**Supplementary material 1:** Stakeholder contribution to the theory-building workshops and telephone interviews, and cumulative contribution of individual stakeholders to the co-design and knowledge mobilisation workshops.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Theory-building workshops and stakeholder interviews | | | |  |  | Co-design and knowledge mobilisation | | | |
| Stakeholder representation | Theory-building workshop 1  (N = 10) | Theory-building workshop  2  (N = 13) | Telephone interview (N = 10) |  | **Stakeholder representation** | Co-design workshop 1 (N = 9) | Co-design workshop 2 (N = 14) | Co-design workshop 3 (N = 11) | Knowledge mobilisation workshop (N = 12) |
| Public contributor, long-term condition | n = 5\* | n = 6\*\* | n = 3 |  | **Public contributor 1, long-term condition** | ✓ | ✓ | ✓ | ✓ |
| GP | n = 1 | n = 1\* | n = 3 |  | **Public contributor 2, long-term condition** | ✓ | ✓ | - | ✓ |
| Leisure centre manager | n = 1 | - | - |  | **Public contributor 3, long-term condition** | ✓ | - | - | - |
| Sport and outdoor recreation division of local council | n = 1 | - | - |  | **Public contributor 4, long-term condition** | - | ✓ | ✓ | ✓ |
| Health and social care public representation group | n = 1 | - | - |  | **Public contributor 5, long-term condition#** | - | ✓ | ✓ | ✓ |
| Practice manager | - | n = 1 | - |  | **Public contributor 6, long-term condition** | - | ✓ | - | - |
| Researcher, social care | - | n = 1 | - |  | **Public contributor 7, long-term condition** | - | ✓ | - | - |
| Occupational therapist | - | n = 1 | - |  | **General Practitioner** | - | ✓ | ✓ | ✓ |
| Third sector organisation | n = 1\* | n = 1 | - |  | **Practice nurse** | - | ✓ | - | - |
| Physiotherapist | - | n = 1 | - |  | **Practice manager** | - | ✓ | - | - |
| Engagement officer | - | n = 1 | - |  | **Physician associate** | ✓ | - | ✓ | ✓ |
| Primary care practice nurse | - | - | n = 2 |  | **Physiotherapist** | - | ✓ | - | - |
| Primary care healthcare assistant | - | - | n = 1 |  | **Primary care cluster lead, coordinator of voluntary services** | ✓ | ✓ | ✓ | - |
| Researcher, pedagogy | - | - | n = 1\*\*\* |  | **Exercise referral scheme co-ordinator** | ✓ | ✓ | ✓ | - |
|  |  |  |  |  | **Life coach** | - | ✓ | - | - |
|  |  |  |  |  | **Researcher, pedagogy\*** | - | - | ✓ | ✓ |
|  |  |  |  |  | **Researcher, physical activity promotion** | - | - | - | ✓ |
|  |  |  |  |  | **Researcher, clinical exercise physiology#** | - | ✓ | - | - |
|  |  |  |  |  | **Researcher, medical sociology#** | - | - | ✓ | ✓ |
|  |  |  |  |  | **Researcher, health psychology#** | ✓ | - | ✓ | ✓ |
|  |  |  |  |  | **Researcher, nursing, rehabilitation and implementation#** | ✓ | - | - | - |
|  |  |  |  |  | **Researcher, sports physiology#** | ✓ | - | ✓ | ✓ |
|  |  |  |  |  | **Researcher, information science#** | - | - | - | ✓ |
|  |  |  |  |  |  |  |  | **5 ‘Dragon’s’/independent advisors included representation from:**   * **2 public contributors with long-term conditions** * **General practice** * **Public Health** * **Physical activity promotion research** | **4 ‘Dragon’s’/independent advisors included representation from organisations and professional bodies relevant to:**   * **General practice** * **Public health** * **Nursing** * **Physiotherapy** |

\* = also took part in an individual interview (n = 1 public contributor, n = 1 representative from relevant third sector organisation, who also had a long-term condition, n = 1 GP, n = 1 researcher). \*\* = also took part in co-design workshops 2 and 3 and the knowledge mobilisation workshop (n = 1). \*\*\* = also took part in a co-design workshop 3 and the knowledge mobilisation workshop. # = member of research team. Co-Chief Investigators RJ-L (health services researcher) and NW (academic GP) contributed as stakeholders to all study workshops.