Report of preliminary materials to deliver the interpersonal intervention developed and rapid tested.

THE BETTER HEALTH PROGRAMME MEXICO

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Introduction.

The Better Health Programme in Mexico (BHPMx) is part of the U.K. Global Prosperity Fund Better Health Programme that covers eight countries. The DAI-managed programme addresses the growing incidence of noncommunicable diseases (NCD) in Mexico—especially in relation to obesity and diabetes—with the aim of enhancing the economic and social benefits associated with improved health. The BHPMx Outcome 1 focuses on: Reduction in population obesity prevalence through stronger evidence-based policies and programmes in public health and through behavioural interventions targeted at disadvantaged population to reduce health inequities.

The programme fosters long-term links between Mexican institutions and the National Health Service, other U.K. institutions, and networks of researchers and service providers. To address the challenge, BHPMx launched a collaboration between 2CV, ITESO, INSP, CIDE, and UCL to develop a culturally relevant mass media and interpersonal intervention for eating behaviours associated with obesity. The process included an exhaustive literature review, a series of local experts' interviews and qualitative fieldwork in Acatlán de Juarez and Zapopan. For instance, ethnographies allows to focus groups and deep interviews to inform design and development.

One of the results of the collaboration is the interpersonal intervention materials. This document presents the process followed for development and rapid testing. The team followed the recommendations from Duncan, et.al. (2020) for reporting intervention development studies in health research. Therefore, the following sections present: Purpose of the intervention, target population, evidence from different sources informed the intervention, stakeholders contribution, context for the intervention, theory use for development process, guiding principles, factors to prioritised decisions making, and description of the developed intervention.

Purpose of the intervention.

The health impact for this interpersonal intervention is to decrease the consumption of sugar, especially sweetened beverages, to help reduce obesity levels in two target municipalities of Jalisco. The behavioural impact needed is that women reduce the amount of sugar first in themselves and then in their families diet. As means to achieve the later we are going to work to reduce the amount of sugar in food preparation consumed by women, reduce the amount of sweetened beverages in their diet, reduce the purchase of food with warning labelling high in sugar and reduce the amount of added sugars in their diet (See theory of change, table 1).

Table1. Partial Theory of change for the interpersonal intervention

Health impacts	**Decrease the consumption of sugar, especially sweetened beverages, to help reduce obesity levels** *Indicators: Weight, height, waist circumference, skin folds.*			
Behavioural impacts	**Women reduce the amount of sugar in families diet** *Indicators:* *% percentage of women whom reduce the amount of sugar in their families' diet, measured by an adapted technique of frequency of meals consumption or by an adapted 24 hrs dietary recall.*			
Intermediate behavioural outcomes	**Women reduce amount of sugar in food preparation.**	**Women reduce the amount of sweetened beverages in their diet.**	**Women reduce the purchase of food with warning labelling high in sugar.**	**Women reduce the amount of added sugars in their diet (e.g. honey, sugar, piloncillo).**
	Indicators: *% percentage of women whom reduce the amount of consumption in each food category for their diet, measured by an adapted technique of frequency of meals consumption.*			
Outcomes on behavioural antecedents	Psychological capability to reduce amount of sugar in diet has increased. Reflective motivation to reduce amount of sugar in diet has increased.	Automatic motivation to reduce the amount of sugar in diet has increased.	Physical opportunity to reduce the amount of sugar in diet has increased.	Social opportunity to reduce the amount of sugar in diet has increased.

Outputs	Number of training sessions implemented. Rate of women whom are clientele of community centres that participated in training sessions.	Number of people who participated in public demonstrations or fairs. Rate of women women whom are clientele of community centres that participated in public demonstrations or fairs.	Number of self-monitoring tools distributed amongst population. Number of trainings sessions on the use of self-monitoring tools implemented	Number of challenges organized and implemented. Rate of women whom are clientele of community centres that participated in challenges. Number of women whom participated in challenges. Percentage of women whom had and adherence partner. Percentage of women whom received remote support.
Activities	Training sessions (modality to define) for: -Food labelling reading. - Visualization exercises on the decision process for food purchasing. - Use of sugar. - Create positive emotional association with recommended use of sugar and cooking fat.	Fairs and/or public demonstrations to promote: - Recommended use of sugar. - Healthy recipes for use of sugar. - Kitchen hacks on sugar use.	Design, development, and distribution of self-monitoring tools for target behaviours and related meals categories. E.g. cups, spoons, water bottles, jars, boards.	Family challenges to reduce consumption of sugar in diet. Supported by: - Social network groups like WhatsApp. - Remote advice and monitoring by expert peer or social worker. - Adherence partners.

Report the target population.

The first three stages of the project – literature review, local expert's interviews, and qualitative fieldwork – helped to inform feasible settings and target populations to introduce behaviour change interventions. The expert panel agreed on avoiding elementary schools intervention due to high saturation of interventions and competing interest E.g. influence of the food industry, and dependability of school finances on food sales. Therefore, the experts' panel suggested focusing on the home environment and community settings to implement a behaviour change intervention. Similarly, the fieldwork identified women as an overworked population due to their role in house labours, children care and work outside the home. However, the group of experts suggested focusing on women with children 5-18 because fieldwork evidence also identified them as entry points to houses and main responsible for food purchase and cooking.

Contribution of stakeholders to rapid testing and development of materials

There are three different types of stakeholders involved in this project: The expert advisory group integrated for CIDE, INSP and UCL. The implementation partners, ITESO, 2CV and Leith. The community stakeholders, municipal government of Zapopan, community centres staff, and people who live in the areas. The expert advisory group and implementation partners developed the theory of change of the interpersonal intervention and specified behavioural change pathways. ITESO developed the materials to operationalize the behavioural change pathways and the rapid testing methodology. ITESO's used service design methodology and implementation through rapid testing sprints. The team established 5 sprints to carry out the implementation of the rapid testing of the intervention materials in the communities, considering 3 groups of 5 people from each of the communities who gave feedback and opinions to rapid testing. Local government provided access to community centres and ease recruitment of participants by advertising and legitimizing the activities through their staff. Finally, people living in the target areas informed the behavioural diagnosis and helped to rapid test the material for the interpersonal intervention by providing feedback.

Context for development of rapid testing of the materials

The intervention plan focused on three key communities, each with distinct geographical and urban characteristics. Miramar, the most 'urban' of all the locations due to proximity to the city and densely populated. Villas de Guadalupe, located in the outskirts of the City, and an

irregular settlement of people. Acatlan, geographically the most rural location. These communities must navigate several challenges like day like crime, drug and alcohol abuse, domestic violence and unemployment. (see figure 1)

**This figure was adapted from previous 2CV reports*

Figure 1. shows some examples of the challenges and indicators informing the current situation of these areas.

Theory used for the development of intervention materials

Interventions to improve health and nutrition behaviours can be best designed with an understanding of relevant theories of behaviour change and the ability to use them systematically. Interventions that are based on social and behavioural science theories are more effective than those lacking a theoretical base and that and that some strategies that combine multiple theories and concepts have larger effects (Glanz et al, 2010). Determining the factors and barriers that influence behaviour is essential for any successful intervention that aims to change existing behaviour (Cane et al, 2012).

The intervention development process used the COM-B system and the behaviour change wheel for behavioural diagnosis and selection of behaviour change techniques. According to these models, a particular behaviour will occur only when the target audience has the capability, opportunity and motivation to engage in a given behaviour. Capability and opportunity influences people motivation. The greater the capability and opportunity the greater the likelihood a person will be motivated to perform a behaviour (Michie, Atkins, et

al., 2014; Michie et al.., 2011). Figure 2 synthetize the elements and links suggested by the COM-B system.

**Figure provided by Anabelle Bonvecchio adapted from Michie et al., 2011*

Figure 2. Understand the Behaviour: Identify what needs to change using the COM-B model

Criteria for development of the intervention

For the guiding principles, the team selected COM-B and Behaviour Change Wheel to identify the most appropriate behaviour change techniques and took into account the APEASE criteria, the cultural relevance for the target population and the general feasibility in the context of behavioural intervention BHPMx. For instance, the team considered cost to deliver, probability to deliver intervention as designed, effect size of intervention in relation to the desired outcomes, extent to which an intervention is judged to be appropriate by relevant stakeholders, and extent to which an intervention may reduce/increase the disparities in standard of living, wellbeing or health between different sectors of social.

Criteria for rapid testing of the materials

The rapid testing demonstrates the commitment and orientation towards the target population or audience, understanding how the audience perceives and interprets the concept, activities, messages, and other components of the intervention. There are multiple benefits that justify the rapid testing such as estimating audience response, reducing the risk of misdirection, making materials more effective, and saving time and money.

The guidelines that were used in the rapid testing with the target population are designed to explore and validate activities, materials and the understanding of the messages, attracting attention, attractiveness, relevance, credibility, acceptance, persuasion and usefulness. Therefore, we consider essential the evaluation of the following points: a) Evaluate how the messages / materials attract attention; b) measure understanding; c) identify strengths and weaknesses; d) determine relevance for the audience; e) capture sensitive items.

Description of the interpersonal intervention developed

One of the results of the development of the materials for the interpersonal intervention are the behavioural pathways for change. The former is the map linking behavioural diagnosis, intervention functions, behaviour change techniques and delivery modalities. The table 2 present the consensus reached by the expert group. The four key behaviours that are expected to be addressed are noted in the header of the table, and each column describes the pathways to achieve behaviour change.

Behaviours	Women reduce amount of sugar added during food preparation in their houses.	Women reduce the amount of sweetened beverages in each mealtime in their house.	Women reduce the purchase of food with warning labelling high in sugar when they are buying house supplies.	Women reduce the amount of sugar added as topping for snacks between mealtime (e.g. honey, sugar, piloncillo).
COM-B components	**What needs to happen for the target behaviour to occur?**	**Intervention Function**	**BCT**	**Mode of delivery**
Physical capability Physical skills, strength, stamina	NA	NA	NA	NA
Psychological capability Knowledge, cognitive-psychological skills, memory, attention, behavioural regulation strength	PC.1. Increased knowledge on foods with sugar (Know > Knowledge > TDFv2). PC.2. Increased knowledge on sugar contained by current diet. // Know the sugar and fat content of the beverages/foods/snack most frequently consumed (Know > Knowledge > TDFv2). PC.3. Skills developed to read food labelling for sugar. // Know how to read warning	PC.1. PC.2. PC.6. Education PC.3. PC.4. PC.7. Training PC.5. PC.8. Enablement PC.8. Enablement; Conserve mental resources	PC.1. PC.2. 2.1. Provide informative or evaluative feedback on performance of sugar contained in food preferences and in current diet. PC.3. & PC.4. 4.1. Instruction on how to perform a behaviour: Food labelling reading and Use of sugar. 15.2. Mental rehearsal of successful performance on the decision process for food purchasing. 15.4. Self-talk… on the decision process for food purchasing. PC.5.	PC.1. PC.2. 2.1 Face-to-face > Group To deliver during group sessions for the preparation of the challenge participants. PC.3. & PC.4. 4.1. 15.2 15.4 Face-to-face > Group To deliver during group sessions for the preparation of the challenge participants. PC.5.

	food labelling (Skills > Ability > TDFv2). PC.4. Skills developed to appropriate use of sugar in food preparation (Skills > Ability > TDFv2). PC.5. Increase memory and attention to monitoring the amount of sugar/ cooking fat/ added fat. // Notice and remember to decrease the amount of sugar and fat add to food preparation (Mem > memory and attention > TDFv2). PC.6. Know the risk and impact on health of diets high in sugar and fat (Know > Knowledge > TDFv2). PC.7. Ability to establish reminders (Skills > Ability > TDFv2). PC.8. For cognitive overload/tiredness maybe Ana and Fernanda can provide ideas (ego depletion/willpower) (Mem > Cognitive overload > TDFv2)		1.4. Action planning on the decision process for food purchasing. PC.6. 5.1. Provide information (written, verbal) about health consequences of sugar consumption. PC.7. 4.1. Advise or agree on how to stablish reminders. PC.8. 11.3. Advise on ways of minimising demands on mental resources to facilitate behaviour change 6.1. Role play exercise of women on how to deal with husband and school-age children and adolescents. 6.1. Role play exercise of school-age children and adolescents on how to be an adherence partner.	1.4. Face-to-face > Group To deliver during group sessions for the preparation of the challenge participants. PC.6. 5.1. Face-to-face > Group To deliver during group sessions for the preparation of the challenge participants. PC.7. 4.1. Face-to-face > Group To deliver during group sessions for the preparation of the challenge participants. PC.8. 11.13 Face-to-face > Group To deliver during group sessions for the preparation of the challenge participants.
Physical opportunity	PO.1.	PO.1. PO.2.	PO.1.	PO.1. 12.5.

Environment, time, resources, barriers	Modify the environment to allow opportunity to monitor the outcome of a target behaviour; water consumed (Env > Material Resources > TDFv2).. PO.2. Modify the environment to allow opportunity to monitor the occurrence the target behaviour; sweetened beverages consumed (Env > Material Resources > TDFv2).. PO.3. Increase physical resources to monitor sugar consumed (Env > Material Resources > TDFv2).. PO.4. Increase physical resources to monitor water consumed (Env > Material Resources > TDFv2).. PO.5. Barriers availability of water (It is not clear from research if water is available and consume) (Env > Material Resources > TDFv2). PO.6. Time available for participation in cooking demonstration (Env > Resources > TDFv2)..	Environmental restructuring of the family. PO.3. PO.4. Enablement	12.5. Adding objects to the environment to give feedback on the outcome of a behaviour (2.4): A pipimetro next to the toilet to feed the person about the current level of water consumed by comparing urine colour to a standard. PO.2. 12.1. Restructuring the physical environment of the kitchen by adding a family monitoring board to quantify glasses of sweetened beverages by each member of the family. PO.3. N.A. Give participant a set of measuring spoons to increase capability to self-monitor sugar added to foods (2.3. Self-monitoring of behaviour. PO.4. N.A. Give participant a bottle with refill counter in order to increase his psychological capability to self-monitor water consumed (2.3. Self-monitoring of behaviour). 7.1. Introduce an environmental stimulus on a water bottle to with the purpose of prompting a refill of water and/or water consumption.	Distance > Population level > Printed materials. Face-to-face > Group To deliver during group sessions for the participants of the challenge. PO.2. 12.1 Distance > Population level > Printed materials. Face-to-face > Group To deliver during group sessions for the participants of the challenge. PO.3. N.A. 2.3 Distance > Population level > Printed materials. Face-to-face > Group To deliver during group sessions for the participants of the challenge. PO.4. N.A. 2.3 7.1. Distance > Population level > Printed materials. Face-to-face > Group To deliver during group sessions for the participants of the challenge.
Social opportunity	SO.1. Acceptability and expectations of family members, especially	SO.1. Modelling	SO.1 6.1. Staged a public demonstration of an observable sample of how to prepare	SO.1. SO.2. 6.1.

Influences, social cues, cultural norms	husbands and grandmothers to decrease the consumption of sweetened beverage (Soc > soc norms > TDFv2). SO.2. Increase social pressure to decrease amount of sugar in food preparation (Soc > Soc Pressure >TDFv2). SO.4. Increase social pressure to decrease the purchase of food with warning labelling high in sugar (Soc > Soc Pressure >TDFv2).	SO.2. , SO.3 Enablement	beverages reduced in sugar executed by members of the community (the best healthy recipe proposals be displayed). SO.2. 3.2. Arrange practical help from friend/grand-mothers/project team (adherence partners) to decrease amount of sugar in food preparation. 3.3. Arrange emotional support from friend/grand-mothers/project team (adherence partners) to decrease amount of sugar in food preparation SO.3. 3.2. Arrange practical help from friend/grand-mothers/project team (adherence partners) to decrease the purchase of food with warning labelling high in sugar. 3.3. Arrange emotional support from friend/grand-mothers/project team (adherence partners) to decrease the purchase of food with warning labelling high in sugar	Distance > Population level > digital media > Internet Challenge participants are going to present their best ideas through a fair/facebook live. SO.2. 3.2. 3.3. Distance > individual level > Phone > Phone helpline group Each cohort of the Challenge participants is going to be included in a social network groups to receive the techniques and additional support for 2.3, 7.1., 12.1, 12.5. SO.3. 3.2. 3.3. Distance > individual level > Phone > Phone helpline group Each cohort of the Challenge participants is going to be included in a social network groups to receive the techniques and additional support for 2.3, 7.1., 12.1, 12.5.
Automatic motivation Needs, desires, impulses, reflexes, reinforcement, emotion	AM.1. Elicit a positive affect and subjective satisfaction for decreasing the consumption of sweetened beverages. (Em > Pos affect > TDFv2) AM.2. Elicit a positive affect and subjective satisfaction for	AM.1. AM.2. AM.3 Insentivisation AM.4. AM.5. AM.6. Persuasion Modeling	AM.1. AM.2. AM.3 10.2. Arrange for the delivery of a prize if and only if participant achieve challenges' goals on a sugar reduction. Includes reduction in: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar 1.8. Create a written specification for the goals on a sugar reduction challenge, and post	AM.1. AM.2. AM.3 10.2. 1.8. 13.5 Face-to-face > Group To deliver during group sessions for the participants of the challenge. AM.1. AM.2. AM.3 16.2

	decreasing the amount of sugar in food preparation (Em > Pos affect > TDFv2) .	it on social media. Includes reduction in: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar.	Distance > individual level > Phone > Phone helpline group Each cohort of the Challenge participants is going to be included in a social network groups to receive the techniques.
	AM.3. Elicit a positive affect and subjective satisfaction for decreasing the purchase of food with warning labelling high in sugar (Em > Pos affect > TDFv2) .	16.2. Advise participants to imagine performing the sugar reduction behaviours in real life and then to focus on felling proud for taking care of their health. Includes reduction in: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar.	AM.4. AM.5. AM.6. 15.1 13.5 13.1 6.2. 6.1 Distance > individual level > Phone > Phone helpline group Each cohort of the Challenge participants is going to be included in a social network groups to receive the techniques.
	AM.4. Increase de desire to decrease consumption of sweetened beverages (Re > contingencies > TDFv2)	AM.4. AM.5. AM.6. 15.1 Tell the participants that they can successfully perform reduce sugar consumption against self-doubts and asserting that they can and will succeed in: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar	
	AM.5. Increase de desire to decrease the amount of sugar in food preparation (Re > contingencies > TDFv2)	13.5. Advise challeges' participants to call themselves as "ex-consumidoras de azucar".	AM.4. AM.5. AM.6. 6.1. Distance > Population level > Digital media > internet Community centres are going to distribute in their social media sites the techniques.
	AM.6. Increase de desire to purchase food with warning labelling high in sugar. (Re > contingencies > TDFv2)	13.1. Inform challenge participants that they and example to their friends and family for the reduction in : a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar	
		6.1. Provide an observable and desirable example on tricks to reduce : a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar.	
		6.2. Draw attention to others' performance for sugar consumption during challenges. So	

			they can their performance against group average. Includes reduction in: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar.	
Reflective motivation Self-conscious planning, beliefs what's good/bad Social-professional role and identity, belief about capabilities, optimism, intention, goals, belief about consequences	RM.1. Increase intention to decrease the purchase of food with warning labelling high in sugar (Int > - > TDFv2). RM.2. Increase intention to decrease the amount of sugar in food preparation (Int > - > TDFv2). RM.3. Belief that high consumption of sugar put their health and that of their families on risk (Bel Cons > Belief > TDFv2). RM.4. Belief that overweight and obesity are not only genetic and that they can do something to prevent it and its health consequences (Bel Cons > Belief > TDF v2). RM.5. Prioritize using less sugar in food preparation (Beh Reg > Goal Priority > TDF v2). RM.6. Prioritize adding less sugar to beverages (Beh Reg > Goal Priority > TDF v2).	RM.1. RM.2. RM.3. RM.4. Education RM1. RM.2. RM5. RM.6. RM.7. Persuasion RM5. RM.6. RM.7. Insentivisation	RM.1. RM.2. RM.3. RM.4. 5.1. Information about health consequences about purchase of food with warning labelling high in sugar, sugar in food preparation, sugar health risks, relationship of genetics and overweight. RM1. RM.2. RM5. RM.6. RM.7. 9.1. Present verbal or visual communication from a credible source in favour of or against the behaviour to reduce sugar consumption. Includes: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar 9.2. Advise the person to identify and compare reasons for wanting (pros) and not wanting to (cons) reduce sugar consumption. Includes: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar 9.3. Prompt or advise the imagining and comparing of future outcomes of reduced sugar consumption versus conserving current levels of sugar consumption. RM5. RM.6. RM.7. 1.8. Create a written specification to prioritize on reduction of sugar,and use as witness the group of a workshop. Includes reduction in: a) consumption of sweetened beverages; b)	RM.1. RM.2. RM.3. RM.4. 5.1. 9.1. Face-to-face > Group To deliver during group sessions for the preparation of the challenge participants. RM1. RM.2. RM5. RM.6. RM.7. 9.1. Distance > Population level > Digital media > internet Community centres are going to distribute in their social media sites the techniques.

	RM.7. Prioritize reducing purchase of food with warning labelling high in sugar. (Beh Reg > Goal Priority > TDF v2).	sugar in food preparation; and c) purchase of food with warning labelling high in sugar. 1.9. Ask the person to affirm or reaffirm statements indicating commitment on reduction of sugar during workshops. Includes reduction in: a) consumption of sweetened beverages; b) sugar in food preparation; and c) purchase of food with warning labelling high in sugar.

Theory used for rapid testing of intervention materials

The rapid testing of the materials was informed methodologically by three axis. First, the service double diamond model as a source for procedure and techniques for testing. Secondly, SCRUM as a methodology to administer a design process, and finally, a strong process for community outreach and participation.

The methodology used to design the materials, the service design is the double diamond model, composed of continuous steps of diverging (creating options) and converging (making choices) that creates solutions and helps the navigation through uncertainty reduction. It is a process of learning, where more knowledge is gained through every iteration (non-linear process, See figure 3).

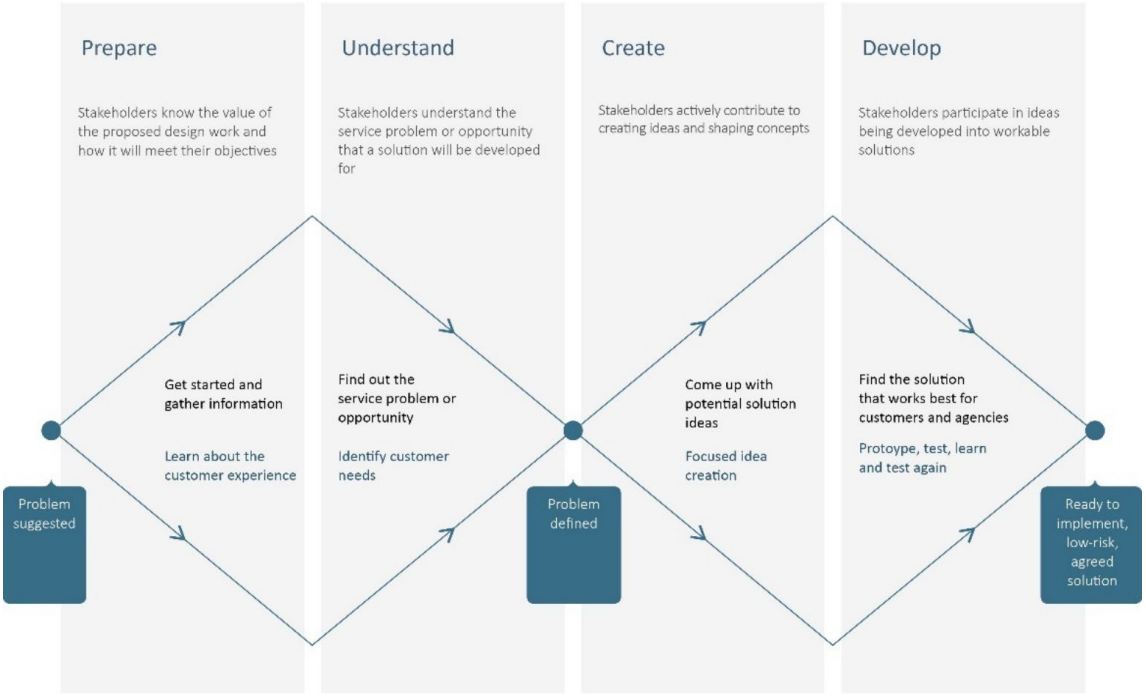

Figure 3. Service design double diamond iterative process.

SCRUM was used in order to test and develop materials in a fast and dynamic way. The team combined the service design double diamond methodology with the scrum agile project management principles. We developed product increments on the service design validation process through rapid testing sprints (See figure 4).

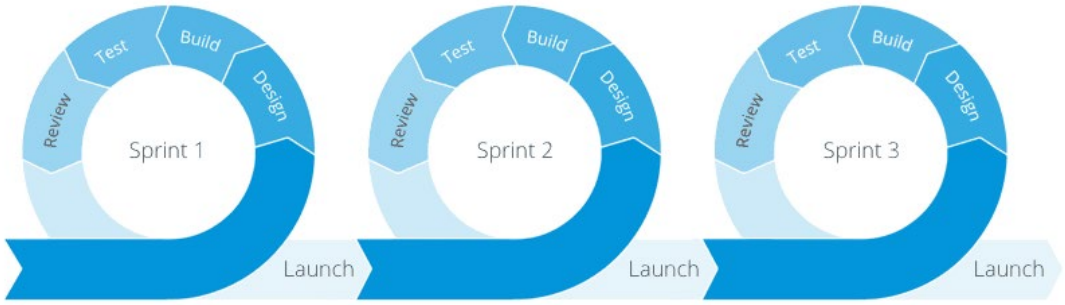

Figure 4. Scrum's agile product development model.

Rapid testing process for intervention materials

The process was divided into 5 sprints with specific product increment objectives for each one (see figure 5).

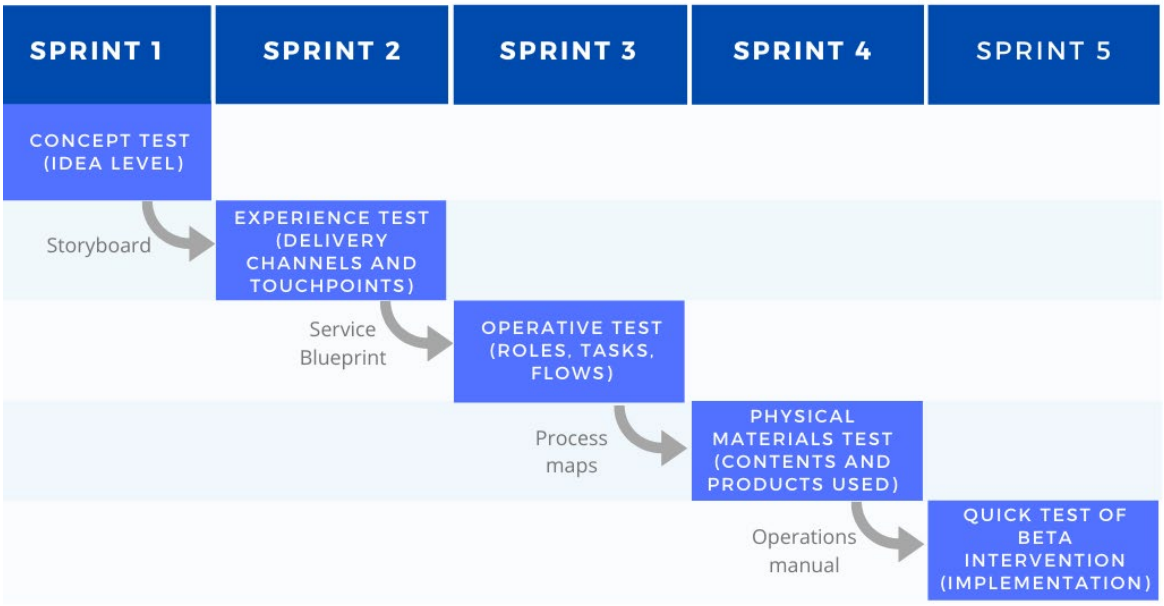

Figure 5. Materials development plan broken down into rapid testing sprints and product increments of each one.

It is important to make the distinction between the two types of materials we determined for the intervention: knowledge materials (operations manual) and physical materials (ppts to be used in the sessions, forms, monitoring boards, portion meters, bottles, recipes, etc.). The knowledge materials constitute the central part of the interventions as it establishes the guidelines and instructions for the interventionists on what needs to be done to apply the BCT's correctly. Also stablishes how and when to use the physical materials provided to

optimize its impact according to beneficiary's tested interests and needs. The knowledge materials are the key towards a replicable and standardized intervention that ease monitoring and evaluation.

The preliminary materials developed and rapid tested are centered on sprints 1, 2 and 3 (knowledge materials) as they had to be developed before physical materials (sprint 4). It would be useless to have the physical materials if the knowledge materials are not previously tested.

Sprint	Products	Activities
Sprint 0 *Planning stage*	**Theory of change for the interpersonal intervention** **Behavioural pathways for change**	1. 2CV+ITESO Research: We based our design in the insights pointed in the 2CV+ITESO Report. We also had a jump on the autoethnographies, and hypothesis workshops held in the previous months in order to gain first hand empathy and have a better understanding of our target's context. 2. Social innovation through Service Design: We analyzed literature and documented projects where social innovation was developed through design thinking methodologies such as Service Design. 3. Behaviour Change Wheel / COM-B: we studied and understood the methodology and analyzed the BCT's Taxonomy. 4. Development of theory of change for the interpersonal intervention with the expert group. 5. Development of the behavioural pathways for change in the interpersonal intervention with the expert group. See table 1 and 2
Sprint 1 *Concept test (knowledge materials)*	**Storyboard**	1. Storyboards are a powerful way to show the value of ideas and product visions in their context of use. We used a storyboard to integrate the intervention activities and components on a single coherent customer process. We used the storyboard to rapid test with users before the actual design and development starts. See annex 1
Sprint 2 *Beneficiary's experience test (knowledge materials)*	**Service Blueprint**	1. We integrated the operative complexity of the intervention and its components into a coherent scheme where each element of the service adds value and is aligned to the customer's journey through the experience given. See annex 2
Sprint 3 *Operative Test knowledge materials*	**Process maps**	1. In order to clarify how certain key support processes are performed within the service blueprint, several process maps were created. As a result, crucial activities are now standardized, and thus a trustworthy replicability of this interpersonal intervention model can occur in different intervention cycles on the same community. This means that feedback can take place and consequently, improve the system itself continuously. See annex 3

References

Cane, J., O'Connor, D., & Michie, S. (2012). Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation science*, *7*(1), 37.

Duncan, E., O'Cathain, A., Rousseau, N., Croot, L., Sworn, K., Turner, K. M., ... & Hoddinott, P. (2020). Guidance for reporting intervention development studies in health research (GUIDED): an evidence-based consensus study. *BMJ open*, *10*(4), e033516.

Glanz, K., & Bishop, D. B. (2010). The role of behavioral science theory in development and implementation of public health interventions. *Annual review of public health*, *31*, 399-418.

Michie, S., Atkins, L., & West, R. (2014). The behaviour change wheel. *A guide to designing interventions. 1st ed. Great Britain: Silverback Publishing*, 1003-1010.

Michie, S., Van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation science*, *6*(1), 42.

Annexes

Annex 1. Storyboard

https://iteso01-my.sharepoint.com/:f:/g/personal/agustinrodriguez_iteso_mx/EmVBWFuSUWNOrmrtjweiFWIBT_FOV3hTLGQNbgcEv2FDZA?e=i2x0HY

Annex 2. Service Blueprint

https://iteso01-my.sharepoint.com/:f:/g/personal/agustinrodriguez_iteso_mx/EjRfLsWLQzdNr_8SeLx9YtIBBSdts7oJHAU5n-gBxpPACg?e=iZJBX8

Annex 3. Process maps

https://iteso01-my.sharepoint.com/:f:/g/personal/agustinrodriguez_iteso_mx/EuexnfWgWkhDv6tQAL0crCABZDj_vPt8LPHEjLW5SjehwA?e=dY3znI