

The Role of Traditional Ecological Knowledge in Early Childhood Mental Health Resilience in Post-Climate Disasters

Neyamat Hossen

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Abstract

Climate change in Bangladesh threatens the mental health of young children aged 3–8 years in coastal communities, yet access to formal psychological services remains limited in rural disaster-affected areas. Traditional Ecological Knowledge (TEK), culturally embedded practices transmitted intergenerationally, has not been examined as a resource for early childhood mental health (ECMH) resilience. This study explored how TEK-based caregiving practices support children's emotional and cognitive resilience following climate disasters in three coastal communities of Khulna Division, using an explanatory sequential mixed-methods design (N=129 across five stakeholder groups). The quantitative findings show participants believed that TEK is equally significant as any other medical knowledge. Almost all participants reported story telling, natural remedies, community rituals play a pivotal role. Most participants also believed that intergenerational transfer of TEK is now experiencing a decline. The Qualitative analysis identified four key themes focusing on Traditional Ecological knowledge as a source of child healing and recovery, children's mental health needs post-disasters, Integration of TEK and practices into ECD and mental health, and Preservation, barriers, and policy support for TEK in ECD. Participants reported that the traditional practices, including singing songs and poems, faith-based practices, and intergenerational care, like using inherited herbal remedies, helped in child healing and recovery. Most of the participants endorsed TEK effectiveness while unanimously reporting zero clinical or programmatic integration. The critical gap between professional endorsement and institutional integration requires urgent policy attention. It is recommended that national ECD and disaster mental health policies formally incorporate TEK-based practices, with elder knowledge-keepers recognized and compensated as partners in programme delivery.

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1. Introduction and Contextual Background

Increased climate change has become one of the biggest threats to human wellbeing globally and children are one of the worst affected. According to UNICEF (2021), the risk of climate change is serious for almost one billion children, nearly half the world's children living in these countries. According to WHO (2022), in the year 2020, there was a total annual dislocation of 33.3 crore people due to climatic calamities. Climate catastrophes have seen well documented psychological impacts. Exposure to environmental climate disaster is a significant risk factor for developing post-traumatic stress disorder (PTSD), anxiety and depression (Goldmann & Galea, 2014; Clayton et al., 2021; Karim et al., 2024). Bangladesh straddles the fault line between climate vulnerability and mental health requirement. According to the Climate Risk Index (2022), it was ranked 46th out of 171, which indicates its vulnerability to extreme weather events.

Every year Bangladesh faces cyclone, flood, and riverbank erosion (Haque et al., 2019; Islam & Shamsuddoha, 2017). As of 2024, approximately. According to estimates by Internal Displacement Monitoring Centre, climate-related disaster left 2.4 million people displaced. Between the years 2016-2021 floods made 950 people homeless. Children who are aged 0-8 years are in their most developmentally sensitive life stage. Climate Change Displacement can impact cognitive functions, emotional regulation and attachment relationships (Masten, 2021; Masten & Narayan, 2012; UNICEF, 2023). In Bangladesh, it was found the severe the crisis is, less than 15% children in rural areas are reached through Western oriented mental health interventions. (WHO, 2020; Nahar et al., 2014) There is a treatment gap which indicates a high risk of common pathologies not addressed, hence the need of in need of culturally grounded, contextually relevant ways to support children's mental recovery. Traditional ecological knowledge (TEK), which Berkes (2018, pp. 8) defines as "a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission", is embedded in the resilience capacities of Bangladesh's coastal and riverbank communities. Communities have engaged in intergenerational storytelling, gathering of the community, nature-based engagement and traditional healing as responses to struggle in the past (Paul and Routray, 2010; Shaw et al., 2013; Islam and Walkerden, 2015). Nonetheless, there is a serious gap in literature.

The potential of TEK to guide the psycho-social recovery of young children in post-disaster settings has been less explored (Kabir et al., 2016; UNICEF, 2021; IPCC, 2022), although the usefulness of TEK for disaster risk of physical resilience seems to be gaining wider recognition (Choudhury et al., 2021). As communities become urbanized, globalized and repeatedly displaced, local knowledge systems often get eroded, claiming an urgent documentation of traditional knowledge (Berkes, 2018; Choudhury et al., 2021). To explore the role of TEK in promoting the mental health and wellbeing of young children, four interrelated questions were posed: (1) What TEK- based interventions to support mental health resilience of children currently exist in communities affected by climate extremes in Bangladesh? What are caregivers' perspectives on TEK-based practices enhancing emotional and cognitive resilience

of children 0-8? Children aged 3-8 years describe and make sense of their disaster experiences. What role do traditional practices play in this and how do they support emotional wellbeing? How can learnings from TEK-based caregiving be integrated into ECD policy and practice and post-disaster mental health interventions? This study presents the theoretical and empirical context for these inquiries.

2. Literature Review

2.1 Climate Change, Displacement, and Early Childhood Mental Health

Researchers from various fields have increasingly recognized the connection between climate change and the mental health of children. Children affected by disasters linked to climate change face heightened psychological stress compared to those who are not (Goldmann & Galea, 2014). Psychological sequelae are a long list of symptoms that include post-traumatic stress disorder (PTSD), depression, anxiety, phobias, sleep disorders, attachment disorders, and “risky” behavior including drug and alcohol abuse (Burke et al. 2019). Numerous studies of respondents before and after Hurricane Katrina found that half of respondents screened positive for probable PTSD, and greater disaster-related losses were associated with worse outcomes (Rhodes et al., 2010). Ninety-five percent of children who developed new non-PTSD diagnoses also presented concurrent symptoms of substantial PTSD (Scheeringa, 2015). A prospective longitudinal study of Hurricane Ike participants showed “significant” elevation in risk for chronic post-traumatic and depressive symptoms (Gruebner et al., 2016). For children age 0-8, at this very young age there are complications with the development and vulnerability. When stable attachments to caregivers, familiar environments and community support are disrupted.

As noted by a recent publication (2024), social-emotional and cognitive development are greatly affected by displacement experiences. Further, developmental difficulties in early childhood do predict academic and health outcomes later in life. Kabir et al. (2016), reported the development of anxiety, chronic depression and behavioural troubles up to many months after the disaster event in children that survived the cyclones Sidr and Aila. On the other hand, it is estimated that about 10-30% of children affected by disasters may develop chronic psychological disorders like post-traumatic stress disorder, depression, anxiety and behavioural difficulties. (WHO, 2019; UNICEF, 2021).

2.2 Traditional Ecological Knowledge Definitions and Theories

Traditional ecological knowledge is not just a pool of observations and other data about the environment. Berkes (2018, p. 8) defines TEK as ‘a cumulative body of knowledge, practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings with one another and with their environment’. A definition that includes ecological, social, spiritual and psychological aspects

is a reflection of the holistic nature of TEK frameworks which distinguishes it from narrowly technical approaches to disaster management. The current research relies on three interrelated theoretical frameworks. Berkes (2018) argues that TEK is a tool, not a static object. Indigenous ecological knowledge is not a static object. On the contrary, it is an adaptive system.

Furthermore, Ungar's (2011) social-ecological conceptualization of resilience does not treat it as a static property of the individual. Instead, resilience is generated in the interplay between the individual and their social ecology. Given the social ecology attributes of TEK, the communality presupposition is entirely reasonable. According to Masten (2021), children's recovery from trauma and adversity is dependent on the functioning of diverse systems including family, community and culture over developmental time. Overall, these frameworks for resilience present TEK-informed caregiving resources as a potentially powerful, culture-based children's resilience resource for impacted communities.

2.3 TEK and Indigenous Models of Psychological Healing

According to Kirmayer et al. (2011), Indigenous healing utilizes pathways that greatly differ from those of biomedical psychiatry. Indigenous healing practices place suffering within a collective history rather than framing individual illness and wellness. To accomplish this, they rely on assets such as a collective past, rituals and human-nature bonds. According to Gone (2013), storytelling is the primary mechanism through which indigenous communities pass on effective coping strategies from one generation of youths to the next. Such stories are developmentally appropriate and culturally relevant; they also help young children make meaning from traumatic experiences. In the context of Bangladesh, intergenerational storytelling not only works as a healing mechanism but also a way in which resilience strategies are passed down from generation to generation.

Therapeutic strategies inspired by nature that motivate children to engage physically with their surroundings are suitable for early childhood since the verbal expression of trauma is developmentally limited (Buzzell and Chalquist, 2019; Dyregrov and Yule, 2006). Studies point to a substantial decrease in mental disorder among indigenous peoples due to connection to cultural continuity through indigenous practices which also suggest that connection through culture is protective (Chandler and Lalonde, 2008; Gone, 2013). Yet, a major consideration is the expanded role of critical and authentic Indigenous community involvement and intensive and authentic attention to all cultural protocols and processes for the successful incorporation of indigenous healing approaches into mainstream systems (Pedersen et al., 2021). According to Makhubela (2021), Indigenous healing practices are culturally-based techniques tied to ancestral spiritual systems and collective practices that are unable to be unpacked from these systems without losing their healing efficacy. Through applications based on TEK, it is argued that there is an indelible connection with the broader cultural complex.

2.4 TEK Applications in Post Disaster Mental Health Interventions

The evidence on post-disaster psychosocial interventions for children is more limited. While much has been written about the integration of indigenous knowledge systems into disaster risk reduction or recovery (Jongen et al., 2023). Communities often employ TEK-informed approaches following a disaster, highlighting intergenerational and transformational learning about disasters. The evidence indicates that strategies informed by TEK are oriented toward early warning, detection, and recovery mechanisms. A couple of examples of TEK-based disaster strategies are community-based early warning systems and ecological signals. (Mikulecky et al., 2023; Hadlos et al., 2022) In Indonesia, children are taught disaster mitigation through traditional songs and messages from the community. This is a blend of teaching and therapy function, with reference to TEKs (UN News, n.d.).

In addition, Runkle et al. (2021) highlighted the importance of adaptive community capacity and locally based recovery practices as protective factors when access to formal services was curtailed following Ms. Maria in Puerto Rico. According to Shaw et al., (2013) in Bangladesh, traditional elites and ceremonies played a vital instrumental role in organizing people to take actions and facilitating recovery at community level. Yet, evidence of this kind is still underdeveloped, and few studies reach standards of rigour of public policy relevant observation (Jongen et al. 2020; Children & Nature Network, 2016). Two and half centuries ago, a colourful Assamese tapestry near Dibang river of Arunachal Pradesh was found. The cloth depicts the great banyan tree in the centre (Detail the abstract colour) on which are perched monks and birds. An example of a community's Traditional Ecological Knowledge (TEK). Throughout history, human beings, especially the indigenous populations like our Assamese villages, have modified the ecology of their habitat. Consequently, they have adapted to their circumstances by utilizing their surroundings.

2.5 TEK and Climate Resilience in Bangladesh Context

Bangladesh is a very significant context to consider the potential contributions of TEK to child resilience. The merging of three elements is noted for this. Their high vulnerability to climate change, long-standing indigenous knowledge systems, and a significant treatment gap in mental health. (Words – 29) through long times, communities of the coast and the riverbank have generated a sophisticated but socially embedded repertoire for anticipating, forestalling, and rebuilding after disaster (Paul & Routray 2010). A strong sense of community spirit is fused with environmental information and ecological observation. Choudhury et al. (2021) present an in-depth investigation of this repertoire and its neuropsychological basis. The communities of coastal Bangladesh use the behavioural pattern of animals as an adjuvant.

According to Chowdhoree (2019), communities with robust intergenerational knowledge transfer had significantly greater resilience to disasters. In addition to demonstrating more rapid recovery, such communities were able to retain social and cultural practices important to community-wide healing. The spiritual and religious (including Islam and Hinduism)

component of Bangladesh's TEK landscape has further been described by Haque et al. (2018). This provided syncretic healing pathways using a combination of Islamic and local indigenous practices, including collective prayer, ritual purification and collective commemoration. This provided multi-faceted means for processing disaster.

3. Research Gaps and the Present Study

There is a significant gap in literature on the use of TEK for mental health support for children in Bangladesh specifically. TEK is in a better position to help children recover psychologically and socially after disaster compared to disaster responders, it just that the question on its effectiveness has not been systematically researched (Kabir et al, 2016; Jongen et al., 2023). Rapid urbanization, globalization, and repeated displacement have been eroding TEK systems globally. Hence, there is an urgent need for their documentation and study (Berkes, 2018; Choudhury et al., 2021). The current investigation employs an explanatory sequential mixed-methodology design that engages community elders, caregivers, children, ECD professionals, and mental health experts as co-informers across three ecologically diverse, climate-vulnerable sites in coastal Bangladesh.

4. Methodology

4.1 Research Design

This research adopted an explanatory sequential mixed-methods design (Creswell & Plano Clark, 2018; Ivankova et al., 2006). Quantitative data were collected and analysed in Phase 1. This is followed qualitative data in phase 2. Findings in this study were integrated at the stage of interpretation. A Likert-scale survey was suitable for obtaining scores for each stakeholder group's awareness of TEK, frequency of practice, and perceived impact. According to Johnson & Onwuegbuzie (2004), the scores must connect with the lived experiences of the participants and local context. Integrated methods are also responding to the recognition that it is very difficult to transfer qualitative TEK results across contexts (Berkes, 2018).

4.2 Research Setting

Three ecologically different, climate vulnerable communities from southwestern Bangladesh were surveyed for this study. These include (i) coastal community Jhulanta Para, Dacope Upazila – a river erosion and flood affected area; (ii) Dakkhin Madinaghat, Koyra Upazila; and (iii) Soladana, Paikgacha District – a cyclone-hit region. Bringing together three different sites enhances transferability through cross site comparison.

4.3 Participants and Sampling

The snowball sampling technique was used along with purposive sampling to recruit participants from the Department of Disaster Management officials and local union members.

A sample of 129 participants have been drawn from 5 groups which are (i) 45 caregivers/parents; (ii) 30 children 5–8 years old; (iii) 31 community elders across six focus group discussions; (iv) 9 ECD experts (census sample); and (v) 14 mental health professionals (census sample). The sizes of the samples follow the conventions applicable to descriptive mixed-methods community health research (Creswell & Plano Clark, 2018; Guest et al., 2006).

Table 1: Participant Demographics by Group and Site

Stakeholder Group	Dacope (n)	Koyra (n)	Paikgacha (n)	Total (N)
Caregivers/Parents	15	15	15	45
Children (5–8 yrs)	10	10	10	30
Community Elders	11	10	10	31
ECD Experts	—	—	—	9
MH Professionals	—	—	—	14
Total	36	35	35	129

4.4 Data Collection and Analysis

In phase 1, four group-specific structured Likert scale questionnaires were administered individually to adult participants (n=99) and the CFSQ to children (n=30) through local facilitators. The CFSQ made use of validated non-verbal response formats (non-verbal versions of the 5-point Likert-format) including emotion face scales, picture-card pointing, a remix (incorporating Klasen et al., 2010) various head-nodding checklists (Hicks et al., 2001), and these formats are appropriate for ages 3-8 and in low-resource settings. During phase 2 in-depth interviews were carried out with caregivers, ECD experts and mental health professionals (60-90 minutes each) and three focus group discussions with community elders. Observations of the participants were planned ahead. An extraction template (Yin, 2018) was used to analysis national ECD policy documents and NGO programme reports. We used IBM SPSS version 26 for data analysis. All the items and composite subscales were computed for descriptive statistics (means, SDs, frequencies). The qualitative data was subjected to manual deductive thematic analysis (Mayring, 2014), with the quantitative and qualitative findings being integrated at the interpretation stage by joint displays (Guetterman et al., 2015; Creswell & Plano Clark, 2018)

4.5 Validity and Rigour

Quantitative assurance of content validity was made ($CVI \geq 0.78$; Lynn, 1986). The credibility of the qualitative research was supported by using triangulation of six data sources, prolonged engagement in the field, member checking, and testing negative cases. Supporting transferability, a thick description of sites and participants (Geertz, 1973; Lincoln & Guba, 1985).

A thorough audit trail ensured reliability, reflexive journal and inter-rater reliability checks (Cohen's $\kappa = .78$) ensured confirmability.

5. Results

5.1 Document Review -TEK in Existing Policy and Practice

The national ECD policy documents and NGO programme documentation that were reviewed for this study noted the importance of community engagement as a policy objective but made no reference to TEK in formal disaster response. In any document or policy instrument, traditional storytelling, lullabies, songs or herbal remedies did not appear as recognised mental health or psychosocial support interventions. The disconnection between community practice and institutional recognition was verified across four specific programme areas, ECD programmes do not include TEK; community elders are not consulted; staff are not trained to recognize traditional practice; and traditional practices are not documented. The reviewed national ECD policy or disaster response framework did not have TEK-based practice guidelines.

5.2 Quantitative Results

Elders reported the highest mean score for knowledge base and intergenerational learning (mean=4.83), followed by effectiveness for child recovery (mean=4.6), indicating strong confidence in traditional practices. Perceived risks and threats to traditional knowledge were also high (mean=4.25), reflecting concern about sustainability. In contrast, transmission and community interest had a relatively low mean score (mean=2.75), reinforcing concerns regarding declining engagement among younger generations (Table 1.2).

Table 1.2: Subdomains mean score

Meaning	Mean
Knowledge base and intergenerational learning	4.83
Transmission and community interest	2.75
Effectiveness for child recovery	4.6
Risks and threats to traditional knowledge	4.25

The Child-Friendly Structured Questionnaire (CFSQ) was employed with 30 child participants aged 5-8 years (70% boys, $n = 21$; 30% girls, $n = 9$). Five CFSQ subscales were computed: Nature-Environment engagement (C); Coping support (B4); TEK exposure (B2); Emotional wellbeing (B3); and Disaster awareness (B1). The reliability of homogeneous sub-scales was assessed using Cronbach's α while the reliability of heterogeneous sub-scale was assessed using McDonald's

ω . All subscales' complete descriptive profile is shown in Table 2. The engagement with Nature-Environment was found to be the most highly rated ($M = 4.013$, $\omega = 0.92$, $p < .001$, $d = 2.14$) subscale. It indicates a consistent and strong engagement with the natural environment to cope across all three sites Coping Support was ranked second after Caring Adults ($M = 3.753$, $\alpha = 0.94$, $p < .001$). Respondents reported a high perceived availability of caring adults and traditional practices. TEK Exposure level was moderate ($M=3.439$, $\alpha=0.96$, $p=0.017$) with a significant difference between sites (Kruskal-Wallis: $p<0.01$). Emotional Wellbeing was above neutral ($M = 3.344$, $\omega = 0.66$, $p < .001$). The lower Omega value suggests a bifactor structure whereby distress items (storm-related fear, storm-related nightmares) and positive wellbeing items load in partially opposing directions. This is similar to the measurement of overlapping trauma-recovery in young children (Dyregrov & Yule, 2006). The only subscale which was not significantly different from the neutral midpoint was Disaster Awareness ($M = 2.883$, $p = .182$), and the item with the lowest score was concerned about storm-recurrence (B1.5, $M = 2.500$, $t = -4.349$, $p < .001$), showing lingering concern about future disaster (Table 2).

Table 2: Children's CFSQ Subscale Descriptive Statistics (n = 30)

Subscale (Code)	M	SD	Reliability (α / ω)	t vs 3.0	p	Cohen's d
Nature–Environment (C)	4.013	0.59	$\omega = 0.92$	11.72	< .001	2.14
Coping Support (B4)	3.753	0.81	$\alpha = 0.94$	5.09	< .001	0.93
TEK Exposure (B2)	3.439	0.95	$\alpha = 0.96$	2.53	.017	0.46
Emotional Wellbeing (B3)	3.344	0.36	$\omega = 0.66$	5.24	< .001	0.96
Disaster Awareness (B1)	2.883	0.47	$\omega = 0.77$	-1.37	.182	—

MHP reported high scores for child mental health conditions (mean=4.36), effectiveness of integrated approaches (mean=4.05), and service barriers (mean=4.03), all statistically significant ($p < 0.001$). Policy and system recommendations showed the highest mean (4.8), indicating strong support for systemic change. However, perceived value of traditional supports (mean=2.9), clinical integration (mean=3.2), and professional preparedness (mean=2.68) were comparatively low and not statistically significant, highlighting gaps in acceptance and readiness (Table 3.2).

Table 3.2: MH Professionals responses subdomain focusses mean score

Subdomain focus	Items	Mean	p-value
Child mental health conditions after disasters	7	4.36	<.001
Perceived value of traditional and integrated supports	5	2.9	0.578
Effectiveness of integrated approaches by recovery area	5	4.05	<.001
Clinical integration and collaboration with traditional systems	5	3.2	0.372
Training and professional readiness	4	2.68	0.175
Service barriers and developmental impact	5	4.03	<.001
Policy and system recommendations	4	4.8	<.001

ECD professionals reported very low scores for TEK awareness (mean=1.89) and current integration (mean=1), both statistically significant ($p<0.001$). In contrast, the perceived effectiveness of TEK was high (mean=4.69), as were acceptability for future integration (mean=4.44) and developmental impact (mean=4). Barriers to integration were moderate (mean=3.67), while policy recommendations showed moderate support (mean=3.58) (Table 4.2).

Table 4.2: ECD Professionals' responses subdomain focus mean score

Subdomain focus	Items included	Mean	p-value
TEK awareness and knowledge	4	1.89	<.001
Observed effectiveness of TEK	4	4.69	<.001
Current program integration state	3	1	<.001
Barriers to integration	5	3.67	<.001
Acceptability and future integration	5	4.44	<.001
Developmental impact	5	4	<.001
Policy and system recommendations	5	3.58	0.018

Caregivers reported moderate knowledge levels (mean=3.31) but higher scores for practice (mean=3.88) and perceived effectiveness (mean=4.06). Transmission and preservation scored high (mean=4.39), reflecting concern for continuity. Challenges in practice were moderately high (mean=3.82), while child mental health outcomes (mean=3.96) and community support

(mean=3.6) were moderate. Policy and support expectations showed the highest score (mean=4.77), indicating strong demand for institutional support (Table 4.2).

Table 5.2: Caregivers' responses subdomain focus mean score

Subdomain focus	Items	Mean	p-value
TEK knowledge and family/community sources	5	3.31	0.002
TEK practice in caregiving	7	3.88	<.001
Perceived effectiveness of TEK	5	4.06	<.001
TEK transmission and preservation	4	4.39	<.001
Challenges in TEK practice	5	3.82	<.001
Child mental health and resilience outcomes	5	3.96	<.001
Community and social support	4	3.6	<.001
Policy and support expectations	5	4.77	<.001

5.3 Qualitative Results

Theme 1: Traditional Ecological Knowledge as a source of child healing and Recovery

The participants perceived that Traditional practices usually have a profound influence and serve as a positive source for child healing and recovery, contributing to an in-depth understanding of embedded practices related to distress, intergenerational care, and child-centric approaches to healing. The qualitative insights of different stakeholders from diversified backgrounds highlight the key practices inherited from previous generations to reduce distress (Table 6.1), such as:

“During Cyclone Amphan, power was out for days. I sang all night to keep my children calm in the darkness. Traditional songs need no electricity” (R001).

Similarly, participants highlighted the importance of transmitted intergenerational practices and songs that have a significant influence on individuals; these coping strategies helped participants to better cope with disaster situations. As one of the participants from Dacope stated regarding grandmothers' songs that, *“I know many songs from my grandmother's time - songs about the river, the forest, Bon Bibi. After every disaster, I sing to all the neighborhood children, not just my own. The songs are medicine.”* (R008)

Most of the participants believed that Faith-based practices are most effective during challenging times; the data reveal different practices, rituals, ceremonies, and storytelling approaches being performed to overcome the challenges. Many participants believed that

performing prayers and lighting a diya helps them protect from disaster situations and reduce fear among them.

As one of the participants stated,

“During Aila, I performed the rituals my mother taught me - lighting a diya, reciting prayers, tying sacred thread on my children's wrists. They felt protected by something bigger than the storm” (R014).

While another caregiver mentioned that

“I cannot read the Quran, but I know many surahs by heart. During Sidr, I recited Ayatul Kursi with my children until they fell asleep. The Arabic words themselves have calming power even if children don't understand the meaning” (R035).

Another participant further supported this perspective, stating that offering prayers and following rituals helps children to understand the intensity of situations and challenges.

“I know the old farming rituals - the prayers before planting, the harvest festivals, the offerings to nature spirits. These rituals teach children respect for nature. When children respect nature, they understand disasters as nature's pain, not punishment. This reduces fear” (E015).

According to these participants, the herbal remedies worked effectively to treat skin rashes, fever, and other illnesses during the disaster situations. They also mentioned that these remedies and practices have medicinal properties. A participant highlighted one of the transferred practices of using neem leaf paste to treat skin rashes and stated, *“My grandmother was a dai (midwife) who knew all herbal remedies. During Roanu, I made neem leaf paste to treat my children's skin rashes from flood water. It worked when there was no medicine available”* (R017).

While a 36-year-old paikgacha stated that, “I learned from my mother to always keep dried Tulsi leaves and ginger at home. During the Sidr aftermath, when my children had a fever and no doctor was available, this simple tea saved us. Preparation is key” (R039).

Intergenerational care plays a key role in child healing and recovery, hence one of the participants revealed that, “I have some education, so I can explain why traditional practices work. The songs have rhythms that calm the heartbeat. The massage uses acupressure points. The herbs have real medicinal properties. Our ancestors discovered through centuries what science is now confirming. I bridge old and new” (E007).

Additionally, one of the participants, “I was newly married during Sidr. My mother-in-law taught me to tie a red thread with seven knots on each child's wrist for protection. My children still wear these threads during storm season” (R021).

Theme 2: Children's Mental Health Needs Post Disaster

Under this theme, many participants across the groups described that children experience emotional distress, such as fear, anxiety, sleep issues, withdrawal, and sadness after the disaster. Some caregivers mentioned that children became emotionally and psychologically sensitive, and they react strongly to environmental changes. They also shared different practices they perform to manage their children's emotional distress (Table 6.2.). One of the mothers from Dacope explained that

During Bulbul (Cyclone, 2019), for my children's anxiety, I made Tulsi tea. My education helps me understand why these plants work - they really do have calming properties (R010)".

Another parent mentioned that,

During Bulbul (Cyclone 2019), my daughter was trembling with fear. I wrapped her in my grandmother's old shawl - the same shawl that comforted me as a child. The familiar smell and texture calmed her immediately (R026).

Sleep-related issues were also identified as one of the common emotional distresses experienced by children post-disaster. Parents and caregivers reported that children experience difficulty sleeping, nightmares, and fear. One of the mothers from Korya explained, while mentioning nightmares

"After Mora (Cyclone 2017), my son had terrible nightmares. I remembered the story of Dakkhin Rai (the tiger god), who protects the Sundarbans children. I told him this story every night until the nightmares stopped (R018)".

Similarly, another parent stated that their child has difficulty sleeping, and she used traditional folk songs to calm her child.

"During Cyclone Amphan, when my children couldn't sleep, I sang 'Ghum Parani Mashi Pishi' that my mother taught me. Within minutes, my youngest stopped crying and fell asleep. The familiar melody calmed them when everything outside was chaos (R001)".

In addition to the caregivers' and parents' perspectives, children's own narratives further illustrated their lived experiences of Disasters. They reported fear, nightmares, disturbed sleep, and felt like crying. One of the children stated, *"I feel scared at night, can't sleep (CHD002)."* Other children mentioned that they experience nightmares about the disasters, as one of them explained that *"I see storms in dreams (CHD016)"*. While another one stated that, *"I see water in a dream and want to cry (CHD006)"*.

Children also explained coping strategies that help them to overcome the emotional distress caused by disasters. Their perspectives showed that attachment to caregivers, listening to stories, or traditional songs helps them to feel safe. Many of them stated that being close to a parent helps to reduce fear. One of them mentioned that *"Ma helps most - sings songs, holds me (CHD001)"*. *"Another child stated that "Dadi sings, makes better (CHD013)"*. Similarly, they

highlighted that listening to stories gives them the courage to regain a sense of emotional comfort, “Listen to stories, sleep (CHD002)”.

One of the mental health professionals also described the significance of traditional practices in overcoming emotional distress and stated that *“From a public health perspective, traditional practices have measurable outcomes - reduced stress hormones, better sleep, faster recovery. We need to study these systematically (ECD008).*

Theme 3: Integration of Traditional Ecological Knowledge and Practices into ECD and Mental Health

Participants, including Mental Health Professionals and ECD Educators, strongly emphasized the integration of traditional ecological knowledge and practices into ECD and mental health services and interventions in various sectors, including community-based programs, healthcare, education, and the national agenda (Table 6.3.).

Various participants emphasized community-based programs that promote traditional knowledge and practices pertinent to children in disasters. One of the mental health professionals expressed that

“Develop community-based recovery programs that utilize traditional structures. Create peer support groups led by recovered individuals who can bridge modern and traditional approaches (MHP006)”.

Participants further highlighted the crucial role of healthcare settings in recognizing traditional practices and knowledge that provide mental support to young children after disasters. In addition to medical care, children can also seek healing through traditional and culturally familiar interventions. They also emphasized the need to develop healthcare professionals' capacity in traditional knowledge and practice so they can refer patients to traditional practitioners when needed.

One mental health professional explained that “Prescribe 'traditional practice therapy' alongside medication when appropriate (MHP005). Another one stated that “Create liaison roles between hospital psychiatry and community traditional structures. Develop discharge protocols that activate traditional support networks. Train primary care providers to recognize and support traditional coping (MHP014). Another participant shared similar thoughts, as they said that “Develop culturally sensitive intake protocols that document family healing traditions. Train psychiatric residents in ethnopsychiatry modules covering local practices (MHP001).”

Additionally, the integration of traditional knowledge and practices into the national psychological curriculum was highlighted. As one of them explained, *“Develop a Bangladesh-specific psychology curriculum that incorporates traditional concepts. Create a research agenda documenting and validating local therapeutic practices (MHP012).”* Additionally, participants also expressed the significance of integrating the traditional practices into the disaster management plan. As one of the ECD educators mentioned, *“Integrate traditional*

knowledge holders into formal disaster response teams. Create 'Community Liaison' positions that bridge NGO programs with local practices (ECD005)." This integration will strengthen the provision of mental health support to children in a post-disaster context.

Furthermore, participants also reflected on various challenges that hinder the integration of traditional ecological knowledge and practices into ECD and mental health services. One of the key concerns highlighted by the participants was the gap in training systems and curriculum, with limited contextual integration. One of them stated that *"Training curricula are globally standardized - what works in Europe doesn't translate here. When I suggest including local content, I'm told there's no 'evidence base.' We need to create that evidence ourselves (ECD003)"*. Similar thoughts were shared by another participant who said that *"International organizations impose their frameworks. Donors want metrics that don't capture cultural outcomes; they're not scalable and standardized approaches aren't culturally appropriate (ECD004)." Participants also noted the disconnection between the systems. For instance, one of the ECD experts stated that "Academic silos are the problem. Psychologists study 'evidence-based' interventions while anthropologists study traditions - no one connects them (ECD002)". Other structural gaps highlighted by some participants were the exclusion from the disaster response plan, as one of the ECD Experts stated that "Our disaster response protocols don't include traditional practices. Staff are trained in psychological first aid but not in recognizing valuable traditional interventions. When emergencies happen, we miss opportunities to build on existing community strengths.*

Theme 4: Preservation, Barriers, and Policy Support for TEK in ECD

Given the high volume of stakeholders from different backgrounds, some participants highlighted the key barriers and policy challenges faced. One of the key barriers faced by the participants was the degradation of natural resources due to climate change. For example, a 40-year-old female from Dacope (R010) highlighted that *"Climate change is killing our medicinal plants. The salinity in soil destroys them. We're losing our natural pharmacy"*. While another participant reflected that the mango tree fell in Amphan. We lost our healing place. New trees take years to grow. Similarly, a participant revealed that, *"Finding the right materials for rituals is harder now. The sacred plants are disappearing; the river is polluted"*. (R004)

While some participants highlighted the barriers that have occurred due to a lack of intergenerational information transmission. A 36-year-old female from Dacope (R013) stated, *"I only know a few stories. The elders who knew hundreds of stories are dying. No one is recording them"*. Similarly, another participant reflected that, *"I only know a few songs. Wish I had learned more from my grandmother. Now she's gone"*. (R009)

One of the major barriers is the integration of concepts among participants. A participant reveals that *"Religious extremists say these stories are shirk (polytheism). I'm confused about what to teach my children now"*, while another female from Dacope (R018) highlights that

“Some religious leaders say our old rituals are wrong. This confuses people. Our traditions are being attacked”. (R014)

Policy integration is one of the key elements for TEK IN ECD. An ECD specialist stated (ECD001) Bangladesh needs a Climate-Resilient ECD Strategy that *Bangladesh needs a Climate-Resilient ECD Strategy that formally includes Traditional Knowledge Keepers. We should create a national database of traditional child-calming practices. UNICEF and the government should jointly fund documentation before this knowledge disappears*”(ECD001).

While A female from Paikgacha (R045) highlighted “Writing takes time I don't have. And how do you write down a melody? Or the feeling of a grandmother's hands? Some things can't be documented”.

6. Discussion

The first question centered around the document review. The document review indicated a systematic lack of TEK in all of the reviewed national ECD policy instruments and disaster response documents. Not one formal guideline on mental health or psychosocial support included references to any traditional story, lullaby, herbal remedy or community ritual. There is research that supports this finding. Jongen et al. (2023) discovered that TEK-informed strategies often emerge at the community level after disasters³⁰, yet these strategies are largely ignored by institutional actors and not reflected in any official programming. The IPCC report of 2022 mentions that the climate adaptation is missing the use of indigenous and local knowledge. These oversights make the response to disaster culturally thin and community irrelevant. The silence of the institution isn't harmless. Kabir et al. (2016) argued that the absence of social and religiously-congruent psychosocial practices in formal policy in Bangladesh generates a structural treatment gap which western-based frameworks cannot fill. When community practices remain undocumented, they cannot be safeguarded; when they cannot be safeguarded, they cannot be duplicated or expanded. Consequently, the study has availed itself of relevant materials covered by the documentary analysis to interpret study data, especially for stakeholder categories that cover all children's recovery knowledge. With the documentary work now furthering the study's findings, a paradox emerges, which stakeholders' data elaborates: communities have and use knowledge systems for children's recovery, while those charged with formal responsibility for those communities are structurally ignorant about them.

The study reveals that Traditional Ecological Knowledge (TEK) is positively affirmed among all five stakeholder groups. The backing from two different spheres is remarkable. Berkes (2018) emphasized that TEK is adaptive and is not merely a well of practices or a knowing system. It is dynamic and evolves with the experiences of the community and with the ecological systems. This widespread validation from grassroots caregivers, community elders

and formally trained professionals would suggest that, in practice, TEK here is perceived to have practical relevance in the context of post-disaster recovery relating to children. According to Kirmayer et al. (2011), cultural systems of healing derive their power not merely from specific techniques. But the relational meaning systems and ecological meaning systems within which they are embedded. The consensus among professionals about the structural gap is thin, so this would mean little, if not nothing, in practical terms nor impact on the ground. Chandler and Lalonde have found that aspects of cultural continuity, particularly the active maintenance of traditions, can actually be measured as a protective factor against psychosocial adversity in community settings.

Elders of the community surveyed are the major custodians of the TEK. All older respondents learned about traditional childcare from practicing and experiencing it, as a result, they had personally used that practice for trauma resolution. With an average age of 71.3 years, the transmission issue appears urgent. Importantly, all elder respondents disagreed that the younger generations are interested in learning traditional practices. Furthermore, the majority of respondents indicated that transmission is not happening effectively. As a result, the subdomain transmission has the lowest subdomain score in the elder dataset. This finding unveiled a significant factor, as Chowdhoree (2019) found that communities that effectively retain and transfer knowledge between generations are substantially more disaster resilient. They recover faster and are better able to retain community healing techniques. The opposite – decline of transmission – means not just cultural loss but also functional loss of mental health infrastructure at the community level. Moreover, Choudhury et al. (2021) illustrate that the depth of the ecological knowledge repertoire in coastal Bangladesh makes it the core adaptive strength, so that the collapsing of transmission will not only be a cultural loss but also a structural weakening of community resilience capacity.

Caregivers have moderate levels of TEK knowledge. However, they have a much higher engagement in practice and perceived effectiveness. This implies that caregiving TEK functions through embodied practice and transmitted experience rather than declaration of knowledge. Caregivers have demonstrated ongoing informal engagement with TEK. They often sing traditional songs and lullabies, tell traditional stories, take children to natural places for healing, prepare traditional foods during emotional distress, and rarely seek elder advice. Across all modalities, perceived effectiveness was rated as high, with storytelling being rated the most effective and contact with nature and community gatherings also rated highly. What most people on the outside fail to realize is that these practices are already in use. They constitute a community mental health system that operates independently of any formal institutional framework. The results support Ungar's (2011) social-ecological model of resilience, which views the resilience of children not as an individual quality but rather as a function of their ability to negotiate and change their relationship with their ecology and society. This study found that caregivers mediating navigation through TEK. The qualitative data gives validation to this function as well. As these activities are voluntary, informal and unsupported by any institution, it is not evidence of their marginality, it is evidence of their robustness. According

to Masten (2021), the “ordinary magic” of everyday caregiving resources in functioning families and communities drives children’s recovery in most post-disaster contexts. These study caregivers show ordinary magic. The institutional support policy implication is to create and continue an existing system rather than disrupt it.

Mental health experts recorded the clinical severity of post disaster child mental health sequelae. The results are in accordance with previous literature. Goldmann and Galea (2014) found that victims of climate disasters experience a wide range of psychological conditions such as PTSD, depression, anxiety, phobias, sleep and attachment difficulties. Children who are affected by climate change experience greater psychological distress than those who are not (Burke et al., 2019) Kabir et al. (2016) showed that children in Bangladesh suffered anxiety, chronic depression, behavioural difficulties months after Cyclones. According to Dyregrov and Yule (2006), trauma’s verbal expression is developmentally limited in very young children. Therefore, this kind of children’s culturally embedded and non-verbal healing practice such as songs, touch, nature contact, and ritual is especially appropriate.

The children dataset suggests that Disaster Awareness is a strong predictor of Emotional Wellbeing, which has a significant statistical and theoretical effect. A large effect size means the emotional wellbeing of children understanding disaster phenomenon which interpret environmental signals and are not consumed with storm-recurrence anxiety is substantially better. The finding challenges the widely held view in disaster mental health programming that making young children aware of disasters poses a risk because it heightens their fear. According to the information here, it is not knowledge that fuels fear but rather ignorance. When the larger context in which comprehension occurs is culturally coherent, that leads to less, rather than more, anxiety after a disaster. The research finding is in line with Chandler and Lalonde (2008) evidence, which shows that having a cultural continuity (including intergenerational transmission of ecological knowledge) is a measurable protective factor for psychosocial wellbeing.

From all stakeholders, four TEK modalities were noted as particularly relevant in terms of promoting emotional reparation with children after disasters. The TEK consists of traditional songs and lullabies, stories or tales, nature activities and community ceremonies or rituals. The literature well substantiates the therapeutic rationale of these modalities. Gone (2013) notes that storytelling is the best way for the indigenous to pass on effective coping strategies to their (culturally) appropriate generations and that stories are developmentally fit vehicles for meaning-making after trauma. Further, the practices correspond with the operative pathways of indigenous healing as identified by Kirmayer et al. (2011), which include embedding distress in a collective and cosmological frame, re-engaging attachment relations and deploying nature-based resources. For young children aged 3–8, for whom verbal articulation of traumatic experience is developmentally constrained (Dyregrov & Yule, 2006), narrative serves an embodied, relational, and cognitive resource at the same time. The caregiver stories examined more than once in this study of Bon Bibi embody this function: they frame disaster not as

capricious punishment but as meaningful within a protective cultural cosmology, thus lessening a key source of anxiety that underpins much post-disaster psychopathology in young children.

The most structurally significant finding is the persistent gap between professional endorsement of TEK and professional capacity to integrate it. Structural obstacles were most common. The above reflections of barriers are commonly seen in low- and middle-income countries context. According to Patel et al. (2018), clinical interventions created in the west are focused on and do not encourage scalability. Islam and Walkerden (2015) refer to the omission of local knowledge in planning disaster response in Bangladesh. According to Makhubela (2021), indigenous systems of healing are linked to ancestral and collective systems and cannot be disaggregated without losing effectiveness. The simple add-on integration model does not suffice. Jongen et al. (2023) observed that approaches informed by TEK often exist at the community level following a disaster, but they are seldom captured in formal programme documentation. Pedersen et al. (2021) identify the essential conditions for community engagement with respect to cultural protocols as intensive and authentic community involvement. This study named the systemic roots professionals precisely.

In addition to it, the combined result across all five stakeholder groups is a substantial multilayered gap between community-held TEK and institutional systems. The gap operates at the epistemic level (the institutional framework does not recognise TEK), and there is no policy mandate or funding mechanism for action (structural level), the professional who could carry out the work and connect communities and clinics do not exist (practical level), and TEK practices are not systematically documented anywhere in the policy ecosystem (documentary level). The document review revealed that no national ECD policy or disaster response framework actually reviewed includes TEK based practice guidelines. This gap exists because the international mental health and ECD paradigm, according to Makhubela, is founded on Western biomedical frameworks that devalue indigenous healing systems since they cannot be separated from their spiritual, ecological and relational contexts without losing their efficacy. The syncretic healing landscape of coastal Bangladesh, which is described by Haque et al. (2018), provides multiple pathways for disaster processing. Here, Islamic and indigenous healing practices are merged through collective prayer, ritual purification, and communal commemoration. This information is found in formal policy instruments of Bangladesh. Undoubtedly, invisibility isn't the same as benign neglect. Rather, it actively disadvantages communities where the bulk of available mental health resources exist beyond their institutional recognition.

One unique aspect of this study is the identification of climate change as the primary contributor to the mental health burden faced by children, as well as the active threat to the healing resources used. The neuropsychological basis of community ecological knowledge in coastal Bangladesh has been mapped recently by Choudhury et al (2021). As it shows, community ecological knowledge is deep-rooted in local environmental observation. Therefore, any degradation of that environment will degrade not only the material resources but also the

epistemic system in question. This creates a recursive logic of crisis that existing resilience frameworks do not articulate. Climate disasters create the conditions for TEK-based healing to be necessary while destroying the ecological conditions TEK depends upon. According to Berkes (2018), TEK has the capacity to adapt, but they argue that such adaptation assumes the continued survival of the ecological systems. Climate impact in coastal Bangladesh is expected to worsen (IPCC, 2022), suggests the cumulative vulnerability. Thus, the policy response must be accompanied by urgent documentation and ecological restoration.

7. Recommendations

The integrated quantitative and qualitative findings of this study recommends the following sets of recommendations to various actors at the policy, professional, community and research levels.

- Including Traditional Ecological Knowledge (TEK) for Disaster Response. Psychosocial response teams in formal disaster response frameworks should include traditional knowledge holders. Positions for community liaison should be established and resourced in NGO and government settings to connect formal services and community practice.
- Research the Effectiveness of TEK There was strong agreement from both ECD professionals and mental health professionals that government research funding was paramount. A solid research programme must document and validate integrated traditional-modern approaches using participatory and multi-modal methods that honour the embodied nature of the TEK.
- Update professional training programs Inclusion in ECD training programs are particular modules on recognizing and responding to eco-knowledge. ECD professionals in this study almost had zero TEK awareness, even though many endorsed it. The local university and community elders ought to co-develop the training
- Create assessment tools suitable for culture. According to ECD professionals, the lack of culturally relevant developmental assessment tools serves as a barrier to accurate diagnosis. Urgent action is needed to co-develop a national embryonic development assessment framework based on TEK and culture.
- Alter the Program Design in Favor of Community Co-design Frameworks The criticisms leveled by ECD professionals that universally standardized frameworks impose inappropriate metrics and exclude cultural outcomes are credible and documented and have been made before. UNICEF, BRAC, Save the Children and other actors working in disaster-affected coastal Bangladesh should commit to co-design processes positioning community members as programme architects.
- Participatory documentation of TEK practices must be funded to avoid loss. All documentation should be crafted in formats suitable for non-textual knowledge that is,

audio-visual recording and community owned and controlled with clear protocols of protection against commercial exploitation or extractive use.

8. Conclusion

Studies of all five stakeholder groups point to a clear conclusion: TEK is not a historical relic. TEK is a living system that supports child mental health in coastal Bangladesh. Elders hold the knowledge at high confidence, but transmission has collapsed. Three urgent structural challenges are: (1) Intergenerational transmission of knowledge crisis, the depth of knowledge, and its effective transmission, are becoming dramatically decoupled; (2) the consensus-implementation gap – high levels of professional agreement on the value of TEK, does not lead to high levels of action; (3) Ecological compounding – climate change is introducing mental health trauma that requires TEK-based healing, while progressively destroying the ecological landscapes in which healing is embedded. A policy response at a systems level, drafted with communities, not for them, is what the evidence calls for. Project pilots and individual-level training would not suffice. Time is running out, the elders who know how to do it are ageing, the medicinal plants are disappearing, and the children who need healing are already here.

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Supplementary Tables

Table 1.1: Elders' responses (n=30)

Elders overwhelmingly reported strong engagement with traditional knowledge systems. All respondents indicated that they had learned traditional childcare practices through experience (n=30, 100%) and consistently used these practices for trauma recovery (n=30, 100%). A large majority also reported frequent intergenerational transmission of coping knowledge (n=20, 66.7% very often; n=10, 33.3% often) and perceived traditional mental health knowledge as equally valuable as modern psychology (n=20, 66.7% very often). Despite strong reliance on these practices, elders highlighted significant challenges: all respondents disagreed that younger generations were interested in learning (n=30, 100% disagree), and most indicated limited opportunities to pass on knowledge (n=20, 66.7% neutral; n=10, 33.3% disagree). While parents actively sought elders' advice (n=30, 100% agree), the majority felt that knowledge transmission is not occurring effectively (n=20, 66.7% disagree). Traditional approaches such as storytelling (n=30, 100% very often), natural remedies (n=30, 100%), and community rituals (n=20, 66.7% very often) were perceived as highly effective for child recovery. Furthermore, most elders agreed that traditional knowledge is being lost (n=20, 66.7% strongly agree) and threatened by environmental and societal changes. Strong support was expressed for integrating traditional knowledge into formal systems, including government response (n=20, 66.7% strongly agree) and financial preservation efforts (n=30, 100%) (Table 1.1).

Subsection	B1: Knowledge Custodianship	Never	Rarely	Sometimes	Often	Very Often	Mean
B1.1	I possess extensive knowledge of traditional practices for helping children cope with disasters that passed down through many generations.	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67
B1.2	I learned most of my traditional knowledge about child care from my elders through direct observation and practice.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	5
B1.3	I have personal experience using traditional practices to help children recover from traumatic events.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	5
B1.4	Our community's traditional knowledge about child mental health is as valuable as modern psychology.	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67

Subsection B2: Knowledge Transmission Effectiveness	Never	Rarely	Sometimes	Often	Very Often	Mean
B2.1 Younger generations in my community are actively interested in learning traditional practices.	0 (0.0%)	30 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2
B2.2 I have regular opportunities to teach traditional knowledge to children and families.	0 (0.0%)	10 (33.3%)	20 (66.7%)	0 (0.0%)	0 (0.0%)	2.67
B2.3 Parents in my community seek my advice about traditional ways to help their children.	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	0 (0.0%)	4
B2.4 Traditional knowledge is being successfully passed to the next generation in my community.	0 (0.0%)	20 (66.7%)	10 (33.3%)	0 (0.0%)	0 (0.0%)	2.33

Subsection B3: Observed Effectiveness	Never	Rarely	Sometimes	Often	Very Often	Mean
B3.1 Children who receive traditional care after disasters recover faster emotionally than those who don't.	0 (0.0%)	10 (33.3%)	10 (33.3%)	0 (0.0%)	10 (33.3%)	3.33
B3.2 Traditional storytelling is highly effective for helping children process frightening experiences.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	5
B3.3 Natural remedies from our environment work well for calming anxious children.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	5
B3.4 Community ceremonies and rituals significantly help children feel safe after disasters.	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67
B3.5 Children who maintain a connection to nature and traditional practices grow up more resilient.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	5

Subsection B4: Challenges	Never	Rarely	Sometimes	Often	Very Often	Mean
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and Erosion

B4.1 Traditional knowledge about child mental health is being rapidly lost in my community.	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67
B4.2 Environmental changes (loss of plants, pollution) make it harder to practice traditional healing.	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67
B4.3 Modern education and healthcare systems discourage people from using traditional practices.	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	0 (0.0%)	3.67
B4.4 Younger people view traditional practices as outdated or unscientific.	0 (0.0%)	0 (0.0%)	10 (33.3%)	10 (33.3%)	10 (33.3%)	4

Section C: Community Dynamics And Support	Very Mild	Mild	Moderate	Severe	Very Severe	Mean
C1 Our community effectively comes together to support children's emotional wellbeing after disasters.	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67
C2 Extended family members actively participate in traditional healing practices for children.	0 (0.0%)	0 (0.0%)	10 (33.3%)	10 (33.3%)	10 (33.3%)	4
C3 Both men and women in my community possess important traditional knowledge about child care.	0 (0.0%)	0 (0.0%)	10 (33.3%)	10 (33.3%)	10 (33.3%)	4
C4 Community leaders value and promote traditional practices for children's mental health.	0 (0.0%)	10 (33.3%)	10 (33.3%)	10 (33.3%)	0 (0.0%)	3

Section D: Policy Integration Needs	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
D1 Government disaster response should incorporate traditional knowledge	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67
D2 Traditional knowledge holders should be consulted in child mental health programs	0 (0.0%)	0 (0.0%)	0 (0.0%)	20 (66.7%)	10 (33.3%)	4.33

D3 Schools should include traditional coping knowledge in curriculum	0 (0.0%)	0 (0.0%)	20 (66.7%)	0 (0.0%)	10 (33.3%)	3.67
D4 Health workers should respect and work alongside traditional healing	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (33.3%)	20 (66.7%)	4.67
D5 Financial support should preserve and document traditional knowledge	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	30 (100.0%)	5

Table 3.1: MH Professionals' responses (n=14)

Mental health professionals reported a high prevalence of child mental health issues following disasters, particularly sleep disturbances (n=14, 100% very often), anxiety (n=13, 93% very often), depression (n=13, 93%), and separation anxiety (n=13, 93%). However, perceptions of traditional practices varied. Most professionals strongly disagreed that combined traditional and modern approaches improve outcomes (n=13, 93% strongly disagree), and similarly rejected the therapeutic value of storytelling (n=13, 93% disagree). In contrast, nature-based interventions (n=8, 57% strongly agree) and elder involvement (n=9, 64% strongly agree) were viewed positively. Professionals perceived integrated approaches as more effective for long-term recovery (n=10, 71% agree) and community reintegration (n=14, 100% strongly agree), but less effective for acute trauma (n=12, 86% disagree). Notably, all respondents reported a lack of experience integrating traditional practices (n=14, 100% strongly disagree) and insufficient training (n=14, 100% strongly disagree), while the majority indicated a strong need for further training (n=11, 79% strongly agree). Significant barriers were identified, including service access limitations and stigma (n=14, 100% very severe) (Table 3.1).

Subsection B1: Mental Health Impact of Climate Disasters	Never	Rarely	Sometimes	Often	Very Often	Mean
B1.1: Post-Traumatic Stress Disorder (PTSD) symptoms	0 (0%)	8 (57%)	3 (21%)	3 (21%)	0 (0%)	2.64
B1.2: Anxiety disorders	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93
B1.3: Depression	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93
B1.4: Sleep disturbances	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)	5
B1.5: Behavioral problems (aggression, regression)	0 (0%)	0 (0%)	0 (0%)	12 (86%)	2 (14%)	4.14
B1.6: Attachment disruptions	0 (0%)	0 (0%)	1 (7%)	13 (93%)	0 (0%)	3.93
B1.7: Separation anxiety	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93
Subsection B2: Traditional Healing Practices and Observation:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B2.1: Regularly observe families using traditional healing practices with traumatized children.	13 (93%)	1 (7%)	0 (0%)	0 (0%)	0 (0%)	1.07
B2.2: Traditional storytelling and narrative practices have	0 (0%)	13 (93%)	1 (7%)	0 (0%)	0 (0%)	2.07

therapeutic value for child trauma processing

B2.3: Community-based rituals and ceremonies effectively support children's emotional recovery. 1 (7%) 8 (57%) 4 (29%) 1 (7%) 0 (0%) 2.36

B2.4: Nature-based interventions (plant remedies, natural settings) positively impact children's anxiety levels. 0 (0%) 0 (0%) 2 (14%) 4 (29%) 8 (57%) 4.43

B2.5: Grandparent and elder involvement enhances children's sense of safety and security. 0 (0%) 0 (0%) 1 (7%) 4 (29%) 9 (64%) 4.57

Subsection B3: Comparative Effectiveness Assessment	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B3.1: Children receiving both traditional and modern mental health support show	0 (0%)	0 (0%)	1 (7%)	0 (0%)	0 (0%)	3
B3.2a: Traditional approaches are most effective for acute trauma response	0 (0%)	12 (86%)	1 (7%)	1 (7%)	0 (0%)	2.21
B3.2b: Traditional approaches are most effective for long-term recovery	0 (0%)	0 (0%)	1 (7%)	10 (71%)	3 (21%)	4.14
B3.2c: Traditional approaches are most effective for family system healing	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93
B3.2d: Traditional approaches are most effective for community reintegration	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)	5

Subsection B4: Clinical Integration Experience	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B4.1; Successfully integrated traditional practices into my clinical work with children.	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1
B4.2; Collaborate effectively with traditional healers and community elders.	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1

B4.3: Traditional practices complement evidence-based psychological treatments.	0 (0%)	0 (0%)	1 (7%)	5 (36%)	8 (57%)	4.5
B4.4: Cultural identity and traditional practices are protective factors for child mental health.	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93
B4.5: Families are more engaged in treatment when traditional practices are respected and incorporated.	0 (0%)	0 (0%)	1 (7%)	4 (29%)	9 (64%)	4.57
Subsection B5: Professional Training and Competency	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B5.1: Professional training adequately prepared me to work with traditional knowledge systems.	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1
B5.2: Possess cultural competency to work effectively with traditional healing practices.	13 (93%)	1 (7%)	0 (0%)	0 (0%)	0 (0%)	1.07
B5.3: Understand the theoretical basis for how traditional practices support mental health.	0 (0%)	1 (7%)	2 (14%)	9 (64%)	2 (14%)	3.86
B5.4: Need additional training to better integrate traditional and modern approaches.	0 (0%)	0 (0%)	0 (0%)	3 (21%)	11 (79%)	4.79
Section C: Barriers and Challenges in Clinical Practice	No	Mild	Moderate	Severe	Very Severe	Mean
C1: Limited access to mental health services in rural communities restricts my ability to reach affected children.	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)	5
C2: Stigma around mental health prevents families from seeking professional help.	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)	5
C3: Language and cultural barriers make it difficult to deliver effective interventions.	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1
C4: Insufficient funding limits the scope and duration of mental health services I can provide.	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93

C5: Lack of culturally adapted assessment tools makes it challenging to accurately diagnose children.	0 (0%)	0 (0%)	0 (0%)	11 (79%)	3 (21%)	4.21
Section D: Professional Recommendations	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
D1: Mental health professional training should include substantial content on traditional healing systems.	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93
D2: Standard clinical protocols should allow flexibility to incorporate traditional practices.	0 (0%)	0 (0%)	0 (0%)	1 (7%)	13 (93%)	4.93
D3: Research funding should prioritize studies documenting effectiveness of integrated traditional-modern approaches.	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)	5
D4: Mental health services should employ community liaisons who understand traditional practices.	0 (0%)	0 (0%)	1 (7%)	7 (50%)	6 (43%)	4.36

Table 4.1: ECD Professionals' responses (n=9)

ECD professionals demonstrated limited awareness and engagement with traditional ecological knowledge (TEK), with all respondents reporting a lack of substantial knowledge (n=9, 100% strongly disagree) and the absence of integration into programs (n=9, 100%). Similarly, consultation with elders and staff preparedness were universally lacking (n=9, 100% strongly disagree). Despite this, strong agreement was observed regarding the effectiveness of traditional practices, including storytelling (n=6, 66.7% strongly agree), community-based

approaches (n=7, 77.8%), and intergenerational caregiving (n=9, 100%). Barriers included insufficient policy support (n=9, 100% agree) and lack of research evidence (n=8, 88.9% agree/strongly agree). Participants strongly endorsed future integration, with universal agreement on community acceptance (n=9, 100%) and benefits of hybrid approaches (n=6, 66.7% strongly agree) (Table 4.1).

Subsection B1: TEK Awareness and Knowledge	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B1.1: Substantial knowledge of TEK practices used in the communities I serve	9 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1
B1.2: Regularly observe families using traditional practices to support children's mental health	7 (77.8%)	1 (11.1%)	0 (0.0%)	1 (11.1%)	0 (0.0%)	1.44
B1.3: Traditional knowledge holders (elders, healers) possess valuable expertise about child mental health.	6 (66.7%)	3 (33.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1.33
B1.4: Understand how traditional practices align with evidence-based child development principles	0 (0.0%)	0 (0.0%)	3 (33.3%)	5 (55.6%)	1 (11.1%)	3.78

Subsection B2: Observed Effectiveness of TEK	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B2.1: Children who receive both traditional and modern support show better recovery outcomes than those receiving only modern interventions.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	NA
B2.2: Traditional storytelling and songs effectively help children process trauma	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (33.3%)	6 (66.7%)	4.67
B2.3: Community-based traditional practices enhance children's sense of belonging and security	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (22.2%)	7 (77.8%)	4.78
B2.4: Nature-based traditional interventions positively impact	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)	4.33

children's regulation	emotional							
B2.5: Intergenerational caregiving involvement) strengthens children's resilience	(grandparent	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	5	

Subsection	B3: Program Integration Current State	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B3.1:	Organization's ECD programs currently incorporate traditional knowledge and practices.	9 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1
B3.2:	Actively consult with community elders when designing child mental health interventions	9 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1
B3.3:	Staff members are trained to recognize and respect traditional child care practices.	9 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1
B3.4:	Systematically document traditional practices that families find helpful	9 (100.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	0 (0.0%)	NA

Subsection	B4: Barriers to Integration	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B4.1:	Lack of funding prevents us from incorporating traditional knowledge into our programs.	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)	0 (0.0%)	3.22
B4.2:	National policies do not adequately support the integration of traditional practices in ECD programs.	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	0 (0.0%)	4
B4.3:	There is insufficient research evidence documenting the effectiveness of traditional practices.	0 (0.0%)	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)	4.22
B4.4:	Some traditional practices conflict with modern child development	0 (0.0%)	3 (33.3%)	6 (66.7%)	0 (0.0%)	0 (0.0%)	2.67

standards or safety protocols.

B4.6: Professional training programs do not prepare us to work with traditional knowledge systems.

0 (0.0%)	0 (0.0%)	1 (11.1%)	5 (55.6%)	3 (33.3%)	4.22
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Subsection B5: Professional Attitudes and Beliefs	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
B5.1: Traditional practices are compatible with evidence-based early childhood development principles.	0 (0.0%)	2 (22.2%)	3 (33.3%)	4 (44.4%)	0 (0.0%)	3.22
B5.2: Integrating traditional knowledge would improve the cultural relevance of our ECD programs.	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (33.3%)	6 (66.7%)	4.67
B5.3: Community acceptance of ECD interventions increases when traditional practices are included.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	5
B5.4: Traditional knowledge holders should be recognized as valuable partners in ECD programming.	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (33.3%)	6 (66.7%)	4.67
B5.5: A hybrid approach combining traditional and modern methods is ideal for child mental health support.	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (33.3%)	6 (66.7%)	4.67

Section C: Developmental Assessment	Impact	No	Mild	Moderate	Severe	Very Severe	Mean
C1: Cognitive Development (Attention, memory, problem-solving)		0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	0 (0.0%)	4
C2: Language Development (Verbal expression, comprehension)		0 (0.0%)	0 (0.0%)	3 (33.3%)	6 (66.7%)	0 (0.0%)	3.67
C3: Social-Emotional Development (Attachment, emotional regulation)		0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	5
C4: Physical Development (Motor skills, sleep, appetite)		0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)	0 (0.0%)	3.33

C5: Behavioural Regulation (Aggression, compliance, self-control)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	0 (0.0%)	4
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Section D: Policy Recommendations	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean
D1: National ECD policies should mandate inclusion of traditional knowledge in disaster response	1 (11.1%)	6 (66.7%)	2 (22.2%)	0 (0.0%)	0 (0.0%)	2.11
D2: ECD professional training curricula should include modules on traditional ecological knowledge.	5 (55.6%)	4 (44.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1.44
D3: Government funding should support research documenting traditional practices for child mental health.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	5
D4: Community elders should receive financial compensation for their role in ECD programs.	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (66.7%)	3 (33.3%)	4.33
D5: Standard assessment tools for child development should incorporate culturally relevant indicators.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (100.0%)	5

Table 5.1: Caregivers' responses (n=45)

Caregivers demonstrated mixed levels of knowledge but high engagement in practice. While many reported limited personal knowledge of traditional remedies (n=21, 46.7% disagree; n=17, 37.8% strongly disagree), strong recognition of elder knowledge was evident (n=31, 68.9% strongly agree). Traditional practices such as storytelling (n=27, 60% often), songs (n=28, 62.2% often), and seeking elder advice (n=21, 46.7% always) were widely practiced. Caregivers reported high perceived effectiveness, particularly for storytelling (n=26, 57.8% very; n=19, 42.2% extremely) and nature-based approaches (n=24, 53.3% extremely). Concerns about declining transmission were substantial, with most agreeing that younger generations are less interested (n=23, 51.1% strongly agree) and that environmental changes pose challenges (n=37, 82.2% strongly agree). Child mental health impacts were evident, particularly anxiety (n=33, 73.3% always) and sleep disturbance (n=24, 53.3% often). Community support was moderate, but formal support systems were weak (n=21, 46.7% neutral). Overwhelming support was expressed for integrating traditional knowledge into policy, education, and healthcare (≥80% strongly agree across items) (Table 5.1).

Subsection	B1: Strongly Disagree	Disagree	Neutral/Undecided	Agree	Strongly Agree	Mean
Knowledge Awareness						
B1.1 I have extensive knowledge of traditional practices passed down from my grandparents for caring for children during difficult times.	19 (42.2%)	15 (33.3%)	6 (13.3%)	4 (8.9%)	1 (2.2%)	1.96
B1.2 My community has specific traditional stories that help children cope with fear after natural disasters.	2 (4.4%)	3 (6.7%)	15 (33.3%)	17 (37.8%)	8 (17.8%)	3.58
B1.3 I know which medicinal plants from nature can calm anxious or frightened children	17 (37.8%)	21 (46.7%)	3 (6.7%)	0 (0.0%)	4 (8.9%)	1.96
B1.4 Traditional songs and lullabies	0 (0.0%)	0 (0.0%)	4 (8.9%)	20 (44.4%)	21 (46.7%)	4.38

comfort distressed
children

B1.5 Our elders possess valuable knowledge about helping children recover emotionally from disasters.	0 (0.0%)	0 (0.0%)	0 (0.0%)	14 (31.1%)	31 (68.9%)	4.69
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Subsection B2: Frequency of Practice	Never	Rarely	Sometimes	Often	Always	Mean
B2.1 I tell traditional stories to my children when they are scared or upset after disasters.	0 (0.0%)	0 (0.0%)	12 (26.7%)	27 (60.0%)	6 (13.3%)	3.87
B2.2 I sing traditional songs or lullabies to comfort my children during difficult times.	0 (0.0%)	0 (0.0%)	6 (13.3%)	28 (62.2%)	11 (24.4%)	4.11
B2.3 I use natural remedies or herbal treatments when my children cannot sleep or feel anxious.	2 (4.4%)	6 (13.3%)	16 (35.6%)	21 (46.7%)	0 (0.0%)	3.24
B2.4 I perform specific rituals or ceremonies to help my children feel safe after disasters.	0 (0.0%)	3 (6.7%)	13 (28.9%)	26 (57.8%)	3 (6.7%)	3.64
B2.5 I take my children to natural places (rivers, trees, fields) to help them feel better after disasters.	0 (0.0%)	0 (0.0%)	6 (13.3%)	35 (77.8%)	4 (8.9%)	3.96
B2.6 I prepare traditional foods for my children when they are emotionally distressed.	0 (0.0%)	0 (0.0%)	7 (15.6%)	30 (66.7%)	8 (17.8%)	4.02
B2.7 seek advice from community elders about traditional ways to help my children cope with stress.	0 (0.0%)	0 (0.0%)	8 (17.8%)	16 (35.6%)	21 (46.7%)	4.29

Subsection B3: Perceived Effectiveness	Not at all	Slightly	Moderately	Very	Extremely	Mean
B3.1 Traditional storytelling effectively helps my children process and overcome their fears.	0 (0.0%)	0 (0.0%)	0 (0.0%)	26 (57.8%)	19 (42.2%)	4.42
B3.2 Natural remedies work better than modern medicine for calming my anxious children.	0 (0.0%)	2 (4.4%)	39 (86.7%)	4 (8.9%)	0 (0.0%)	3.04

B3.3 Traditional practices help my children recover from trauma faster than other approaches.	0 (0.0%)	0 (0.0%)	11 (24.4%)	21 (46.7%)	13 (28.9%)	4.04
B3.4 Community gatherings and social events significantly improve my children's emotional well-being after disasters.	0 (0.0%)	0 (0.0%)	0 (0.0%)	34 (75.6%)	11 (24.4%)	4.24
B3.5 Contact with nature (plants, water, earth) has a strong healing effect on my children's mental state.	0 (0.0%)	0 (0.0%)	0 (0.0%)	21 (46.7%)	24 (53.3%)	4.53

Subsection	B4:	Strongly Disagree	Disagree	Neutral/ Undecided	Agree	Strongly Agree	Mean
Intergenerational Transmission							
B4.1 I actively teach my children the traditional practices I learned from my parents and grandparents.	0 (0.0%)	12 (26.7%)	7 (15.6%)	12 (26.7%)	14 (31.1%)		3.62
B4.2 It is important for my children to know traditional ways of coping so they can help others in the future.	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (11.1%)	40 (88.9%)		4.89
B4.3 Grandparents play a crucial role in teaching my children how to cope with difficult situations.	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 (15.6%)	38 (84.4%)		4.84
B4.4 Traditional knowledge about child care is being lost in our community and needs to be preserved.	0 (0.0%)	0 (0.0%)	1 (2.2%)	34 (75.6%)	10 (22.2%)		4.2

Subsection	B5: Barriers and Challenges	Strongly Disagree	Disagree	Neutral/Undecided	Agree	Strongly Agree	Mean
B5.1	It is difficult to continue traditional practices in today's changing environment	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (17.8%)	37 (82.2%)	4.82
B5.2	Younger family members are less interested	0 (0.0%)	0 (0.0%)	0 (0.0%)	22 (48.9%)	23 (51.1%)	4.51

in learning traditional practices								
B5.3 Modern education systems discourage traditional ways of caring for children	5 (11.1%)	5 (11.1%)	33 (73.3%)	2 (4.4%)	0 (0.0%)	2.71		
B5.4 Natural resources needed for traditional practices are becoming scarce	0 (0.0%)	0 (0.0%)	0 (0.0%)	44 (97.8%)	1 (2.2%)	4.02		
B5.5 People view traditional practices as old-fashioned or unscientific	0 (0.0%)	13 (28.9%)	21 (46.7%)	8 (17.8%)	3 (6.7%)	3.02		
Subsection C1: Observed Child Resilience	Never	Rarely	Sometimes	Often	Always	Mean		
C1.1: Children recover emotionally from frightening experiences relatively quickly.	0 (0.0%)	0 (0.0%)	4 (8.9%)	8 (17.8%)	33 (73.3%)	4.64		
C1.2: After disasters, my children continue to play and interact normally with other children.	0 (0.0%)	8 (17.8%)	13 (28.9%)	24 (53.3%)	0 (0.0%)	3.36		
C1.3: My children have fewer nightmares and sleep problems after using traditional calming practices.	0 (0.0%)	0 (0.0%)	8 (17.8%)	33 (73.3%)	4 (8.9%)	3.91		
My children show positive changes in mood and behavior when traditional practices are used.	0 (0.0%)	0 (0.0%)	8 (17.8%)	23 (51.1%)	14 (31.1%)	4.13		
C1.5: My children demonstrate confidence and hope about the future despite difficult experiences.	0 (0.0%)	2 (4.4%)	13 (28.9%)	24 (53.3%)	6 (13.3%)	3.76		
Section D: Community and Social Support	Never	Rarely	Sometimes	Often	Always	Mean		
D1 My community comes together effectively to support families with young children after disasters.	0 (0.0%)	0 (0.0%)	6 (13.3%)	23 (51.1%)	16 (35.6%)	4.22		

D2 Community elders provide valuable emotional support to children affected by disasters.	12 (26.7%)	2 (4.4%)	1 (2.2%)	17 (37.8%)	13 (28.9%)	3.38
D3 Traditional ceremonies and gatherings help our community heal collectively after disasters.	0 (0.0%)	0 (0.0%)	0 (0.0%)	26 (57.8%)	19 (42.2%)	4.42
D4 Neighbors and extended family actively participate in caring for traumatized children.	12 (26.7%)	8 (17.8%)	21 (46.7%)	4 (8.9%)	0 (0.0%)	2.38
Section E: Policy and Support Expectations	Never	Rarely	Sometimes	Often	Always	Mean
E1 Government policies should include traditional knowledge in disaster response programs.	0 (0.0%)	0 (0.0%)	0 (0.0%)	9 (20.0%)	36 (80.0%)	4.8
E2 Schools should teach children about traditional ways of coping with stress and disasters.	0 (0.0%)	0 (0.0%)	0 (0.0%)	8 (17.8%)	37 (82.2%)	4.82
E3 Health workers should be trained to recognize and respect traditional child care practices.	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (8.9%)	41 (91.1%)	4.91
E4 More resources should be allocated to preserve and document traditional knowledge.	0 (0.0%)	0 (0.0%)	1 (2.2%)	8 (17.8%)	36 (80.0%)	4.78
E5 Community elders should be involved in designing child mental health programs.	0 (0.0%)	0 (0.0%)	1 (2.2%)	19 (42.2%)	25 (55.6%)	4.53

Table 6.1. Theme 1

S.NO	Selected Quote	Stakeholder
1	During Cyclone Amphan, when my children couldn't sleep, I sang 'Ghum Parani Mashi Pishi' that my mother taught me. Within minutes, my youngest stopped crying and fell asleep. The familiar melody calmed them when everything outside was chaos.	A 37-year-old female from Dacope (R001)
2	I know many songs from my grandmother's time - songs about the river, the forest, and Bon Bibi. After every disaster, I sing to all the neighbourhood children, not just my own. The songs are medicine.	A 51-year-old female from Dacope (R008)
3	During Aila, I performed the rituals my mother taught me - lighting a diya, reciting prayers, tying sacred thread on my children's wrists. They felt protected by something bigger than the storm.	A 44-year-old female Dacope (R014)
4	I cannot read the Quran, but I know many surahs by heart. During Sidr, I recited Ayatul Kursi with my children until they fell asleep. The Arabic words themselves have calming power, even if children don't understand the meaning.	A 38-year-old female from paikgacha (R035)
5	I learned from my mother to always keep dried tulsi leaves and ginger at home. During the Sidr aftermath, when my children had a fever and no doctor was available, this simple tea saved us. Preparation is key.	A 36-year-old paikgacha (R039)
6	I am a Muslim but I know the Hindu traditions too - we all lived together, learned together. I know Islamic duas for protection and also the stories of Bon Bibi. During disasters, religion doesn't matter - we all need comfort. I use whatever works to calm frightened children.	A 75 years old male (E003)
7	I know the old farming rituals - the prayers before planting, the harvest festivals, the offerings to nature spirits. These rituals teach children respect for nature. When children respect nature, they understand disasters as nature's pain, not punishment. This reduces fear.	A 75-year-old male (E015)
8	I specialize in the children's games that teach disaster skills - games about climbing, swimming, holding on, and calling for help. These were traditional games, but they had survival purposes. Children learned through play what to do in emergencies.	A 69-year-old man (E019)

Table 6.2. Theme 2

S.NO	Selected Quote	Stakeholder
1	During Cyclone Amphan, when my children couldn't sleep, I sang 'Ghum Parani Mashi Pishi' that my mother taught me. Within minutes, my youngest stopped crying and fell asleep. The familiar melody calmed them when everything outside was chaos.	R001 37-year-old mother from Dacope
2	I keep tulsi and neem plants at home. During Bulbul, I made tulsi tea for my children's anxiety. My education helps me understand why these plants work - they really do have calming properties.	R010 40 years old Mother from Dacope
3	My research shows that children who receive both clinical support and traditional family practices recover faster. Grandmothers' lullabies activate the same calming neural pathways that modern relaxation techniques target. The science is there - we just haven't documented it formally.	ECD002 Child Psychologist & ECD Expert
4	From a public health perspective, traditional practices have measurable outcomes - reduced stress hormones, better sleep, faster recovery. We need to study these systematically.	ECD008 ECD Network (BEN) Treasurer
5	Scared at night, can't sleep	CHD002: 6-year-old Female from Jhulanta Para Dacope
6	See a storm in dreams	CHD016: 7-year-old male from Dakkhin Madinaghat Koyra
7	I see water in a dream and want to cry	CHD006: 6-year-old female from Jhulanta ParaDacope
8	Listen to stories, sleep	CHD002 6-year-old male Jhulanta Para Dacope
9	Ma helps most - sings songs, holds me	CHD001: 7 years old Male Jhulanta Para Dacope
10	Dadi - sings, makes better	CHD013: 6-year-old Male from Dakkhin Madinaghat Koyra
11	Ma - recites prayers	CHD016: 7-year-old male from Dakkhin Madinaghat Koyra
12	Ma hugs tight	CHD028: 5-year-old female from Soladan Paikgacha
13	After Mora, my son had terrible nightmares. I remembered the story of Dakkhin Rai (the tiger god) who protects the	R018 38-year-old mother from Koyra

Sundarbans children. I told him this story every night until the nightmares stopped.

- 14 During Bulbul, my daughter was trembling with fear. I wrapped her in my grandmother's old shawl - the same shawl that comforted me as a child. The familiar smell and texture calmed her immediately.

Table 6.3. Theme 3

S.NO	Selected Quote	Stakeholder
1	Develop culturally sensitive intake protocols that document family healing traditions. Train psychiatric residents in ethnopsychiatry modules covering local practices.	MHP001: Psychiatry, Stress Management, Khulna Medical College & Hospital
2	Develop community-based recovery programs that utilize traditional structures. Create peer support groups led by recovered individuals who can bridge modern and traditional approaches	MHP006: Drug Addiction, Psycho-Sexual Specialist
3	Prescribe 'traditional practice therapy' alongside medication when appropriate. Work with schools to incorporate traditional games and storytelling into curricula as mental health interventions.	MHP005: Behavioral Disorders, Mood Dysregulation
4	Develop a Bangladesh-specific psychology curriculum that incorporates traditional concepts. Create a research agenda documenting and validating local therapeutic practices. Train counsellors in culturally adapted CBT.	MHP012: Psychotherapy, CBT, Mental Health Counselling
5	Create liaison roles between hospital psychiatry and community traditional structures. Develop discharge protocols that activate traditional support networks. Train primary care providers to recognize and support traditional coping.	MHP014: General Psychiatry, Community Mental Health
6	Integrate traditional knowledge holders into formal disaster response teams. Create 'Community Liaison' positions that bridge NGO programs with local practices. Fund rapid documentation of traditional disaster response practices during emergency operations.	ECD005: Program Director - Shishuder Jonno

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| 7 | Academic silos are the problem. Psychologists study 'evidence-based' interventions while anthropologists study traditions - no one connects them. | ECD002: Child Psychologist & ECD Expert, BRAC University |
| 8 | Training curricula are globally standardized - what works in Europe doesn't translate here. When I suggest including local content, I'm told there's no 'evidence base.' We need to create that evidence ourselves. | ECD003: ECD Expert & Master Trainer, UNICEF / BRAC / Sesame Street |
| 9 | International organizations impose their frameworks. Donors want metrics that don't capture cultural outcomes; they're not scalable and standardized approaches aren't culturally appropriate | ECD004: Education Professional & ECD Specialist |
| 10 | Our disaster response protocols don't include traditional practices. Staff are trained in psychological first aid but not in recognizing valuable traditional interventions. When emergencies happen, we miss opportunities to build on existing community strengths. | ECD005: Program Director - Shishuder Jonno, Save the Children Bangladesh |
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Table 6.4. Theme 4

S.NO	Selected Quote	Stakeholder
1	Finding the right materials for rituals is harder now. The sacred plants are disappearing; the river is polluted.	A 45-year-old female from Dacope (R004)
2	I work outside now and have less time with my children. My mother-in-law helps, but she's getting old.	A 35-year-old female from Dacope (R005)
3	That mango tree fell in Amphan. We lost our healing place. New trees take years to grow.	A 29-year-old female from Dacope (R007)
4	I only know a few songs. Wish I had learned more from my grandmother. Now she's gone.	A 33-year-old female Dacope (R009)
5	Climate change is killing our medicinal plants. The salinity in soil destroys them. We're losing our natural pharmacy.	A 40-year-old female from Dacope (R010)
6	I only know a few stories. The elders who knew hundreds of stories are dying. No one is recording them.	A 36-year-old female from Dacope (R013)
7	Some religious leaders say our old rituals are wrong. This confuses people. Our traditions are being attacked”.	A 44 year old female from Dacope (R01444-year-old)
8	I know only a fraction of what my grandmother knew. She died before teaching me everything.	A 42-year-old female from Koyra (R017)
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10	Religious extremists say these stories are shirk (polytheism). I'm confused about what to teach my children now.	A 38-year-old female from Koyra (R018)
11	Writing takes time I don't have. And how do you write down a melody? Or the feeling of a grandmother's hands? Some things can't be documented.	A 35-year-old female from Paikgacha (R045)

- 12 Bangladesh needs a Climate-Resilient ECD Strategy that Bangladesh needs a Climate-Resilient ECD Strategy that formally includes Traditional Knowledge Keepers. We should create a national database of traditional child-calming practices. UNICEF and the government should jointly fund documentation before this knowledge disappears. An ECD Specialist (ECD001)
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