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Nurture for Optimal Nutrition (NEON) is a mixed method three phase study aiming to optimise infant feeding and care practices in British Bangladeshi infants (aged <24 months) through a female facilitator-led adapted Participatory Learning and Action (PLA) group approach. The PLA group approach has been applied and documented extensively to bring significant survival in rural setting in low income countries, and has obtained a WHO recommendation for this aim.

Clinical Rationale

- 1st 1000 days of life present a critical window of opportunity for prevention of both under and over nutrition
- Tower Hamlets CCG identification of local intervention needs in complementary feeding period
- Epidemiology of Bangladeshi ethnic population in the UK. One of the fastest growing ethnic minority populations and most socially and economically deprived. At higher risk of sub-optimal infant feeding and nutritionally related chronic diseases

Academic Rationale

- Explore potential for reverse innovation of existing evidenced-based low-cost community health interventions

Phased, Community-based Participatory Research Approach

The NEON study applied a phased, community-based and participatory approach throughout its implementation, in which community members were recruited and trained as community facilitators, patient public involvement (PPI) members, and PLA group facilitators, thereby becoming active partners in study design, data collection, analysis, and interpretation. Local implementation partners include: Tower Hamlets Borough Local Authority and Barts Health NHS Trust, as well as third sector organisations supporting infant feeding and care within the borough.

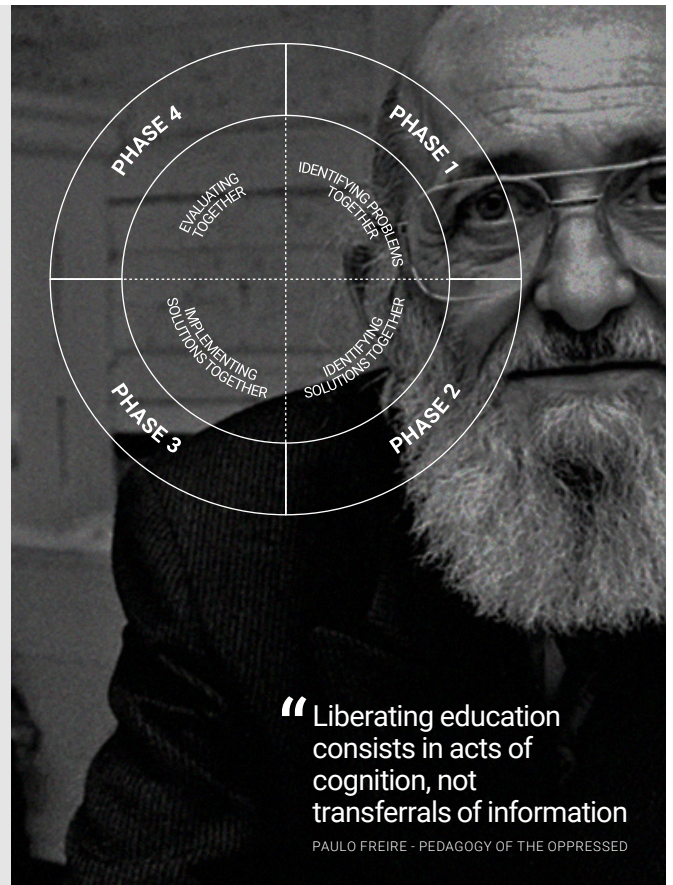
As illustrated in the diagram below, the NEON study followed a phased, sequential design, enabling evidence and learning from preceding phases to inform the next. These phases can also be viewed as cyclical, with Phase 3 informing further adaptation of the PLA group approach and providing an evidence base to guide future application of an adapted PLA group approach aimed at optimising infant feeding and par practices.

<p>PHASE 1: EVIDENCE</p>	<ul style="list-style-type: none"> ■ Systematic review of literature on contemporary feeding practices in South Asian families ■ Qualitative study exploring complimentary feeding practices and contributing factors in British Bangladeshi families in Tower Hamlets ■ PhD study exploring adaptation of PLA group approach
<p>PHASE 2: CO-DESIGN AND ADAPTATION</p>	<ul style="list-style-type: none"> ■ Co-design and adaptation of the PLA group approach with community local stakeholders and PLA experts ■ Translations of formative evidence into culturally tailored PLA group intervention
<p>PHASE 3: FEASIBILITY STUDY</p>	<ul style="list-style-type: none"> ■ Study assessing the feasibility of optimising infant feeding and care practices through an adapted PLA group approach ■ Piloting of, 'Participatory Learning' group intervention ■ Feasibility informing final adaptations and recommended NEON PLA group intervention design

PLA and the PLA Group Approach

PLA describes, "...a family of approach methods, attitudes, and behaviours to enable and empower people to share, analyse, and enhance their knowledge of life and conditions, and to plan, act, monitor, evaluate, and reflect." [IDS]

The PLA group approach is informed by the literature on participatory approaches to community development, community health psychology, and the theories of the late Brazilian philosopher Paulo Freire, who proposed that health problems are often rooted in powerlessness, and can be addressed through social action and empowerment. Health education is considered more empowering if it encompasses problem solving, and enables critical consciousness of underlying social and political determinants of health. The approach involves the formation of community groups aimed at solving health problems, which follow a four phase meeting cycle supported via community-led facilitation.



Evidence

Review of the literature on complementary feeding practices, and the beliefs underpinning them within South Asian families living in Bangladesh, India, Pakistan, and high-income countries informed the design of a qualitative formative study exploring infant feeding and care practices in British Bangladeshi families in Tower Hamlets. As depicted in the diagram to the right, qualitative findings produced a framework of priority infant feeding and care practices, and contributing factors to be addressed via a NEON adapted PLA group approach.

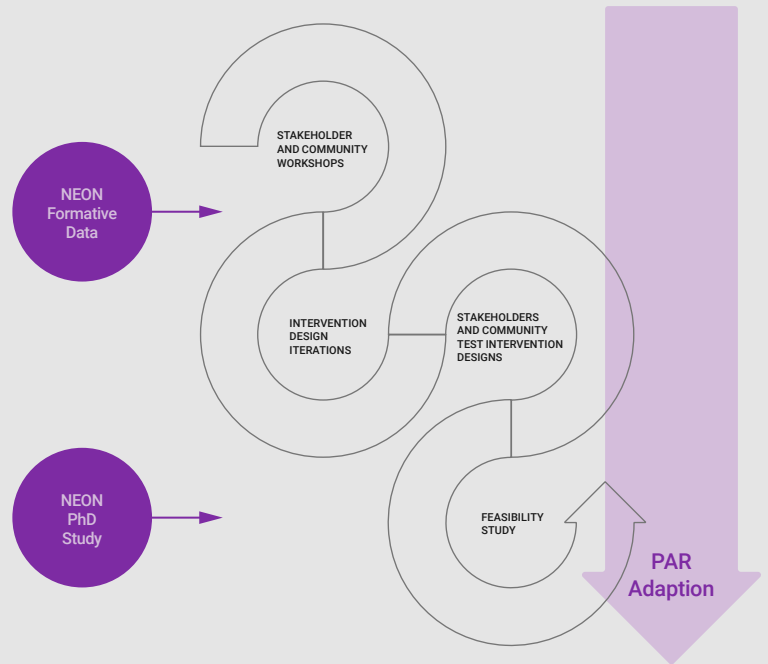
A NEON PhD study exploring the theoretical process for adaptation of the PLA group approach was also conducted, informing the adaptation process in Phase 2.

	CONTRIBUTING FACTORS	SUB-OPTIMAL PRACTICES	
Local Environment	<ul style="list-style-type: none"> Opportunities for activity and play Appropriate feeding spaces and resources Access to diverse and fresh foods Abundance of fast / unhealthy food sources Social norms and peer pressure 	Unregulated portioning	PARENT / CAREGIVER FEEDING PRACTICES
		Prolonged bottle feeding	
		Prolonged hand and spoon feeding	
Health Professionals and Community Support	<ul style="list-style-type: none"> Information or advice from professionals Changing and conflicting advice 	Top-up feeding	PLAY AND SIMULATION
		Chasing fussy eaters	
Parents and Caregivers	<ul style="list-style-type: none"> Balancing cultures, values, and norms Awareness Finance Time and convenience Parenting styles Influence of extended family 	Distraction feeding	DIET QUALITY
		Forced feeding	
Child	<ul style="list-style-type: none"> Fussy eating Disability or allergy 	Prioritising milk and sweet foods after 6 months	
		Early and late introduction of semi- / solid foods	

Co-design and Adaption

Phase 2 involved an extensive co-design and adaptation process conducted in collaboration with PLA experts and community and local stakeholders based in Tower Hamlets and Newham. Key principles applied and followed during the adaptation included i). Community and Local Stakeholder Involvement; ii). Evidenced-based Adaptation; iii). A process guided by PLA experts.

A community-based participatory action research (PAR) methodology was applied, in which community and local stakeholders discussed and revised previously applied PLA group intervention designs, adapted these based on local knowledge and NEON formative data. Iterative NEON intervention designs were produced and tested with community stakeholders.



Feasibility Study

This study was aimed at assessing the feasibility of an adapted PLA group approach aimed at optimising infant feeding and care practices amongst carers of British Bangladeshi infants aged <24 months in Tower Hamlets.

Methodology

4 PLA groups were piloted at children's and community centre venues in Tower Hamlets, facilitated by trained local women British Bangladeshi PLA group facilitators. PLA groups recruited British Bangladeshi carers of infants aged <24 months to conduct 3x two hour meetings focused on participatory learning components of the approach - i.e. Phase 1 (identifying problems), and Phase 2 (identifying solutions). Process data was collected on feasibility of implementing the intervention, along with perceptions towards the feasibility of implementing the intervention, along with perceptions towards the feasibility of a full PLA group approach aimed at optimising infant feeding and care practices.

Findings and Recommendations

28 British Bangladeshi mothers, grandmothers, and aunts caring for infants attended 1 or more meetings. The approach was highly acceptable to participants, although fell short of their expectations in terms of infant feeding skills development. Findings informed the development of the full PLA group meeting cycle pictured below:

