worried, 73 (23.2%) were quite worried and 140 (44.4%) were extremely worried. Possible causes were endorsed as follows: the Mandaean religion is closed to others: 56 persons (17.9%), the Mandaean community is spread worldwide: 180 persons (57.9%), Mandaean are being persecuted: 283 persons (91%), and Mandaean are the target of genocide: 227 persons (73%).

### Trauma Exposure

Participants were exposed to a mean of 3.5 types of traumatic events. Many of the traumas reported by participants reflected human rights violations specifically targeting Mandaean on the basis of religion. Approximately half of participants had been close to death ( $N = 156$ , 49.8%), while over one-third had witnessed the murder ( $N = 123$ , 39.3%) or unnatural death ( $N = 130$ , 41.5%) of family or friends. Approximately one-fifth had had been imprisoned ( $N = 59$ , 18.8%) or had their belongings or business destroyed ( $N = 69$ , 22.1%). A substantial minority had also experienced arson ( $N = 36$ , 11.4%), attack with explosives ( $N = 20$ , 6.4%), forced religious conversion ( $N = 31$ , 10.0%), forced marriage to a member of another religion ( $N = 11$ , 3.5%).

**Table 2** Frequency and type of living difficulties reported to be “serious” or “very serious”

| Living difficulties   | No. (%) of participants experienced |
|---|-------------------------------------|
| Worry about family back home  | 244 (79.5)                          |
| Unable to return home in an emergency                               | 193 (64.1)                          |
| Communication difficulties  | 149 (47.8)                          |
| Lack of access to places where you can conduct religious ceremonies | 142 (45.7)                          |
| Loneliness and boredom  | 122 (39.1)                          |
| Not being able to find work   | 120 (38.7)                          |
| Not enough money to buy food, pay rent or buy necessary clothes     | 119 (38.0)                          |
| Being fearful of being sent back to country of origin in future     | 106 (34.4)                          |
| Separation from your family   | 99 (32.2)                           |
| Worries about not getting access to treatment for health problems   | 90 (29.2)                           |
| Lack of access to foods appropriate for your religion               | 79 (25.2)                           |
| Lack of organized social activities for your community              | 68 (21.9)                           |
| Refused permission to perform necessary religious rituals           | 68 (21.7)                           |
| People not recognizing your religion as a legitimate religion       | 51 (16.3)                           |
| Bad working conditions  | 48 (15.9)                           |
| Difficulties obtaining government help with welfare                 | 36 (11.6)                           |
| Difficulties obtaining help from charities                          | 28 (9.1)                            |
| Living difficulties (mean [SD])                                     | 4.74 (3.51)                         |

### Current Living Difficulties

Participants reported experiencing a mean of 4.7 living difficulties at a serious or very serious level. As indicated in Table 2, the most commonly reported difficulties were worry about family back home and being unable to return home in an emergency.

### Mental Health

Participants reported elevated levels of psychological disorders, with 107 persons (34%) meeting criteria for depression (mean [SD] symptom score = 1.81 [0.70]) and 72 individuals (22.9%) meeting criteria for PTSD (mean [SD] symptom score = 1.86 [0.76]).

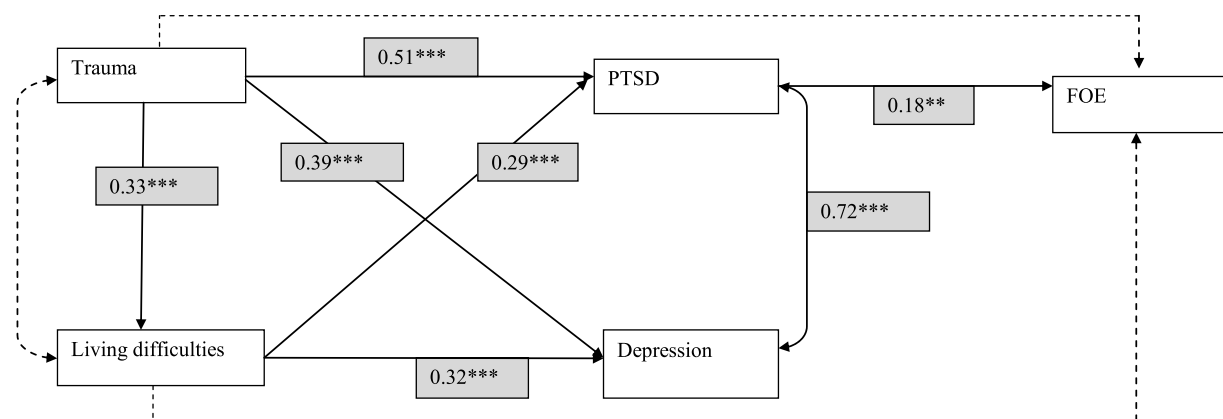
### Path Analysis

The null (saturated) model yielded inadequate fit ( $\chi^2[2] = 3.96$ ,  $P = 0.138$ , CFI = 0.995, TLI = 0.977, RMSEA = 0.056, SRMR = 0.024) as evidenced by a RMSEA value greater than 0.05 [46]. The final model (Model 3) is displayed in Figure 1 with solid lines indicating significant paths and their associated standardized path coefficients, and dotted lines representing removed (nonsignificant) paths. Statistics for the final model reflected a good fit ( $\chi^2[3] = 4.40$ ,  $P = 0.221$ , CFI = 0.997; TLI = 0.989, RMSEA = 0.039, SRMR = 0.023). Trauma exposure and current living difficulties were placed early in the model. The correlation between traumatic events

and living difficulties was replaced by a path from traumatic experiences to living difficulties. This was suggested in the modification indices and is consistent with the order of participants' experiences. Both trauma and living difficulties predicted PTSD and depression, but did not directly predict fear of extinction. PTSD directly predicted fear of extinction, while there was no direct relationship between depression and fear of extinction.

### Discussion

To our knowledge, this is the first study to investigate fear of cultural extinction in a refugee group threatened by ethnic cleansing. The endangerment of the Mandaean culture and religion emerged as a salient concern for Mandaean refugees resettled in Sydney, with possible reasons such as the religion being closed to others, the dispersal of Mandaeans worldwide, persecution and genocide attracting high rates of endorsement. Participants in this study reported a number of traumatic events and current living difficulties that were consistent with the religious persecution of Mandaeans in Iraq, as well as concerns about sustaining their cultural and religious traditions in Australia. The current findings indicate that there exists a relationship between these life experiences, mental health, and beliefs about the maintenance of cultural identity. More specifically, path analyses revealed that fear of cultural extinction was directly predicted by PTSD, but not depression, and indirectly predicted by



**Figure 1** Path model of relationships between trauma, living difficulties, PTSD, depression, and fear of cultural extinction (FOE) \* $P < 0.05$ , \*\* $P < 0.01$ , and \*\*\* $P < 0.001$ .

both past traumatic experiences and current living difficulties, mediated by PTSD.

The current findings indicated that exposure to traumatic events directly predicted PTSD and depression in Mandaean refugees. These results provide further support for the dose-response relationship between trauma and psychological disorders that has been documented in refugee groups [47–50]. Living difficulties also significantly contributed to both PTSD and depression. These results are in accordance with recent findings suggesting that the postmigration environment has a considerable impact on refugee mental health outcomes [20–22]. The strong correlation between PTSD and depression is also consistent with research indicating high levels of comorbidity between these disorders in refugees [51]. The relationship between past trauma and fear of cultural extinction suggests that exposure to traumatic events contributes to anxiety regarding the future of one's culture. In the recent wave of persecution in Iraq, Mandaeans have been subject to traumas such as murder, rape, forced circumcision, forced conversion, and forced marriage to members of other religions [33,34]. Many participants in this study had personally experienced or witnessed human rights violations enacted with the intention of threatening their religious integrity [32]. Exposure to events that directly harmed Mandaeans or violated their religious beliefs may have contributed to the recognition of threat regarding the future of Mandaeanism by drawing attention to the vulnerability of the community in the face of persecution.

The impact of trauma exposure on fear of cultural extinction was mediated by posttraumatic stress symptoms, while the hypothesis that fear of extinction would contribute to PTSD and/or depression was not supported. Recent research into mechanisms underlying PTSD has

highlighted the importance of appraisals in the development and maintenance of the disorder [52,53]. In their cognitive model of PTSD, Ehlers and Clark [26,54] argue that stress reactions are prolonged when the survivor perceives the sense of threat associated with the trauma as ongoing. This persisting apprehension influences the way in which the individual views the world [55]. Foa et al. [27] assert that people with PTSD tend to overestimate the likelihood and consequences of future traumatic experiences. Past trauma also threatens the individual's conceptualization of the world as a generally safe place [27]. Cognitive models of PTSD can aid understanding of the current findings, as the sense of ongoing danger and overestimation of the probable occurrence of future trauma likely contribute to the appraisal of threat to one's culture. The perception of the world as a dangerous place in which traumatic events occur frequently and unexpectedly may reinforce, and even exacerbate, perceptions of the likelihood of catastrophic outcomes such as cultural extinction. Symptoms of PTSD, such as hypervigilance and sense of foreshortened future [56], traditionally reflect an individual's sense of vulnerability to future harm. Extending this concept, the current findings indicate that trauma survivors who perceive that their group is suffering collective traumatization can experience a sense of foreshortened future as a cultural identity. Acting in concert, past trauma exposure and symptoms of PTSD may contribute to fear of cultural extinction both by the provision of evidence that the community is under threat from personal experience, and heightening the perception of danger through maladaptive appraisals about the world and the future.

The cyclical nature of the abovementioned relationships merits comment. If past trauma experiences and

current stress contribute to PTSD symptoms, which in turn are related to fear of cultural extinction, this is likely to cause further stress and may also impact on the behavior of the individual facing cultural threat. Members of cultural groups facing extinction may engage in more extreme behaviors in attempt to preserve culture, which is likely to then increase hypervigilance to indicators of cultural erosion (e.g., reports of human rights violations in the country of origin or intermarriages). Heightened attention to these signals may increase fear of cultural extinction, which can contribute to greater alienation from other groups in society as one fights to maintain cultural identity. This is once again likely to contribute to stress and exacerbate symptoms of PTSD. This continuing cycle may not only heighten perceptions of threat, but also increase the level of distress experienced by the individual. Further research investigating self-sustaining pathways from life experiences to fear of cultural extinction and beyond is necessary to determine the extent to which this occurs amongst threatened cultural groups and the optimal way to alleviate this distress and associated psychopathology.

It is notable that depression did not directly contribute to fear of cultural extinction. Intuitively, one would expect that symptoms characteristic of depression, such as a sense of hopelessness and global negative cognitions about the world and the future [57], would impact on beliefs about the future of one's cultural group. One potential explanation is that the strong relationship between PTSD and depression obscured a potentially significant pathway between depression and fear of extinction. Another possible alternative is that different cognitive processes are associated with anxiety and depression. Recent research comparing cognitive processes in depression and anxiety indicate that the ruminative thinking that occurs in the context of depression is often temporally oriented towards the past, while worry, which is associated with anxiety, tends to focus on the future [58,59]. Fear of cultural extinction, which focuses on future-oriented threat, may thus be better understood as a form of anticipatory anxiety about the potential loss of one's culture, and more closely related to PTSD than depression.

Self-identity has been recognized as a key factor impacting on individual mental health [60,61]. Research has indicated that traumatic experiences play a strong role in shaping the sense of self of individuals with PTSD [62,63]. Culture represents elements of identity that are, at once, shared by the group and vitally important to the individual. The belief that this culture will cease to exist is likely to have a profound effect on one's sense of identity and psychological well being. Researchers interested in the effects of mass violence have explored the concept of collective traumatization, suggesting that the effects of

trauma may resonate within the larger community [64–66]. When such events threaten a group's existence, the consequences of trauma extend beyond individual well being to encompass the potential loss of one's sense of collective self, including history, language, culture, rituals, and religious beliefs. It is imperative that further research be conducted to explore the ramifications of persecution and cultural endangerment for both the individual and the wider community.

The relationship between trauma, current stress, PTSD, and fear of cultural extinction highlights important implications for clinicians working with traumatized and endangered groups. Specifically, careful consideration must be given to determining how to help an individual to cope with the prospect that their cultural group may cease to exist in the future, while at the same time, addressing other psychiatric symptoms. The current gold standard treatment for PTSD, cognitive behavior therapy, focuses on helping the individual to realistically appraise threat associated with the traumatic experience [67]. When a person is facing objective threat to the future of their community, and holds catastrophic appraisals related to past trauma experience and possible future events, the challenge for the therapist is to identify the extent to which the patient's perception of threat is realistic and how much is accentuated by traumatic stress reactions. Future investigations of the effectiveness of psychological interventions in treating PTSD in these groups should incorporate techniques explicitly addressing these issues in order to evaluate their impact on symptomatology and distress.

There were a number of limitations associated with the current study. A key limitation was that the measure of fear of cultural extinction employed in the multivariate analyses consisted of a single item. Future research should endeavor to replicate the current findings using a more extensive measure to assess this phenomenon. Random sampling of the Mandaean community was not possible as there was no census information on this group, however this study explored relationships between variables rather than documenting absolute rates of disorders. We were also unable to characterize those Mandaeans who did not participate in the study and thus cannot comment on the representativeness of this sample. Measures of psychopathology used in this study were not developed specifically for the Mandaeans, however they have been used widely and validated with various refugee groups [e.g., 21,42,68,69–71]. While there are limitations associated with the use of self-report measures in determining prevalence rates of diagnostic categories, the primary goal of the current program of research was to examine for relationships amongst key constructs rather than to determine prevalence rates.

Although analyses revealed a significant relationship between PTSD and fear of extinction, this association is relatively modest in magnitude compared to other relationships detailed in the model. While this model introduces fear of extinction, and indicates that PTSD contributes to anxiety regarding loss of culture, it does not encompass other variables that may also impact on fear of cultural extinction. Further research should be conducted to determine whether other factors, for example, the perception of the extent of the Mandaean diaspora or religious commitment of community members, significantly contribute to fear of extinction. The Mandaeans are a small community who have experienced high levels of trauma and are in the position of facing the imminent possibility of cultural extinction. It is therefore not clear how applicable the current findings would be to other communities facing threat to their culture, and it is recommended that further research be conducted with other groups and increased sample size to investigate whether these relationships occur in other communities and in analyses with greater power. While the length of the interview limited inclusion of these measures in the present survey, future research may benefit from examining the relationship between fear of cultural extinction, general anxiety and worry in addition to post-traumatic stress symptoms. Although we have speculated as to the direction of the relationships between variables, care must be taken in drawing firm conclusions as the data in this survey is cross-sectional in nature, therefore directionality cannot be inferred. Further research investigating these variables in a longitudinal design would provide more information regarding directional relationships.

The current study explored the relationship between past traumatic experiences, current living difficulties, mental health, and fear of cultural extinction in the Mandaeans, a refugee community facing the real threat that their culture will cease to exist within a few generations. The finding that both life experiences and posttraumatic stress symptoms contributed to fear of cultural extinction suggests that exposure to human rights violations and the sense of threat associated with these events influenced the extent of fear of loss of culture. This has implications for both government policy and treatment interventions with endangered groups. These findings highlight the perilous existence of communities who are experiencing ethnic cleansing and are at risk of cultural extinction. International efforts should be made to intervene in these situations, both to prevent human rights violations and to promote the maintenance of endangered cultural identities. Furthermore, the reunification of small communities facing cultural threat via refugee resettlement programs is vitally important if these cultural traditions are

to be sustained. In host countries, the provision of support for continuing cultural and religious activities will not only aid the transition to a new society, but also assist in ensuring these cultures do not become extinct. Resettled cultural groups should be aided in advocacy efforts to educate governments about their plight and obtain resources facilitating the maintenance of cultural traditions. Furthermore, health service providers should recognize the importance of cultural and religious values to the individual's identity and aid the person in both maintaining their cultural traditions on an individual level and coping with the possibility of cultural erosion.

## Conflict of Interest

The authors declare no conflict of interest.

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