

SUPPLEMENTARY DOCUMENTS

Figure S1: A flow-chart of schools and participants recruitment in the study

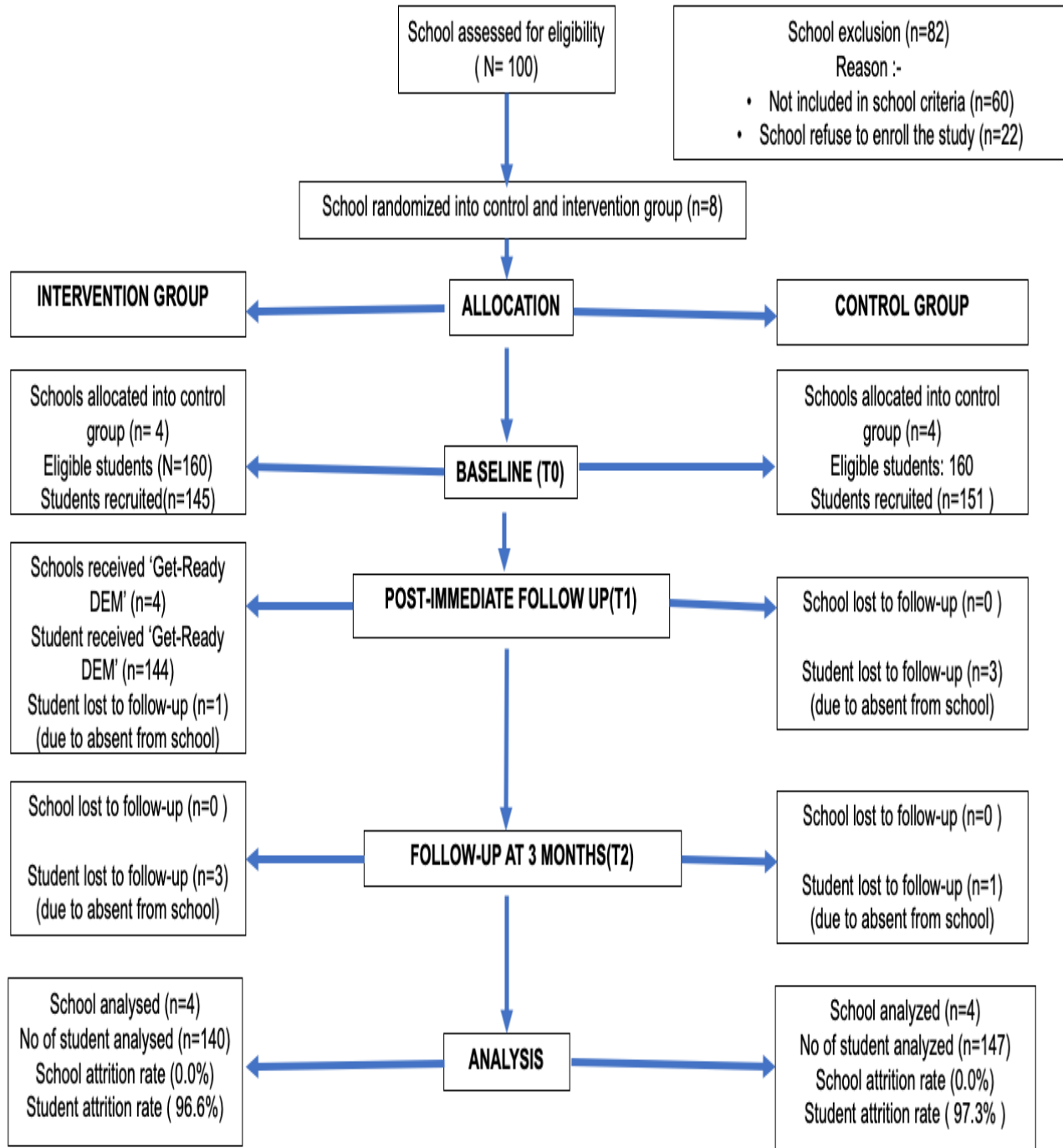


Table S1- A summary of objectives and content of 'Get-Ready DEM' Flood Disaster Education Module based on EPPM

Session	EPPM theory construct	Objectives	Content
Session 1 General Information on Flooding	Perceived Threat (Perceived severity and susceptibility)	• To explain how a flood occurs • To explain the risk drivers and how hazards can become a disaster • To explain the causes and impacts of floods. • To describe the frequency of flood and the risk of getting flooded.	<i>Key idea:</i> To allow students to understand the flood and the risk of getting flood.
Session 2 Flood disaster preparedness	Perceived Efficacy (Self-efficacy and response efficacy)	• To identify the risk and hazards of flooding • To inform protective behaviour and strategies for staying safe when there is a flood • To develop an emergency kit or grab bag • To recognize early warning systems for flood that available in local setting • To identify emergency communication channels and evacuation or emergency plan	<i>Key idea:</i> - Explain the concepts of hazards, vulnerability, and capacity in flood disasters. <i>Key idea:</i> - Participants can know about activities that can be done before, during and after a flood disaster. <i>Key idea:</i> - Introduction with current and locally available early warning systems that available. Thus, participants can anticipate the risk and prepare for a flood disaster. <i>Key Idea:</i> - Disaster often strikes when least expect it, so planning is essential. Thus educate the participant on the following: - • How to prepare the emergency bag? • How to establish a family contact line during an emergency? How to design an evacuation plan or emergency plan?
Session 3 Disaster Risk & Crisis Communication	Perceived Efficacy (Self-efficacy and response efficacy)	• To explain where and how to find information, alerts and warnings before, during and after a flood emergency. • To promote sharing and knowledge transfer regarding flood disaster	<i>Key idea:</i> The participant shall be alert with the correct information and announcements on flood disaster situations from the higher and responsible authorities via news, radio or other social media. <i>Key idea:</i> To impart good moral value among the participants that can be shown during disaster.

A questionnaire using flood disaster preparedness index score.

Flood Disaster preparedness Index (14 items)

In this section, the flood disaster preparedness index refers to the level of preparedness of you and your family members in facing a flood disaster.

Have you or your family adopted the flood disaster preparedness activities below?
You can select (√) your response either Yes, No, or Not sure in the space given.

Item No	Activities	Responses		
		Yes	Not sure	No
A1	Identified the evacuation route nearby your house.			
A2	Identified a safe elevated area to rescue from floods.			
A3	Identified emergency services contact numbers (such as 999, Ambulance, Fire, and Police)			
A4	Prepare a family emergency plan.			
A5	Shared information on disaster preparedness with other family and friends			
A6	Recognized the locally available emergency warning system (such as sirens, cameras, and flood gauges)			
A7	Keep the important document in a safe place (such as a copy of your birth certificate or passport in a waterproof sealed file or online storage)			
A8	Bought insurance policy related to disaster			
A9	Prepared an emergency bag			
A10	Stored hazardous material safely (e.g., gas cylinder)			
A11	Placed all the movable objects at home at a higher place (TV, Computer)			
A12	Learn how to turn off the main switch of the electrical power			
A13	Stored at least three days of clean water supply for every household. A 3-day water supply is at least 7.5 Litres of water per person per day.			
A14	Own applications that relay information about flood disasters (PublicInfobanjir, My DIMS, etc.)			

Table S2 : Socio-demographic details of the background's participant and baseline differences of variable between control and intervention group.

VARIABLE		CONTROL	INTERVENTION	Man Whitney Test	
	Median (IQR)/ Mean Rank	(Mean Rank)	(Mean Rank)	Z-stat	p-value
Age	14(1) / 5673.5	175.40	111.03	-7.055	<0.001
	CONTROL (Mean, SD)	INTERVENTION (Mean, SD)	Independent T-test		
			F	T-stat (df)	p-value
Flood Disaster Preparedness Score	7.44(2.95)	7.4(2.42)	6.706	0.132(279.05)	0.894
Perceived Efficacy	0.006(1.07)	-0.334(0.78)	10.847	3.073(285)	0.002
Perceived Threat	0.056(1.08)	-0.224(0.92)	3.504	2.38(285)	0.018
	TOTAL	CONTROL	INTERVENTION	Chi Square ^a / Fischer Exact Test ^b	
	=287 (n, %)	n = 147	n=140	χ^2	p-value
Gender				2.316 ^a	0.155
Male	130(45.3%)	73(49.7%)	57 (40.7%)		
Female	157(54.7%)	74(50.3%)	83(59.3%)		
Background Family's Education				0.358 ^a	0.863
Primary school	12(4.2%)	7 (4.8%)	5(3.6%)		
Secondary school	198 (69%)	102(69.4%)	96 (68.6%)		
Tertiary school	77 (26.8%)	38(25.9%)	39(27.9%)		
Family's monthly Income				0.199 ^a	0.892
B40	186 (64.8%)	94(63.9%)	93(66.4%)		
M40	88 (30.7%)	46(31.3%)	41(29.3%)		
T20	13 (4.5%)	7(4.8%)	6(4.3%)		

Disaster experience					
Individuals	n=285	n=145	n=140	36.287 ^a	<0.001*
Yes	91(31.9%)	70(47.6%)	21(15%)		
No	194 (68.1%)	75 (51%)	119 (85%)		
Family/friends	n=279	n=144	n=135	8.326 ^a	0.005*
Yes	168(60.2%)	98(66.7%)	69(51.1%)		
No	111(39.8%)	46(31.3%)	66(48.9%)		
Severity of the disaster					
Individual	n=91	n=70	n=21	11.214 ^b	0.019*
Very Severe	6(6.6%)	5(7.1%)	1 (4.8%)		
Severe	12(13.2%)	10(14.1%)	2(9.8%)		
Moderately Severe	30(33%)	20(28.2%)	10(47.6%)		
Not severe at all	23(25.2%)	16(22.5%)	7(33.3%)		
Does not want to answer	20(22%)	19(27.1%)	1(4.8%)		
Family/Friends	n=168	n=98	n=69	12.085 ^b	0.023*
Very Severe	17(10.2%)	3(3.1%)	14(20.3%)		
Severe	17(10.2%)	3(3.1%)	14(20.3%)		
Moderately Severe	69 (41.2%)	36(36.7%)	33(47.8%)		
Not severe at all	27 (16.2%)	19(19.4%)	8(11.6%)		
Does not want to answer	37 (22.2%)	37(37.8%)	0		
Received Disaster Education				1.5 ^a	0.272
Yes	49(17.1%)	29(19.7%)	20(14.3%)		
No	238(82.9%)	118(80.3%)	120(85.7%)		

Note (*)-significant p-value <0.05 , Chi square Test ^a , Fischer Exact Test ^b

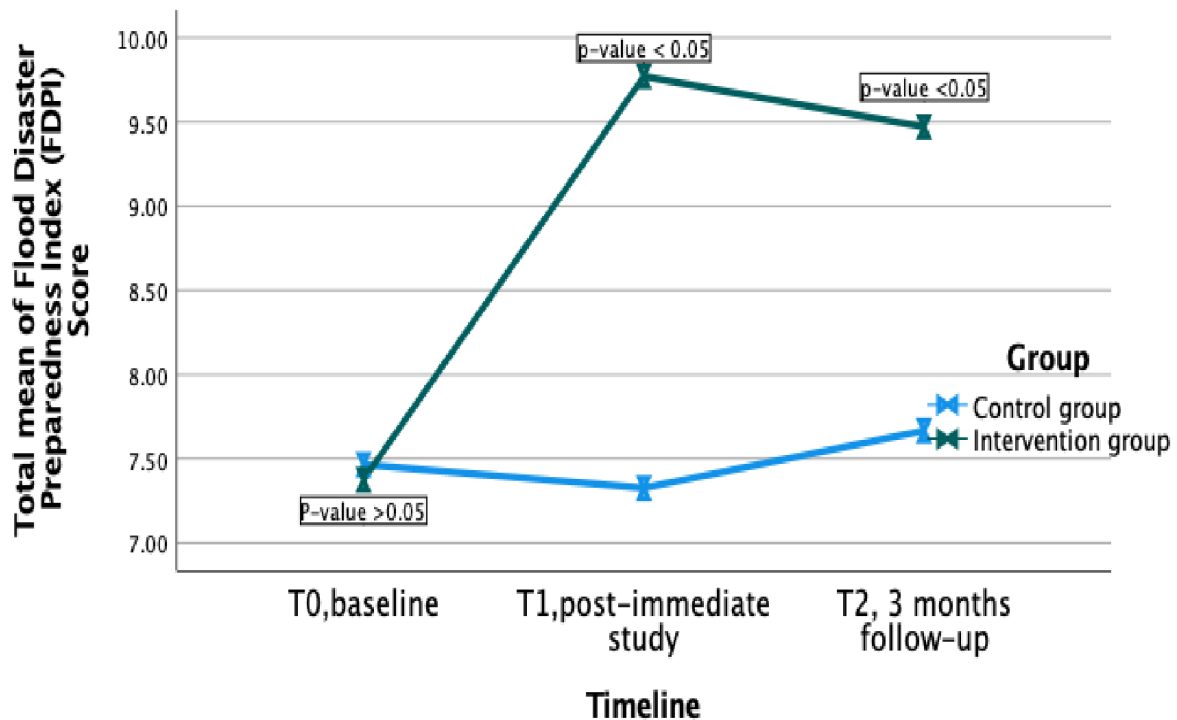
Table S3- Model of parameter the effect of flood disaster education module on flood disaster preparedness after controlling the significance covariates comparing between trial group and across three different timelines.

	β	SE	Wald	95 % CI		p-value
				Lower	Upper	
Intercept	-647.04	203.259	10.131	-1045.475	-248.599	0.001
Trial group	Between group					
Control	Ref					
Intervention	0.892	0.351	6.467	0.205	1.58	0.011
	Timeline					
Baseline						
Post-immediate	-0.76	0.163	0.219	0.205	1.58	0.011
3-month follow up	0.293	0.177	2.736	-0.54	0.641	0.098
Interaction	Timeline*trial group					
Intervention*baseline	Ref					
Intervention*post immediate	2.146	0.257	69.849	1.643	2.65	<0.001
Intervention*3-month follow up	1.53	0.294	27.158	0.955	2.105	<0.001
	Covariates					
Age	0.952	0.210	20.505	0.540	1.364	<0.001
Perceived Efficacy	0.428	0.107	16.046	0.219	0.637	<0.001
Perceived Threat	0.095	0.123	0.598	-0.146	0.337	0.439
Disaster Severity of Individual	0.641	0.203	9.93	0.242	1.04	0.002
Individual Disaster Experience (No)	Ref					
Individual Disaster Experience (Yes)	638.6	202.59	9.936	241.529	1035.67	0.002
Family/friend's Disaster Experience (No)	Ref					
Family/friend's Disaster Experience (Yes)	0.558	0.286	3.804	-0.003	1.12	0.051

Note (*)-significant p-value <0.05, SE-standard error, CI -confidence interval, Ref= reference category, QIC = 5712.855, QICC= 5700.387

**Robust sensitivity analysis was performed using a CR2 small-sample correction (Wild bootstrapping) to account for the small number of clusters (N=8). Under this correction, the group-by-time interaction is not statistically significant (p=0.26 for time 1; p=0.43 for time 2), indicating the study is underpowered to detect this effect when heavily penalized for cluster size.

Figure S2: Graph showed the total mean of Flood Disaster Preparedness Index Score (FDPI) on flood disaster preparedness between trial group at different timeline.



p-value < 0.05 showed statistically significant differences between control and intervention group. Baseline study: No difference of FDPI score between control and group (p-value = 0.89). Post Intervention Improvement: Significant increase of FDPI score at T1 (Beta: 2.15, 95%CI : 1.647, 2.62, p-value < 0.05), and decrease at T2 (Beta: 1.53, 95%CI : 0.96, 2.1, p-value < 0.001) compared with control and at baseline