***Supplement 1: Intervention Theory of Change outlining strategies and measures/ indicators mapped to CSAI***

| Goal /desired outcome | Action/ Behaviour to be adopted | Assumptions | Barriers / challenges | Intervention strategies | Measures/indicators | Results reported against indicators (pre-vs-post) |
| --- | --- | --- | --- | --- | --- | --- |
| INTERVENTION EFFECTS & CULTURAL TAILORING | | | | | |  |
| COMMUNITY/ FAMILY LEVEL | | | | | |  |
| All 3 church communities agree to participate in the weight loss challenge | * All 3 church communities find availabilities and allow time to include the WL challenge in their church calendar | * All 3 church communities will be willing to allocate time despite other competing events and activities and COVID | * COVID and churches just returning to gathering. Communities may not be fully ready to participate in a weight loss challenge | * Include an element of ‘fun’ gathering asopportunity to distract / help rise out or recover from social and mental effects of COVID (within the appropriate guidelines) | * # of churches signing up | * 1 out of 3 churches * 51 eligible adults in recruited church |
| 70% of each church community engage/ participate in the intervention | * Church community sees value and are willing to consent and participate in the study | * Community understands the challenges of obesity and diabetes and agrees there is a need to participate in the intervention | * Potentially too many activities happening in the church communities that the intervention does not get prioritisation (e.g. church events, funerals etc) * Competing similar programs already in church community | * Identify leadership network and go through appropriate church structure (e.g. health committee, pastors and other lay leadership) * Identify key champions/ trusted figures/ influential leaders within the / community and gain their support * Use existing Pasifika Advisory committee and Pastor to seek their support * **Incentive (non-monetary):** * Develop a toolkit (professionally designed) to give as incentives for participation * includes a bioimpedance body weight scale per church) | * # of participants per church (70% of registered members per church community) * Engagement of leading Pastor * Development of a toolkit for distribution at intervention start. * Feedback on usefulness of toolkit (one to one surveys) | * Baseline 36/51 (71%); follow-up 34/36 (94% retention) * Leading pastor supportive and engaged at the beginning * 36 toolkits printed and distributed at registration & baseline data collection   **Feedback from participants**:   * Too much information, materials to be in video/infographics; less printed material. See **Results.** |
| People that matter to potential participants in community and family are supportive of changes made | * Those living and interacting with participants are supportive and will encourage new behaviour (e.g. healthy eating and exercise habits) | * Individuals can share the importance of participating in the weight loss challenge with those important to them * Those important to participants want to give their support &/ participate with the participants in the WL challenge | * Influences in the family and community do not see importance of a weight loss challenge | * Included activities centred around families e.g. WL challenge teams in families * Encourage activities that involve those around them | * # of teams within a church * # of activities delivered in teams | * Team 1: 11 participants * Team 2: 14 participants * Team 3: 11 participants * 12 weekly sessions * Teams 2 reported self-initiated other sessions outside WLC weekly sessions |
| INDIVIDUAL | | | | | |  |
| *KNOWLEDGE* | | | | | |  |
| Reinforce and improve or increase: | * Choose to eat 2 services on vegetables and 2 fruits daily * Choose healthier cuts of meat and cut fats before and after cooking meat * Choose less or no take away foods * Cook at home using boiling, grilling, or roasting (on a rack) (vs. frying or roasting in pan) | * There is motivation (based on knowledge) to choose low fat cuts/ cut off fat * Have access and means to purchase fruits, vegetables, and low-fat cuts of meat * Know which meats contain more fat * Understand/comprehend health information provided on healthier options for cooking meats and meals * Enjoy increasing leafy greens | * Taste – Participants may need to acquire new taste for lower fat meats * Affordability – participants may think healthy options cost too much * Availability – participants may think/not know healthy foods are available in their locality * Convenience – participants may be time poor and think that cooking healthy takes up too much time * Low health literacy to understand and action / practice information provided | * Provide information / resources with healthy recipes that are low cost, cater for a bigger family (e.g. 4, 8, 12 etc) and provide new cooking information (e.g. baking, use of oil sprays vs frying) * Identify and train church peer support facilitators (PSFs) to provide ground support weekly to talk about availability, affordable options, and any information that might not have been clear. * Teams to identify group goals and work together as a team to achieve weight loss goals * Individual trackers to support and motivate individuals towards moving / progressing in the right direction * Information provided in the Toolkit on healthy eating, physical activity, and weight loss | * **Clinical health data**:   + ∆Weight (kg),   + ∆WC (cm)   + ∆BMI (kg/m2)   + ∆BF%   + ∆RBG (mmol/L)   + ∆HbA1c%   + ∆HR (bpm)   + BP diastolic (mmHg)   + BP systolic (mmHg) * **Diet Indicators (pre-post)**   ***Eating habits***   * Days I ate breakfast in a typical week (≤3 days, ≥4 days) * Days I ate lunch in a typical week (≤3 days, ≥4 days) * Days I ate dinner in a typical week (≤3 days, ≥4 days) * In a typical week I eat breakfast most of the time at…(Home, Eat out, Don’t eat meal) * In a typical week I eat lunch most of the time at…(Home, Eat out, Don’t eat meal) * In a typical week I prepare dinner at… (Home, Eat out, Don’t eat meal)   ***Individual choices***   * #times in a typical week I felt I ate too much * #times in a typical week I lost control (binge eating) * I usually choose to drink water/ non-sugary drinks vs sugary drinks/juice (Yes/No) * I eat 4+ servings of vegetables daily (Yes/No) * I eat at least 3 different protein foods every 1-2 days (Yes/No) * I eat less fat overall (Yes/No) * I have reduced the amount of food I eat at each sitting (Yes/No) * I eat more foods with fibre(Yes/No) * I eat less sugary foods and carbohydrates (Yes/No) * Type of milk I use (Full fat, skim/reduced fat/no dairy, Don’t drink milk)   ***Cooking and planning***   * How I usually cook my eggs (Boil/poach, fry/scramble, microwave, Don’t eat eggs) * How I usually cook my chops (Boil/microwave, Grill/roast on rack, Fry/roast in pan, Don’t eat/cook chops) * How I usually cook my chicken ((Boil/microwave, Grill/roast on rack, Fry/roast in pan, Don’t eat/cook chops) * I cut off the fat off meat before I cook it (Always/ Usually/ Sometimes/ Never) * I cut the fat off meat after I cook it (Always/ Usually/ Sometimes/ Never) * I remove fat off chicken before I cook it (Always/ Usually/ Sometimes/ Never) * I remove fat off chicken after I cook it (Always/ Usually/ Sometimes/ Never) * I have the responsibility for food shopping (Most or all/ about half/ little or none) * I have the responsibility for planning meals (Most or all/ about half/ little or none) * I have the responsibility for preparing/cooking meals (Most or all/ about half/ little or none)   **Perceptions of availability and accessibility** *(Strongly agree/ Agree/ Neither agree or disagree/ Disagree/ Strongly disagree)*  - I like most vegetables  -I don’t like fruit  - Members of my household won’t eat vegetables  -I don’t have time to prepare vegetables  -I usually keep fruit at home  -I usually buy a lot of vegetables   * I can’t afford to buy fruit * I can’t buy vegetables where I live * I think vegetables are inexpensive * Fruits are available where I work * I can’t get vegetables in restaurants * **Physical Activity Participation** * In past 7 days: #mins vigorous exercise * #mins moderate exercise * #mins walking * Days participating in vigorous physical activity in the past 7 days (<3 days, ≥3 days) * Days participating in moderate physical activity in the past 7 days (<3 days, ≥3 days) * Days spent walking at least 10 minutes at a time in the past 7 days (<3 days, ≥3 days) * **Sedentary behaviour** * #mins screen time * #mins sitting driving/transport * #mins sitting eating meal * #mins Other * I have reduced time spent sitting (e.g. watching TV) (Yes/No) * I have increased my daily steps (Yes/No) * I plan more activity in my day (Yes/No) * I plan more activity in the weekends (Yes/No)   ***Motivations***   * I am trying to reach my best weight (Yes/No) * I am making myself stronger (Yes/No) * **Community activator observation** / field notes (during intervention) * **One to one interview** of team participants (qualitative) (after intervention) * **Focus Group** of participants (after intervention) | **Clinical health data (n=34)**   * ∆WG=-3.35kg * ∆WC=-3.2cm * ∆BMI=-1.12kg/m2 * ∆BF=-3.45% * ∆RBG -0.15mmol/L * ∆HbA1c=-0.00% * ∆HR=-4.5bpm * BP diastolic=-6.0mmHg * BP systolic=2.0mmHg   **-Diet Indicators (pre-post)**  **Eating habits**  **Breakfast**   * ≤3 days 67.6% vs 29.4% * ≥4 days 32.4% vs 70.6%\*   **Lunch**   * ≤3 days 50.0% vs 17.6% * ≥4 days 50.0% vs 82.4%\*   **Dinner**   * ≤3 days 20.6% vs 17.6% * ≥4 days 79.4% vs 82.4%   **In a typical week I eat breakfast most of the time…**  **-** At home 85.3% vs 91.2%  -Eat out 0.00% vs 2.9%  -Don’t eat meal 14.7% vs 5.9%  **In a typical week I eat lunch most of the time…**  **-** At home 64.7% vs 85.3%  -Eat out 29.4% vs 8.8%  -Don’t eat meal 5.9% vs 5.9%  **In a typical week I eat dinner most of the time…**  **-** At home 94.1% vs 94.1%  -Eat out 5.9% vs 5.9%  -Don’t eat meal 0% vs 0%  ***Individual choices***  **-Median±IQR pre-vs-post**  **Ate too much**  **-**3.0±5.25 vs 1.0±3.0times  **Lost control**  -2.5±6.0 vs 6.0±8.3 times  **Choose to drink water/non-sugary drinks**  -Yes 67.6% vs 82.4%  -No 32.4% vs 17.6%  **I eat 4+serviings of vegetables daily**  -Yes 52.9% vs 85.3%  -No 47.1% vs 14.7%  **I eat at least 3 different types of protein foods every 1-2 days**  -Yes 64.7% vs 82.4%  -No 35.3% vs 17.6%  **I eat less fat overall**  -Yes 44.1% vs 76.5%  -No 55.9% vs 23.5%  **I have reduced the amount of food I eat at each sitting**  -Yes 61.8% vs 79.4%  -No 38.2% vs 20.6%  **I eat more foods with fibre**  -Yes 55.9% vs 76.5%  -No 44.1% vs 23.5%  **I eat less sugary foods and carbohydrates**  -Yes 61.8% vs 76.5%  -No 38.2% vs 23.5%  ***Cooking and planning***  **How I usually cook my eggs**  -Boil 44.1% vs 61.8%  -Fry 35.3% vs 29.4%  -Don’t eat 20.6% vs 8.8%  **How I usually cook my chops**  -Boil 5.9% vs 8.8%  -Grill 38.2% vs 58.8%  -Fry 35.3% vs 20.6%  -Don’t eat 20.6% vs 11.8%  **How I usually cook my chicken**  -Boil 42.4% vs 29.4%  - Grill 30.3% vs 50.0%  - Fry 27.3% vs 20.6%  -Don’t eat 0% vs 0%  **I cut fat off meat before I cook it**  -Always 41.2% vs 58.8%  -Usually 14.7% vs 8.8%  -Sometimes 32.4% vs 20.6%  -Never 11.8% vs 11.8%  **I cut fat off meat after I cook it**  -Always38.2% vs 55.9%  -Usually 8.8% vs 8.8%  - Sometimes 32.4% vs 23.5%  -Never 20.6% vs 11.8%  **I cut the fat off chicken before I cook it**  -Always 50.0% vs 64.7%  -Usually 2.9% vs 5.9%  -Sometimes 23.5% vs 20.6%  -Never 23.5% vs 8.8%  **I remove fat off chicken after** **I cook it**  -Always 38.2% vs 58.8%  -Usually 8.8% vs 14.7%  -Sometimes 26.5% vs 14.7%  -Never 26.5% vs 11.8%  **I have the responsibility for shopping**  -Most or all 26.5% vs 58.8%  -About half 47.1% vs 26.5%  -Little or none 26.5% vs 14.7%  **I have the responsibility for planning meals**  -Most or all 29.4% vs 55.9%  -About half 38.2% vs 29.4%  -Little or none 32.4% vs 14.7%  **I have the responsibility preparing/cooking meals**  -Most or all 32.4% vs 58.8%  -About half 44.1% vs 20.6%  -Little or none 23.5% vs 20.6%  **Perceptions of availability and accessibility\*** *(no one answered the category ‘neither’ so removed)*  **I like most vegetables**  -Strongly Agree 73.5% vs 64.7%  -Agree 14.7% vs 35.3%  -Disagree 5.9% vs 0.0%  -Strongly disagree 5.9% vs 0.0%  **I don’t like fruit**  Strongly Agree 17.6% vs 11.8%  -Agree 0.0% vs 11.8%  -Disagree 55.9% vs 41.2%  -Strongly disagree 26.5% vs 35.3%  **Members of my household won’t eat vegetables**  -Strongly Agree 38.2% vs 14.7%  -Agree 5.9% vs 11.8%  -Disagree 50.0% vs 8.8%  -Strongly disagree 23.5% vs 17.6%  **I don’t have time to prepare vegetables**  -Strongly Agree 32.4% vs 29.4%  -Agree 17.6% vs 11.8%  -Disagree 41.2% vs 44.1%  -Strongly disagree 8.8% vs 14.7%  **I usually keep fruit at home**  **-**Strongly Agree 61.8% vs 64.7%  -Agree 26.5% vs 29.4%  -Disagree 8.8% vs 5.9%  -Strongly disagree 2.9% vs 0.0%  **I usually buy a lot of vegetables**  -Strongly Agree 52.9% vs 58.8%  -Agree 20.6% vs 35.3%  -Disagree 20.6% vs 5.9%  -Strongly disagree 5.9% vs 0.0%  **I can’t afford to buy fruit**  -Strongly Agree 23.5% vs 14.7%  -Agree 0.0% vs 14.7%  -Disagree 38.2% vs 52.9%  -Strongly disagree 38.2% vs 17.6%  **I can’t buy vegetables where I live**  -Strongly Agree 17.6% vs 11.8%  -Agree 0.0% vs 8.8%  -Disagree 41.2% vs 44.1%  -Strongly disagree 41.2% vs 35.3%  **I think vegetables are inexpensive**  -Strongly Agree 29.4% vs 41.2%  -Agree 32.4% vs 17.6%  -Disagree 29.4% vs 26.5%  -Strongly disagree 8.8% vs 14.7%  **Fruits are available where I work**  -Strongly Agree 50.0% vs 35.3%  -Agree 23.5% vs 44.1%  -Disagree 8.8% vs 17.6%  -Strongly disagree 17.6% vs 2.9%  **I can’t get vegetables in restaurants**  -Strongly Agree 23.5% vs 14.7%  -Agree 5.9% vs 2.9%  -Disagree 44.1% vs 44.1%  -Strongly disagree 26.5% v s 38.2%  **Physical Activity Participation (n=34)**  **In past 7 days:**  **#mins vigorous exercise**  -30.0±82.5 vs 60.0±45.0 mins  **#mins moderate exercise**  -30.0±67.5 vs 60.0±60.0 mins  **#mins walking**  -45.0±97.5 vs 30.0±30.0 mins  **Days participating in vigorous physical activity in the past 7 days**  -<3 days 61.8% vs 0.0%  -≥3 days 38.2% vs 100%  **Days participating in moderate physical activity in the past 7 days**  -<3 days 73.5% vs 61.8%  -≥3 days 26.5% vs 38.2%  **Days spent walking at least 10 minutes at a time in the past 7 days**  -<3 days 50.0% vs 11.8%  -≥3 days 50.0% vs 88.2%  **Sedentary behaviour**  **Minutes sitting time (‘other’ not answered, removed)**  -screen time: 67.5±273.7 vs 62.5±273.7 mins  -driving/transport: 60.0±90.0 vs 60.0±90.0 mins  -meal time: 50.0±41.25 vs 35.0±41.25 mins  **I have reduced time sitting (e.g. watching TV)**  -Yes 52.9% vs 97.1%  -No 47.1% vs 2.9%  **I have increased my daily steps**  **-**Yes 50.0% vs 32.4%  -No 50.0% vs 67.6%  **I plan more activity in my day**  -Yes 70.6% vs 55.9% vs  -No 29.4% vs 44.1%  **I plan more activity in the weekends**  -Yes 2.9% vs 38.2%  -No 97.1% vs 61.8%  ***Motivations***  **I am trying to reach my best weight**  -Yes 44.1% vs 73.5%  -No 55.9% vs 26.5%  **I am making myself stronger**  -Yes 52.9% vs 38.2%  -No 41.2% vs 61.8% |
| * Vegetables, fruits, cutting fat, fibre |
| * water intake & reduce sugary drinks | * Consciously decide to drink more water * Eat right portion size | * Understand how much water to drink daily and purchases water bottle to keep track * Understand correct portion size for weight loss | * Participants may not like the taste of drinking only water or need to adapt to reducing sugary drinks |
| * benefits/types of physical activity (planned and unplanned/casual) | * Increase number of steps daily * Reduce sitting time (TV, car, eating / other stationary times) | * Participants are willing to plan specific days and times to be physically active and want to reduce sedentary times | * Participants may not have time to participate in the physical activity * Participants may see cost (e.g. going to a gym) as a barrier to being physically active or building strength |
| * strength and regular every-day movement | * Do exercises that increase strength | * Participants are willing to move regularly and to participate in strength training exercises |
| Reduce portion sizes, carbohydrates, and starchy foods | * Understand what appropriate portion sizes should be especially of carbohydrates and starchy foods * Want to look up information/ find out around proper serving sizes if not available | * Understand different food groups, understand what appropriate portion size for each is (to know what a reduction would look like) * Participants know who to go to for information on serving sizes | * Participants may not be satiated with reduced portion control, carbohydrates, and starchy foods * Competing priorities (i.e. work, church and family obligations) does not allow time for adequate planning, shopping and prepping at home |
| Reducing fried and greasy take away foods | * To decide to cook at home and not order take away foods | * Participants have time to shop and cook at home * Participants would be willing to not order in takeaway foods |
| *ATTITUDES/ BELIEFS* |  |  |  |  |
| Participants are motivated to adopt lifestyle changes that will result in weight loss by: | * Participate in the challenge with intention to lose weight | * Participants are aware of the benefits of weight loss/ the need to lose weight * Participants are motivated to lose weight | * Participants may not have support of those around them (family and community) * Participants may find it difficult to stay motivated if weight scale is not moving | * Form teams with team leaders to motivate groups * Include ‘team’ trackers to encourage group working together * Incorporate a competition component for ‘fun’ challenges and competition * Enable participants to decide which messages they would like to focus on for their weight loss |
| Increasing desire and intention to be physically active | * Planning and setting aside time to be physically active at least 3 times weekly | * Understand connection between physical activity and weight loss | * Participants may not enjoy sweating or be able to endure the physical challenges of increasing activity | * PSFs to encourage team leaders to form group training times at least once a week * Teams to form around families / geographical locations for easy meeting up * Encourage PSFs and team leaders to include a component of ‘fun’ activities / activities that participants will enjoy joining * Offer a competition component as part of a ‘fun’ competition between groups / teams |
| Increase strength | * Take up activities that will increase strength and endurance | * Understand that consistent exercise will lead to increased physical strength and endurance | * Potential to not be able to know what types of activities to do/ where to start/what they would enjoy (if totally new) * Potential/prone to injuries if no proper instructor / if not physically active before |
| Participants enjoy feeling ‘lighter’ and or being ‘stronger’ | * Consistent engagement with teams | * With weight loss team members will ‘feel’ the benefits of losing weight * We assume having others see your progress is important | * Participants may not engage long enough / lose interest along the way * Participants have other physical priorities than being ‘lighter’ or ‘stronger’ | * Consistent team meeting at least once a week * Weekly weigh-ins to incorporate accountability * Support teams to find a place for one off meeting (e.g. volleyball and or walking groups) * Identify areas for teams to feel responsible or own the ‘weight loss’ and make decisions on its shape and form (e.g. prizes for weight loss) * Adding accountability through teams effort (i.e. individuals work together to contribute to overall team results) will increase willingness to continue /progress | **Quality of Life Questionnaire**   * Mobility (I have no problems walking about/ I have some problems walking about / I am unable to walk about) * Self-care (I have no problems walking about/ I have severe problems walking about / I am unable to walk about) * Usual activities (e.g. work-study, housework, family or leisure)(I have no problems performing my usual activities/ I have some problems performing my usual activities /I have severe problems performing my usual duties/ I am unable to perform my usual duties * Pain/discomfort (I have no pain or discomfort/I have slight or moderate pain and discomfort/ I have severe pain or discomfort) * Anxiety/depression (I am slightly anxious or depressed/ I am moderately anxious or depressed/ I am severely/extremely anxious or depressed) * Over the past two weeks I have had little interest or pleasure in doing things (not at all, several days, nearly every day) * I have felt down, depressed or hopeless (not at all, several days, nearly every day) * In the past 2 weeks ‘I have felt cheerful and in good spirits (all of the time, most of the time, some of the time, at no time) * I have felt calm and relaxed (all of the time, most of the time, some of the time, at no time) * I woke up feeling fresh and rested (all of the time, most of the time, some of the time, at no time) * I have felt vigorous and active (all of the time, most of the time, some of the time, at no time) * My daily life has been filled with things that interest me (all of the time, most of the time, some of the time, at no time) | **QOL Questionnaire**  **Mobility** **(n=18)**   * I have no problems walking about 88.9% vs 94.4% * I have some problems walking about 11.1% vs 5.6%   **Self-care**   * I have no problems walking about 94.4% vs 100% * I am unable to walk about * 5.6% vs 0.0   **Usual activities**   * I have no problems with performing my usual activities 94.4% vs 100% * I have no problems with performing my usual activities 5.6% vs 0.0%   **Pain/discomfort**   * I have no pain or discomfort 77.8% vs 83.3% * I have moderate pain or discomfort 16.7% vs 16.7% * I have severe pain or discomfort 5.6% vs 0.0%   **Anxiety/depression**   * I am not anxious or depressed 88.9% vs 100% * I am moderately anxious or depressed 11.1% vs 0.0%   **Over the past two weeks:**  **I have had little interest or pleasure in doing things**  - Not at all 88.8% vs 83.3%  - Several days 11.1% vs 16.7%  **I have felt down, depressed or hopeless**   * Not at all 88.9% vs 83.3% * Several days 11.1% vs 16.7%   **In the past 2 weeks:**  **I have felt cheerful and in good spirits**   * All of the time 55.6% vs 61.1% * Most of the time 27.8% 33.3% * Some of the time 16.7% vs 5.6%   **I have felt calm and relaxed**   * All the time 55.6% vs 66.7% * Most of the time 16.7% vs 22.2% * Some of the time 22.2% vs 16.7%   **I woke up feeling fresh and rested**   * All the time 61.1% vs 61.1% * Most of the time 16.7% vs 22.2% * Some of the time 33.3% vs 16.7%   **I have felt vigorous and active**   * All the time 66.7% vs 61.1% * Most of the time 16.7% vs 22.2% * Some of the time 27.8% vs 16.7% |
| Participants are concerned about family history of diabetes and intentionally take steps towards healthier living | * Awareness of family history and motivation to better understand risks involved | * Knowledge of diabetes, risks, and its management | * Low health service utilisation (i.e. no regular health check-ups) | * Motivational survey (i.e. questions in survey prompting awareness and information seeking behaviour) * Referral to GPs if clinical health data shows high HbA1c and blood pressure readings | Diabetes Knowledge and Management  What do you know about diabetes?  - Which of these is true? (A person with diabetes will have it for the rest of her life/ The body of a person with diabetes can handle sugar properly / Diabetes can be controlled / A person with diabetes has too much sugar in the blood/ A person with diabetes can be harmed if the diabetes is not controlled)   * Which of these are symptoms of uncontrolled diabetes? (feeling very thirsty/ having lots of energy/ needing to go to the toilet a lot / putting on weight * Which of these can be damaged in uncontrolled diabetes (eyes/ ears/ lungs/ heart/ kidney/ feet) * Which of these foods have a lot of sugar in them? (fruit juice/ chocolate bars/ potatoes/ artificial sweeteners) * Which of these foods have a lot of fat in them? (butter/ brown sugar/ margarine/ takeaways) * Which of these put you at risk of getting diabetes? (Being overweight/ Being European/ Not doing exercise/ Having someone in your family with diabetes) * Which of these things can help you avoid diabetes (losing weight/ drinking alcohol/ eating fried food/ doing regular physical activity)   **Diabetes management (only if diagnosed with diabetes)**   * At what age were you first told you had diabetes? * What treatment are you currently taking?   - Have you been treated or suffered from any of the following conditions? Cataracts, retinopathy, laser therapy to the eyes, cataract surgery, kidney disease, dialysis, kidney transplant, heart disease, heart surgery, heart failure, stroke, nerve damage, poor circulation to the feet, food ulcer, lower limb amputation, impotence  - Have you developed blindness in either of your eyes  - What method do you mainly use for testing your own sugar level?  - How many times a month do you test for high sugar level in your blood?  - Over the past month, your blood tests have been mostly: <4mmol/L; 4-10mmol/L; 10-15mmol/L; 15-20mmol/L; >20mmol/L; cannot recall; not done  - approximately how often do you visit a general practitioner for your diabetes? 5+ times a year/ 3-4 times a year/ 1-2 times a year/ once every 2-3 years/ once every 5 years / never  - When did you last have your eyes checked (including photographed?)  - When did you last have your feet checked?  - Have you been to a hospital Diabetes clinical as an outpatient in the last 12 months?  - If you have diabetes, do you visit any of the following: Endocrinologist/ diabetes educator/ podiatrist/ dietician | Diabetes Knowledge and Managemen**t (n=21)**  **Which of these is true?**   * A person with diabetes will have it for the rest of her life 33.3% vs 28.6% * The body of a person with diabetes can handle sugar properly 19.0% vs 9.5% * Diabetes can be controlled 52.4% vs 80.9% * A person with diabetes has too much sugar in the blood 66.7% vs 38.1% * A person with diabetes can be harmed if the diabetes is not controlled 19.0% vs 9.5%   **Which of these are symptoms of uncontrolled diabetes? (n=6)**   * Feeling very thirsty 16.7% vs 50% * Needing to go to the toilet a lot 50% vs 33.3% * Putting on weight 33.3% vs 50%   **Which of these can be damaged in uncontrolled diabetes?**   * Eyes 16.7% vs 83.3% * Kidney 16.7% vs 100% * Lungs 16.7% vs 33.3% * Heart 100% vs 50%   **Which of these foods have a lot of sugar in them?** n=1, inconclusive  **Which of these have a lot of fat in them?** data inconclusive  **Which of these put you at risk of getting diabetes?** Data inconclusive  **Which of these things can help you avoid diabetes?** Data inconclusive  **Diabetes Management (n=1)**  -results not analysed due n=1 |
| ORGANISATIONAL SUSTAINABILITY | | | | | |  |
| *STAFFING & RESOURCING, INTERVENTION COST & DEMAND ON PARTICIPANTS* | | | | | |  |
| Participants feel adequately supported with available resources to participate | * Participants are not overwhelmed with what is required of their time and effort * Participants see the benefit of the intervention * Participants excited and invite friends and family to also be part of the intervention * Designers of the intervention ensure there is enough trained stuff and peer support facilitators to take on the intervention. * Those designing the intervention understand how much full time equivalent (FTE), resourcing cost and time required to develop the intervention | * Participants see the value to maintaining contact with team leader * Participants see value to spend time and money (if needed) to engage with the program * Team leaders see value in maintaining contact with PSFs and community activators | * Not enough volunteers * Other competing priorities * Geographical location may make it difficult for PSFs and team leaders to engage with participants * Other activities offering similar benefits and advocated by others in the community (e.g. Herbalife) | * PSFs to use team leaders as point of contact to ensure engagement from each team * Use a community activator to follow up peer support facilitators with training to help participants address knowledge gaps * Team leaders to follow up team members and encourage them to join in weekly sessions * PSFs to talk about benefits of the 12-week weight loss intervention vs other programs (e.g. not intensive, works with what they have to offer) | * % participants engaged in weekly activities * # volunteers / PSFs * # of returning volunteers /PSFs or % engaged for duration of the program * # community activators participating | * 12 sessions * median±IQR attendance = 25.0±5.0 persons per session * 2 PSFs trained and engaged full duration of intervention * 3 team leaders engaged for full duration of intervention * 1 CA engaged throughout intervention |
| Adequately trained community activators & motivated to lead and train others | * Attend training sessions * Able to train PSFs within timeframe required * Able to prioritise weight loss intervention (vs other competing activities with community activator job) | * Amble community activators/ PSFs and team leaders to support training required, intervention delivery & data collection * Value and benefit of the program can compensate for unpaid participation * Community activator, PSFs and team leaders all have the have critical skills needed (e.g. planning, leading and coordinating) to undertake training and deliver intervention * Community activators, PSFs and team leaders were motivated to | * Competing priorities (e.g. children, work, community/ family obligations) * Trainers (those training the PSFs and team leaders) are not available or do not have availabilities at the same time with those that are to be trained. * PSFs not feeling supported and adequately supported throughout their participation in the program * Team leaders lose motivation as weeks pass by. Might seem unable to keep team members interested 🡪 not losing weight 🡪 losing motivation (seeing others might win vs them losing)) | * Produce simplified training manual * Produce a cheat sheet for training of PSFs and team leaders * Use already trained community activators * Undertake a refresher course (vs a full day) training * Run ongoing sessions between community activators and PSFs * Build sense of leadership within PSFs and ownership for the program * Ensure the program has a specific timeframe for delivery (e.g. 12 weeks vs never-ending) * Ensure any incentives used are viable if offered to a larger group of people * Make sure it is communicated up front to members and team leaders * Encourage close working relationships with the team leaders * Cost-sharing with other parts in existing preventing diabetes program e.g. using 12-week WL program to connect with the community as part of PPDP training of new community activators * Use online forms for data collection * Lean on student volunteers for data collection * Minimise ongoing cost; undertake one off items e.g. design and develop toolkit adaptable for a bigger intervention (no extra costs involved) * Identify existing culturally appropriate material that can be replicated (e.g. NZ Heart Foundation recipes trialled and tested, economy of scale (i.e. more portions for larger families) | * Qualitative interviews with participants, team leaders and peer supporters | * Simplified training manual with cheat sheet produced (A4 and laminated) * Qualitative data reported in **Results** |
| Adequately trained peer supporters | * Community activators are able to train PSFs * PSFs to attend sessions needed for training * Adequate training prepared and undertaken | * Improvement in knowledge of participants (captured through survey) * Perception of participants captured through qualitative in-depth interviews and focus group(s) | * See participant knowledge above.   - Perceptions of participants reported in **Results** |
| Team leaders participate in the intervention & are motivated to keep teams going | * Team leaders understand what is required of them * Self-motivated and have time to dedicate to the | * Perception of participants captured through qualitative in-depth interviews and focus groups |  |
| Intervention financially viable (i.e. expenses covered)  Intervention costing is identified and considered within the context of the intervention and scaling | * Minimal funding available (from scholarship) can adequately supply costs needed | * Can find cost-sharing opportunities. * Can identify designers and minimise design cost * Can keep research cost to a minimum (HbA1c cartridges, weight scales, circumference measures etc) | * Other priorities with partners (e.g. community activators in local health districts require focus on immunization or COVID) * Other programs offering monetary incentives (e.g. other program competition or challenges awarding large sums of money at the end of the program) | * Availability of community activators and participation in the program * Number of data forms collected (from community participants) * Intervention costs (from project administration notes) | * 1 CA available and participated throughout intervention * 34 completed data forms from community participants * Total costing $1,609.19 (ongoing costs $604.89 vs non-ongoing $1,304.30) |
| TRANSLATIONAL SUSTAINABILITY | | | | | |  |
| *HEALTH MODELS, REPLICABILITY, TRANSLATION IN CONTEXT, SCALABILITY* | | | | | |  |
| Health model or theory is used to identify core components and strategies for intervention | * Systematic and methodical identifying of strategies based on an agreed health model and or theory | * Using a health model and theory allows for holistic consideration of all areas in intervention design, delivery and evaluation | * Not enough skills and experience within the design team to holistically consider all aspects * Limited resources (human and financial) to adequately support the intervention | * Use a systematic review and meta-analysis to review evidence base of lifestyle based interventions with consideration of cultural and sustainability aspects to identify a tool – the Cultural and Sustainability Assessment of Intervention (CSAI) tool to identify most appropriate components across all aspects of the intervention | * Theory of change table | * Completed at start, reviewed by authors, updated to report results |
| Considerations of replicability, translation into context and scalability is undertaken by those designing the intervention | * Scaling (i.e. if the intervention were to be replicated/ translated and or scaled to a population-based intervention) across the full intervention process including governance & support structure of the intervention | * Those designing the intervention have the skill and experience to identify all parts relating to replicability and scalability of an intervention | * Not fully identifying components that will require scaling (i.e. having a simplistic view of scaling) and some components may not be scalable/ limited to certain contexts e.g. Samoan vs other Pasifika populations | * Ensure all intervention strategies and intervention support structures and monitoring and evaluation processes fully consider which components are scalable vs which are not | * Cost | * Total cost for intervention $1,609.19 (ongoing costs $604.89 vs non-ongoing $1,304.30) |