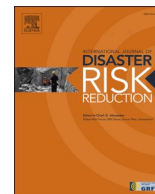




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Framework for strengthening primary health care and community networks to mitigate the long-term psychosocial impact of floods in Kerala

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ABSTRACT

Individuals who encounter disasters experience negative consequences across physical, mental and psychosocial domains. Impacts on mental health and psychosocial domains are more common, and last longer than physical health problems. In August 2018, the state of Kerala, India witnessed unprecedented floods that resulted in 483 deaths and significant loss of property and livelihood. Project “PARIRAKSHA” was implemented by the Government of Kerala, to mitigate the long-term psychosocial impact of the disaster. It has been one of the largest comprehensive post-disaster psychosocial project in India till date, aimed to benefit approximately 2 million people across 93 panchayats which experienced severe flooding and loss of life.

This paper describes the detailed methodology of this project. *In addition, the supplementary material includes the technical manuals that were prepared, and is freely accessible to personnel in disaster affected zones.*

Counsellors were newly appointed in all the primary health centres in affected panchayats to provide mental health and psychosocial support. Accredited Social Health Activists (community level health workers) undertook home-visits to ensure early case-detection. Medical officers’ in affected areas received booster training regarding pharmacological management of mental health issues. Multi-disciplinary mobile mental health teams were constituted to ensure availability of specialised mental health inputs locally.

The project integrated additional mental health resource personnel, into the existing health care system. Existing health care personnel received training to improve competency in dealing with post-disaster

Acronym/Abbreviations: ASHA, Accredited Social Health Activists; DALY, Disability adjusted life years; DMHP, District Mental Health Program; IASC, Inter-Agency Standing Committee; LAMIC, low and middle income countries; MHPSS, Mental health and psychosocial support; NIMHANS, National Institute of Mental Health & Neurosciences (Institute of National Importance for Mental Health in India); PHC, Primary Health Centre; PFA, Psychological first-aid.

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psychosocial issues. This framework is expected to ensure early detection and intervention, thus facilitating timely psychosocial recovery of communities impacted by the floods.

1. Introduction

Individuals who encounter disasters experience a range of negative consequences across physical, mental, and psychosocial domains. Post-disaster emotional and psychosocial problems are most reported, with rates being almost double that of physical health problems [1–3].

Floods are the commonest of natural disasters globally, accounting for nearly 53,000 deaths in the previous decade [3]. Studies on post-flood psychosocial and mental health impacts have reported that these communities experience higher rates of psychological distress, anxiety, depression, somatisation, and post-traumatic stress disorder [4–6]. These psychological issues are persistent, with higher enduring rates being reported 2–5 years after disaster [7–9]. In a small minority, exposure to disaster may precipitate severe mental illness. Those with pre-existing mental disorders are also likely to experience vulnerability due to their greater needs and disruption of supply chains and support networks [10]. Mental health problems have a significant impact on post-flood disability, owing to their tendency to persist and influence other chronic medical conditions. It has been quantified that 80% of the estimated Disability Adjusted Life Years (DALYs) attributable to floods is contributed by mental health problems [11].

In August 2018, the state of Kerala received heavy rainfall, in excess of 164%, with at least two districts (administrative sub-units of the state) receiving more than 400% rainfall. The resultant massive in-flow to dams necessitated their opening to release water. The continued torrential rains along with water released from dams led to unprecedented floods [12]. There was widespread devastation; one-sixth of the total state population was directly affected and the Government of India declared it a “Calamity of severe nature”. Timely rescue operations by the central and state forces, officials, fishermen, volunteers, and laymen, ensured that loss of life was minimized. An estimated 483 people died, 33,000 were rescued, and 1.2 million were displaced. Nearly 7000 houses were completely damaged, a further 15,000 suffered significant damage, and 6200 miles of roadway was damaged or destroyed [13]. The cost of rebuilding was calculated to be approximately 31,000 crore rupees (USD 4.4 billion) [13].

In the immediate aftermath, the local mental health services joined hands with mental health professionals from other states and the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru (the tertiary unit of mental health care in India) to train lay volunteers to provide psychological first aid (PFA) as an immediate respite to the flood affected. PFA aimed to reduce initial distress and foster short and long-term adaptive functioning. It involved three primary steps: look (protect people from further harm and identify people with urgent basic needs or serious distress reactions), listen (ask about needs and concerns, listen and assist in calming), and link (provide information, connect people with loved ones, access services, and support). This technique has been endorsed by many international agencies and reflects the current international consensus on supporting disaster affected people while maintaining respect for their culture and abilities [14]. Persons identified to have a mental health crisis, or other serious concerns such as family violence or physical injury, were referred by the lay volunteers to their training supervisor, who facilitated necessary intervention. Over 80,000 survivors received PFA either individually or in groups [15]. Lay volunteers were involved only in immediate psychosocial response.

The initial outpouring of resources including mental health inputs that characterise disasters has been recognised to be limited in time, reach, and effectiveness [16]. Research in post-flood affected communities has consistently demonstrated that, when there are high levels of material and human loss, high water levels in the home, significant

danger posed to life, inability to collect possessions, experience of evacuation, or loss of livelihood, the associated mental health problems are likely to persist for many years [6,7,16,17].

Tackling mental health issues is crucial to the overall well-being, functioning, and resilience of individuals, societies, and countries recovering from natural disasters. However, both systemic and individual factors impede service delivery. The crippling financial strain on governments in the immediate aftermath of a disaster is a major impediment in allocating requisite financial resources to tackle mental health problems [17,18]. The lack of additional resources compounds the pre-existing and well documented treatment gap for mental illness in many low- and middle-income countries (LAMIC) [19,20]. In addition, many individuals who require psychological help, face difficulties in accessing care owing to disruption in networks and perceived stigma [4].

Considering the scale of the disaster and the likelihood of persistence of mental health issues in the disaster affected population, the Government of Kerala implemented a comprehensive mental health and psychosocial project named “PARIRAKSHA” (meaning “preservation/protection” in English). Its broad objectives were:

- A. Early Identification of persons with mental health problems in the affected communities.
- B. Provision of appropriate care within local communities
- C. Implementation of a structured, stepped care approach

This manuscript documents the design, steps, and detailed methodology of this project. *In addition, the supplementary material contains all the prepared technical manuals, to ensure free access to mental health professionals in disaster affected zones especially in low income communities.*

2. Methods

2.1. Settings

The state of Kerala in South India is the thirteenth largest state in the country. It has 14 districts (administrative sub-units of the state) of which 10 experienced flooding. Two hundred and sixty-two panchayats were affected across these 10 districts. Panchayats are the village-level self-government units in India. Each panchayat in Kerala has between twenty and thirty thousand people. Among the 262 affected panchayats, 93 experienced severe flooding with loss of life, significant damage to homes, and permanent loss of livelihood. These 93 panchayats were selected for program implementation.

2.2. Colloquium

Two months after the floods, a two-day colloquium was organised by the Department of Health & Family Welfare, Government of Kerala, to discuss the means and methods to tackle the long-term psycho-social impact of the disaster.

The deliberations involved health administrative officials and experts in the field of mental health from both Kerala and NIMHANS. The group reviewed the state’s existing primary health care system, community mental health services, and the potential settings for interventions along with empirical evidence. A brief summary of the deliberations is outlined below.

2.3. Primary health care system in Kerala

Kerala has a robust primary health care network [21], wherein care

is delivered through a large network of government run Primary Health Centres' (PHC) (equivalent to the general practice in high-income countries). Each panchayat has a PHC. These PHCs are the nodal point for delivery of curative, preventive, and promotional health programs of the Government of Kerala. Under each PHC there are 5–6 sub-centres (community centres catering to approximately 3000–5000 population), staffed by healthcare workers (auxiliary nurse midwife and male health worker) predominantly focussed on improving community participation in preventive and promotional health programs [22]. ASHAs (accredited social health activists) are the community health workers who form the foot soldiers of the primary health systems [23] (Fig. 1). Kerala's primary health care system has achieved health indicators (infant mortality rate, maternal mortality rate, birth rate, death rate) comparable to high-income countries [24].

However, there were three major impediments to delivering disaster-related mental health and psychosocial support through the primary health care system. First, the existing system was overburdened; the average physician consultation time in primary care in India was estimated to be less than 3 min per patient [25]. Second, the competency of Indian primary care physicians with respect to mental healthcare was inadequate [26]. Lastly, as in every disaster zone, the primary health care services were experiencing a greater burden [27].

2.4. Community mental health services

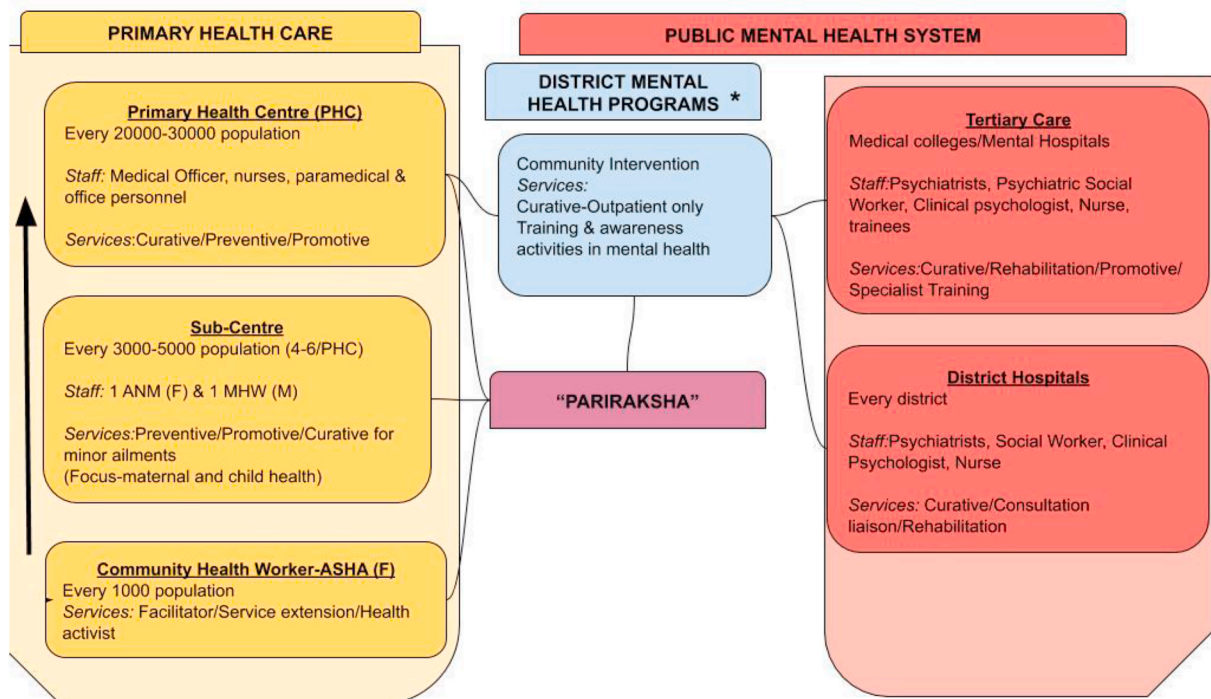
Community mental health services in India are organised at the district level through the District Mental Health Program (DMHP) [Fig. 1]. Each DMHP team is multi-disciplinary, consisting of a psychiatrist, social worker, clinical psychologist, psychiatric nurse, and support staff. They specifically focus on reducing the treatment gap for severe mental illnesses through pre-fixed satellite clinics across the

district. The DMHP in Kerala conducts monthly clinics in 15–20 PHCs/ community health centres across each district, with each clinic catering to an average of 60–100 patients. The multi-disciplinary DMHP team is also involved in activities related to mental health education and awareness [28]. Thus, the existing community mental health services were also noted to be resource-constrained and not equipped to extend long-term psychosocial care for the flood affected.

2.5. Need to integrate "PARIRAKSHA" into primary health care and community mental health service

The colloquium recognised that the psychosocial program for the flood survivors needed rapid and effective implementation given the consistently reported negative psychosocial consequences [4]. The severe financial constraints of the government post-floods necessitated a cost-effective program [13]. Development of a fully structured stand-alone program would have delayed the implementation and required significant additional funding for infrastructure and logistics. The physical infrastructure of the existing PHCs were easily accessible, and their services had a high degree of acceptability in the local community [21]. In addition, the DMHP and PHCs were already networking closely with other departments of the government, self-help & caregiver groups, and non-governmental organisations in the local community. These networks were significant as people in severely affected areas would have experienced losses in every aspect of their life [29].

To mitigate the losses the government offered both financial and manpower assistance to survivors [30]. However, these assistances were provided by different government departments, e.g., compensation for damage to house and loss of land was handled by the revenue department; agricultural losses, and removal of debris from fields was dealt with by the agricultural department; relief for loss of cattle was handled



ANM-Auxiliary nurse midwife
 MHW-Male Health Worker
 ASHA-Accredited Social Health Activists
 (M)-Male
 (F)- Female

* District Mental Health Programs conducts outpatient services in PHC & community health centres (CHC). CHC are the first referral unit for the primary health centres (PHC). Patients requiring inpatient care are referred to tertiary care centres.
 "Connectors" from "PARIRAKSHA" indicates it's ambit of interventions

Fig. 1. Framework of Kerala's Primary health care & public mental health system.

by the animal husbandry department; and loans for resumption of livelihood were provided through banks [30]. Many affected people, especially in rural communities, struggled to access these services as it required linking with multiple departments. Tapping the inter-sectorial networks of both the DMHP and PHCs was deemed to be helpful in hastening this process [21,31]. However, as previously mentioned both the PHCs and DMHP were over-burdened and resource constrained.

Thus, the committee arrived at a few consensus points. First, a cost-effective community psychosocial project needed to be initiated. Second, the existing public health services of the state was overburdened and not equipped to provide community level psychosocial support to the survivors. Third, an existing system needed to be strengthened for delivery of the psychosocial program to ensure ease of implementation and costing. A feasible attempt for integration was identified to be through Kerala's primary health care and community health services owing to ease of accessibility and ability to consistently deliver care (Fig. 1). Fourth, to address post-disaster psychological issues that stem from both needs and losses, we needed a systems approach rather than a fragmented service delivery. In practice, this required that the program integrated various departments and multiple stakeholders (social welfare, housing, revenue, local self-government etc.) (Fig. 2). Last, to ensure that the project was in accordance with the current guidelines for mental health and psychosocial support (MHPSS), a review of various consensus guidelines was warranted. The reviewed guidelines included those by the Inter-Agency Standing Committee (United Nations), World Health Organisation (WHO), and Red Cross/Red Crescent Mental Health on the Mental Health and Psychosocial Support in Emergency Settings [32–35]. This review formed the basis of the training manuals created for the project (See supplementary material).

Thus project "PARIRAKSHA", aimed to integrate the primary health care and existing mental health resources and fill the resource gaps in both personnel and training, to ensure delivery of long-term psychosocial care for the flood affected.

2.5.1. Duration of the project

The project was initially funded for a period of one year from March 2019, with extension plans following review. (However, with the outbreak of COVID-19 in Kerala in March 2020, the activities of PARIRAKSHA have been stalled).

2.6. Roles and responsibilities of specialised staff recruited for the project

Two categories of personnel were recruited specifically for project implementation, counsellors in PHCs and multi-disciplinary mobile psychological well-being units (mobile mental health teams) in each affected district.

2.6.1. Counsellors

Counsellors were recruited in the 93 PHCs in the selected panchayats. They had postgraduate qualifications in mental health, and received additional training to assess and manage individuals who required mental health and psychosocial support (MHPSS). Their training covered MHPSS (core principles); psychological first aid; recognition of post-disaster psychological disturbances including severe mental illness and common mental disorders; crisis intervention; grief work; stress management; and supportive counselling (refer supplementary material for training manual). To ensure competencies, counsellors were provided intensive training (3 days) followed by regular booster inputs (at the end of 1 and 3 months).

Counsellors provided their services mainly through sub-centres (4 days/week), to ensure ease of accessibility and reduced stigma. They also met clients at PHCs' (2 days/week) or in rare cases at home (severely ill/disabled). Clients could walk in without prior appointments or were referred from the community by ASHAs.

After assessment, the clients were triaged to receive ASHA follow-up in the community; individual focused psychosocial intervention (single session or multiple sessions) by the counsellor; referral to the medical officer of the PHC for short-term medications; referral to the mobile or specialist mental health team for specialised input; emergency assessment or admission in rare cases; or a combination of these (Table 1 and Fig. 2).

In addition, counsellors were provided guidelines (including contact details of various departments/key-personnel) for intersectoral referral to address needs and losses that required inputs from multiple government departments (Fig. 2).

Counsellors received monthly supervision in small groups of 6–8 from the trained mental health professionals attached to the specialised mobile psychological well-being units. The supervision ensured clarifications, improvement of counsellors' skills, and addressed burn out of supervisees.

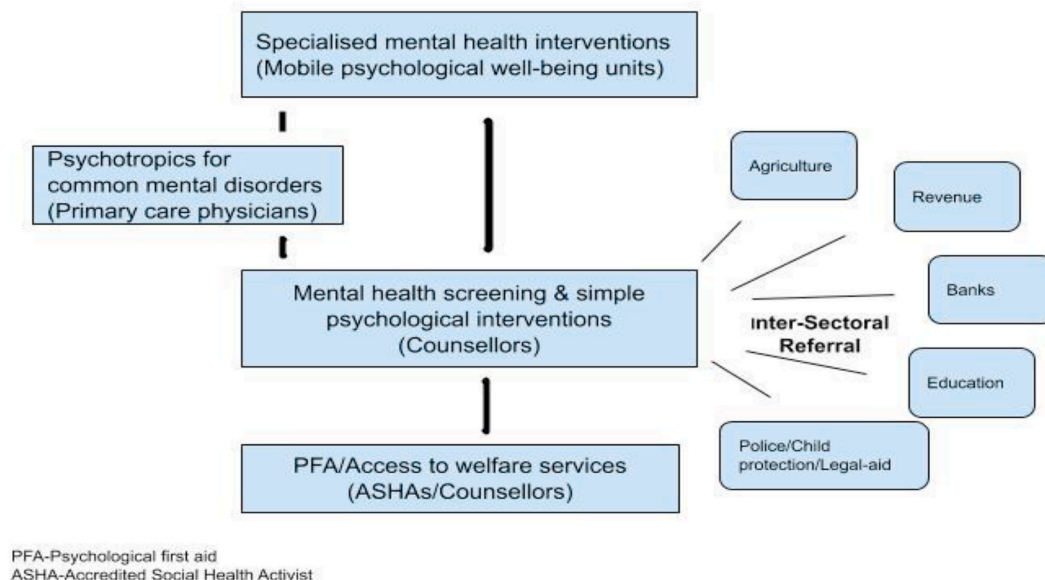


Fig. 2. Stepped care approach and Inter-sectorial referral in PARIRAKSHA.

Table 1
Framework, rationale and interventions through PARIRAKSHA.

	Rationale	Settings of service	Interventions
PARIRAKSHA Counsellors	Early identification of mental health issues in disaster affected will prevent long-term negative outcomes and reduce disabilities Provision of care in local communities will ensure ease of accessibility and reduced stigma	Sub-centres (4 days)/Primary Health Centres (1 day)	<ul style="list-style-type: none"> • Psychological first aid • Psychological Intervention • Liaison with primary health care personnel and ASHAs • Supervision of ASHAs
ASHAs	Improving awareness on mental health and psychosocial issues at the community level will help identify vulnerable and ensure early intervention	Community/House-hold	House visits <ul style="list-style-type: none"> • Mental health awareness • Identify vulnerable • Psychological first aid • Referral
Primary Care physicians	Primary Health Centres- Nodal point for curative interventions in the community	Primary Health Centres	<ul style="list-style-type: none"> • Psychotropic prescriptions for common mental disorders • Administrative supervision- counsellors
Mobile psychological well-being units	<ul style="list-style-type: none"> • Higher rates of mental health issues requiring specialised input are reported on the long-term in disaster affected population • Primary health care personnel lack awareness and competency in managing post-flood mental health issues 	Primary Health Centres/ Community Health Centres	<ul style="list-style-type: none"> • Assessment & Management • Complex MHPSS issues • Severe Mental Illness • Crisis Interventions • Liaison with PHC doctors/counsellors • Capacity building of primary health care personnel • Clinical Supervision of counsellors • Implementing agency of PARIRAKSHA at the district level • Providing clinical care of displaced population • Clinical supervision and training of Mobile Psychological Well-being Units • Clinical support for displaced populations in non-affected areas • Training primary care personnel
District Mental Health Program (DMHP)	Implementing agency at the District level with expertise in community mental health		

2.6.2. Mobile psychological well-being units

In all the ten affected districts, mobile psychological well-being units with specialised, mental health professionals were constituted to cater to clients reporting complex or severe MHPSS issues. Each unit was composed of a psychiatrist, clinical psychologist/psychiatric social worker, and psychiatric nurse. The multidisciplinary team provided inputs through clinics in PHCs. The clinics were scheduled to ensure at least one visit per fortnight to all affected areas (not just the severely impacted). This specialised team assessed individuals with severe mental health issues identified/referred by the counsellor/primary care physicians. The unit also provided care for clients who developed or experienced deterioration of severe mental illness following the floods. The team regularly liaised with the PHC medical officers and counsellors to provide emergency inputs when required. They were also in charge of clinical supervision and continued training of counsellors.

2.7. Roles and responsibilities of existing personnel in primary care and community mental health

2.7.1. ASHAs

Existing ASHAs attached to the PHCs formed the community facilitators for the project. There were approximately 20 ASHAs in every PHC. All ASHAs in affected area received training on MHPSS screening, referral, and psychological first aid. They were provided a booklet containing details of existing/new social welfare programs of the Government of Kerala including special programs being implemented for communities affected by flood. As a part of the project, ASHAs conducted house visits, during which they initially provided information on the social welfare programs initiated by the Government for disaster survivors. This ensured that the families did not feel stigmatized. They then discussed the possible long-term psychological impact of the floods including psychological distress and increased alcohol/tobacco use in adults, and academic/behavioural problems in children using key probes (ASHAs key probes: Annexure 1). If the key informant/others reported that a member of the family definitely had symptoms, a referral was initiated to the counsellor. If the client had only probable symptoms,

ASHAs administered Psychological First Aid and educated the family regarding 'crisis signs' and advised them to seek help if symptoms persisted/worsened. The ASHAs during their home visits identified vulnerable people (living alone/elderly). Monthly home visits were continued for vulnerable people and cases (till case-ness persisted). ASHAs also monitored the area for emergence of new cases during their regular home-visits. Monthly supervision was provided to the ASHAs by counsellors of the respective PHCs.

2.7.2. Primary care physicians

All primary health care doctors in the severely affected region received mandatory training in presentations of MHPSS problems post disaster and their clinical management, with specific focus on pharmacological intervention. They also received training in risk assessment (suicidal risk) and brief counselling strategies, and worked in close collaboration with the mobile psychological well-being units. These medical officers were given administrative control over the Counsellors posted in their PHC, while the clinical supervisory control was exercised by the nodal officer of the DMHP.

2.7.3. District Mental Health Program

The existing DMHP overlapped with the newly formed mobile psychological well-being clinics in providing MHPSS. While the newly formed mobile units focused on the areas that had been severely impacted by the floods, the DMHP provided services for the flood survivors who had been displaced to non-affected areas. The DMHP personnel were also involved in training the primary care personnel in flood affected areas.

The nodal officer of the DMHP in each of the affected districts was designated as the district level nodal officer for the program and was provided complete administrative control over the project and the personnel recruited under the project.

2.8. Stepped care approach & referral pathway

The stepped care delivery model of PARIRAKSHA had four broad

components (Fig. 2):

1. All flood survivors who required PFA and information/access to welfare services was provided the same by ASHAs and counsellors at the community/household level
2. PARIRAKSHA counsellors provided basic screening, assessment, and psychological interventions to help with immediate problems, crisis, and short-term distress
3. Primary care physicians provided psychotropic prescriptions for common mental disorders (anti-anxiety/antidepressants)
4. Mobile psychological well-being units provided for specialised mental health Interventions for those referred by counsellors and primary care physicians.

2.9. Administrative framework

The project administration was divided into state and district levels. The administrative committee at the state level was led by the Director of Health Services, and the district committee by the District Medical Officer. The Nodal Officers for mental health at the state and district level acted as the implementing officers. Facilitatory committees composed of officers from various departments were constituted to ensure inter-sectoral coordination.

3. Our experience of the project

The initial base-line of post-disaster psychosocial issues in the flood affected communities could not be assessed owing to breakdown of community networks. The focus during that period was on minimizing loss of life, livelihood, and property. It was envisaged that the subsequent psychosocial impact could be continuously monitored through community surveys using mixed models every 6 months, beginning a year after the disaster. However, following the COVID-19 pandemic outbreak in Kerala, the program has been put in abeyance. The impact assessment surveys although planned, could not be carried out due to the restrictions on social interactions. It is also highly likely that any study conducted from this point on would be coloured by the larger proximal impact of the pandemic.

Hence, we decided to outline our experience from the project across various domains (on what worked well and what did not), fully acknowledging its limited strength of evidence.

3.1. What worked well

3.1.1. Training

The training manual was prepared by summarizing various consensus guidelines including those by the Inter-Agency Standing Committee (United Nations), World Health Organisation, and Red Cross/Red Crescent Mental Health on Mental Health and Psychosocial Support in Emergency Settings (see [supplementary material](#)). This ensured standardised training of all personnel across the project.

3.1.2. Clinical services

The staff recruited specifically for the project (counsellors and mobile psychological well-being units) were meant to address the mental health issues of the flood affected. However, as time progressed, they were also involved in addressing other mental health needs of the local community. Thus, in communities with limited specialist mental health input, the outpatient camps conducted by the mobile psychological well-being units were accessed by 60–80 patients, many of whom had long standing mental health issues. In many communities, the program filled the existing treatment gap in mental health services. The Government of India, has hence continued funding district level mobile psychological well-being units (to provide services in integration with the existing DMHP).

In the subsequent year (August 2019), torrential rains again led to

floods, albeit to a lesser degree leading to 121 deaths and over two hundred thousand directly impacted [36]. The immediate psychosocial support and PFA were provided by local volunteers trained by the DMHP and PARIRAKSHA. This time around, the state did not require additional mental health resources from other states or institutions like the NIMHANS. Thus, the training and capacity building under PARIRAKSHA appears to have helped in attaining self-sufficiency [36].

3.2. What could have been better

3.2.1. Staff supervision

The project had envisaged group supervision. However, existing healthcare personnel especially ASHAs were involved in multiple simultaneous programs. As the program progressed, we recognised that individual clinical supervision as and when required was more feasible.

3.2.2. Staff retention

Out of the 93 counsellors recruited, 20 resigned at various points during the second half of the project year, either due to better career prospects or personal reasons. As the initial phase and funding for the project was for one year, no active administrative steps were taken to fill up the posts that fell vacant in the last few months. The envisaged services in certain PHCs could hence not be fulfilled.

3.2.3. Infrastructure and logistic support

Obtaining a separate room for counselling was expected to be challenge in many PHCs and sub-centres. In most centres, rooms were available only after the forenoon out-patient services were completed.

The project had not earmarked personnel for clerical and logistic support. This was a major oversight during planning, and resulted in patchy administrative integration between existing primary health care and community mental health system. This specifically impacted timely data collection and collation.

4. Discussion

The paper aims to add to existing disaster literature by describing the framework of implementation of a large psychosocial project to facilitate long-term psychosocial recovery of communities affected by the floods in the state of Kerala, India. The unique nature of the project is its comprehensiveness and reach (approximately 2 million people in 93 of the worst affected panchayats). It aimed to bridge the treatment gap and improve accessibility in a population which has suffered significant losses of life, livelihood, and property.

The strengthening of the primary health care networks of Kerala under “PARIRAKSHA” is in concordance with the programs catalogued by the WHO under “Building Back Better”. Although it was not one of the primary objectives of “PARIRAKSHA”, the training and sensitisation of the primary health care personnel is envisaged to help integrate mental health care with primary care thus improving long-term outcomes. This integration has been one of the primary objectives of the DMHP; however, past attempts have had limited success [28]. The programs under “Building Back Better” highlights how short-term interests in post-disaster mental health of communities have been translated into sustainable, long-term improvements in community mental health networks worldwide [37].

Most psychosocial interventions in post-disaster populations in India, have focussed only on the immediate aftermath [38]. India's National Disaster Management Guidelines (2009) [39] had proposed the development of long term psychosocial interventions. However, the projects implemented till date have been small, supporting limited populations, and led by non-government organisations or local philanthropists [38]. This program is by far the largest post-disaster, long-term psychosocial intervention attempted in India. Evidence based steps were undertaken during both planning and implementation, including mapping of resources, training of personnel based on standard protocols,

using community workers in case-detection, and ensuring inter-sectoral referral. Effective execution was ensured through the implementation and facilitatory committees constituted both at the state and district levels with administrators across departments. Through this, we hope that the project will achieve the broader objective of uniform delivery and minimum standards of psychosocial care across the defined population.

The Inter-Agency Standing Committee (IASC) Guidelines on Mental Health and Psychosocial Support in Emergency Settings, the Sphere Handbook, and other expert/consensus-based guidance on mental health services and psychosocial supports, provide robust frameworks for managing psychosocial issues during the immediate post-disaster period till early recovery [32–35]. But frameworks for long-term mental health care are limited. Recognising this, we have provided the technical materials which formed the framework of our program as [supplementary material](#), freely available to others who may require it. The prepared material has been reviewed by local mental health experts to ensure compatibility with evidence-based guidelines for primary mental health [40]. We hope that its availability in the public domain will help other communities, especially in low-income countries with limited resources, to facilitate post-disaster psychosocial recovery.

In addition to the aspects discussed in the previous sections, the program had a few other limitations too. First, though the project is comprehensive, its implementation was limited to panchayats. Panchayats represent rural communities. Urban communities affected by the floods, albeit relatively few, could not be included as the community health care workers, specifically ASHAs, were sparse in these areas. Second, though the program envisaged placing additional resources in primary care, it remains dependent on existing primary health care networks. The existing primary health care network including the PHC doctors, DMHPs, and ASHAs are already overburdened. The impact of the project would hence depend on their ability to deliver despite these constraints.

To conclude, the evidence-based strengthening of primary health care and community networks adopted by PARIRAKSHA is envisaged to reduce the post-flood psychosocial burden in affected communities. Publishing its framework and ensuring that the technical materials prepared for this project are made freely accessible will help many low- and middle-income countries with disaster affected populations to implement similar projects.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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