Multimedia Appendix 1: Table of frameworks.

| Framework | Authors | Publicati on year | Biblio | Creator' s Country | Organization having funded the creator | Organisatio n having funded the creation of the framework itself | Focus | Target group | Design process (Linear, Iterative, Evolutive , Parallel, Increme ntal | Early Implicat ion of end users in the process? | Systema tic Implicat ion of end users in the process? | Categoriza tion of the framework s: P-MCES | Categorization of the paradigms |
|------------------------------|-----------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------|
| Waterfall model | Royce | 1970 | Royce WW. Managing the development of large software systems. In: proceedings of IEEE WESCON. Los Angeles; 1970. p. 328–338 | USA | Lockheed Software Technology Center | None | Non-Health (software development) | Not specified (software designers / development managers) | Linear | No | No | Р | Engineering paradigm |
| PRECEDE- PROCEED model | Green | 1974 | Green LW. Toward cost-benefit evaluations of health education: some concepts, methods and examples. Health Education Monograph 1974;2(Suppl 2):34-64. | USA | School of Hygiene and Public Health, John Hopkins University | None | Health (Health promotion programs) | Not specified (searchers, policy makers, health programs planners) | Iterative, Evolutive , Parallel | No | No | MCES | Biomedical model |
| Prototyping model | Floyd | 1984 | Floyd C. A systematic look at prototyping, in: Budde, R., Kuhlenkamp, K., Mathiassen, L. and Zullighoven, H. Approaches to Prototyping, Springer-Verlag: Heidelberg, 1- 17.1984. | Germany | Institut d'informatique appliquée | None | Non-Health (engineering) | Software designers / development managers | Iterative, Evolutive | No | No | P-S | Engineering paradigm |
| Greenwald and Cullen's | Greenwal d & | 1985 | Greenwald P, Cullen JW. The new | USA | Division of Cancer | None | Health (Behavior | Not specified (searchers, health | Iterative | No | No | MCES | Biomedical model |

| 5-phase cancer control model | Cullen | | emphasis in cancer control. Journal of the National Cancer Institute. 1985;74(3):543– 551. 1985. | | Prevention and Control, Cancer Institute, NIH | | change, cancer) | policy makers) | | | | | |
|------------------------------------------------|------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------|------------------------------------------|-----------------------------------------|------|-------------------------|
| Flay's 8-stage health promotion model | Flay | 1986 | Flay BR. Efficacy and effectiveness trials (and other phases of research) in the development of health promotion programs. Prev Med. ;15(5):451 74. 1986. | USA | Health Bahavior Research Institute, University of Southern California | NIH | Health (Health promotion programs) | Searchers, health policy makers | Iterative | No | No | MCES | Biomedical model |
| V life cycle model | Rook | 1986 | Rook P. Controlling software projects. Software Engineering Journal - Controlling software projects, vo.1, no.1, pp.7-16, 1986. | UK | GEC Software | None | Non-Health (software development) | Software designers / development managers | Linear | Y (evaluati on) | Y (evaluati on only) | P-S | Engineering paradigm |
| Spiral life cycle model | Boehm | 1988 | Boehm BW. A spiral model of software development and enhancement. Computer. mai 1988;21(5):61-72 | USA | TRW Defense Systems Group | None | Non-Health (software development) | Not specified (software designers / development managers) | Iterative, Evolutive | No | No | P-S | Engineering paradigm |
| Star life cycle model | Harston & Dix | 1989 | Harston HR, Hix D. | USA | Department of Cumputer Science, Virginia Polytechnic Institute and State University | National Science Foundation, IBM Federal Systems Division, the Software Productivity Consortium and the Virginia Center for Innovative Technology | Non-Health (human- computer interface) | Software designers / development managers | Iterative, Evolutive | Y (analysis and evaluatio n) | Y (analysis and evaluatio n | P-S | Engineering paradigm |
| Rapid application development | Martin | 1991 | Martin J. Rapid Application Development. Macmillan. 1991 | UK | IBM | None | Non-Health (software development) | Designers, software development managers | Iterative, Evolutive , Parallel | Y (analysis and evaluatio | Y (analysis and evaluatio | P-S | Engineering |

| | | | (LIVRE) | | | | Ι | | | n) | n) | | |
|----------------------------------------|------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|------|---------------------------------------------------|
| NIDA's stage model | Onken et al. | 1997 | Onken LS, Blaine JD, Battjes RJ. Behavioral therapy research: A conceptualization of a process. In:Henggeler SW, Santos AB,editors. Innovative approaches for difficult-to-treat populations. Washington,D.C.: American Psychiatric Press, Inc. p.477-85. 1997. | USA | National Institute on Drug Abuse (NIH) | NIH | Health (Behavior change,drug abuse) | Not specified (researchers, health policy makers) | Iterative, Evolutive | No | No | MCES | Biomedical model, Psychological paradigm |
| Intervention mapping | Bartholo mew et al. | 1998 | Bartholomew LK, Parcel GS, Kok G. Intervention mapping: a process for developing theory- and evidence-based health education programs. Health Educ Behav. oct 1998;25(5):545-63. | USA | Center for Health Promotion Research and Development, University of Tewas Health Science Center | None | Health (health promotion programs) | Health education program planners | Iterative, Evolutive | No | No | MCES | Behavioral theory |
| Usability Engineering Life Cycle | Mayhew | 1999 | Mayhew D. The usability engineering lifecycle: a practitioner's handbook for user interface design (LIVRE) | USA | Northeastern university | None | Non-Health (human- computer interface) | Designers, software development managers | Iterative, Evolutive | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-S | Engineering paradigm |
| Agile software management | Beck et al. | 2001 | Beck K, Beedle M, Bennekum A, Cockburn A, Cunningham W, Fowler M, Grenning J, Highsmith J, Hunt A, Jeffries R, Kern J, Marick B, Martin R, Mellor S, Schwaber K, Sutherland J, Thomas D. | USA | Chrysler/Face book | None | Non-Health (software development) | Not specified (software designers / development managers) | Iterative, Evolutive , Parallel | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-S | Engineering paradigm |

| IT implementatio n framework | Kukafka et al. | 2003 | Manifesto for Agile software development. www.agilemanifesto .org. 2001 Kukafka R, Johnson SB, Linfante A, Allegrante JP. Grounding a new information technology implementation framework in behavioral science: a systematic analysis of the literature on IT use. | USA | Department of sociomedical sciences, Joseph Mailman School of Public Heamth, Columbia University | None | Health (Behavior change, ehealth) | Behavior change intervention designers using information technologies | Iterative, Evolutive , Parallel | No | No | P-MCES | Biomedical model, Psychological paradigm, Engineering paradigm |
|--------------------------------------------------------------------|-------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|--------|-------------------------------------------------------------------------------|
| Multiphase Optimization STrategy (MOST) | Collins et al. | 2005 | J Biomed Inform. 2003;36(3):218-27. Collins LM, Murphy SA, Nair VN, Strecher VJ. A strategy for optimizing and evaluating behavioral interventions. Annals of Behavioral Medicine. 2005;30(1):65-73. | UK | Methodology Center, Department of Human Development and Family Studies, Pennsylvania State University | NIH, National Science Foundation | Health (Behavior change) | Intervention researchers, intervention targets, health care providers and other stakeholders | Iterative | No | No | МСЕ | Biomedical model, Psychological paradigm, Engineering paradigm |
| "Framework for evaluating emergent eHealth ressources" | Pagliari | 2007 | Pagliari C. Design and evaluation in eHealth: challenges and implications for an interdisciplinary field. J Med Internet Res. 2007;9(2):e15. | UK | EHealth Interdisciplina ry Research Rroup, University of Edinburgh | None | Health (Behavior change, eHealth) | Software developers and health services researchers | Iterative, Evolutive | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Biomedical model, Engineering paradigm |
| CONSORT Statement for Nonpharmacol ogic Treaments | Boutron et al. | 2008 | Boutron I, Moher D, Altman DG, Schulz KF, Ravaud P. Methods and processes of the CONSORT Group: example of an extension for trials assessing nonpharmacologic | France | Department of Biostatistical Epidemiology and Clinical Research, INSERM U738, Université Paris 7 Denis Diderot/Bichat | Département de la Recherche Clinique et du Développem ent, Assistance Publique des Hôpitaux de | Health (Nonpharmacol ogic treatments) | Researchers (Journal authors), journal editors | Iterative | No | No | MCES | Biomedical model |

| | | | treatments. Annals of Internal Medicine. 2008;148(4):W-60. | | -Claude Bernard Hospital | Paris; Department of Biostatistical Epidemiolog y and Clinical Research, INSERM U738, Université Paris 7 Denis Diderot/Bich at-Claude Bernard Hospital | | | | | | | |
|-----------------------------------------------------|--------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|------|---------------------------------------------------|
| Iterative and incremental model | Cockburn | 2008 | Cockburn A. Using both incremental and iterative developement STSC Cross Talk, 21(5),27-30. 2008 | USA | Companies (IBM) | None | Non-Health (Software development) | Development teams, development managers | Iterative, Evolutive , Parallel | No | No | P-S | Engineering paradigm |
| MRC Complex intervention | Craig et al. | 2008 | Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., Petticrew, M. Developing and evaluating complex interventions: the new Medical Research Council guidance. British Medical Journal. 2008;337, a1655 | UK | Medical Research Council Population Health Sciences Research Network | Medical Research Council Health Services and Public Health Research Board | Health (complex interventions) | Researchers, research funders, policy makers, practitioners and other commissioners and users of evaluation | Iterative, Evolutive | No | No | MCES | Biomedical model, Psychological paradigm |
| "EHealth interventions evaluation process" | Catwell & Sheikh | 2009 | Catwell L, Sheikh A. Evaluating eHealth interventions: the need for continuous systemic evaluation. PLoS Med. 2009;6(8):e1000126 | UK | Center for Population Health Sciences, University of Edinburgh | NHS Connecting for Health Evaluation Programme | Health (Behavior change, ehealth) | Information Communication Technology developers | Iterative, Evolutive | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-S | Engineering paradigm |
| Center for eHealth Research (CeHRes) | Van Gemert- Pijnen et <i>al</i> . | 2011 | van Gemert-Pijnen JE, Nijland N, van Limburg M, Ossebaard HC, | Netherla nds | Department of Psychology, Health and Technology/C | None | Health (Behavior change, eHealth) | ehealth developers | Iterative, Evolutive | Y (analysis and evaluatio | Y (analysis and evaluatio | P-S | Engineering paradigm |

| roadmap for the developement of eHealth technologies | | | Kelders SM, Eysenbach G, et al. A Holistic Framework to Improve the Uptake and Impact of eHealth Technologies. Journal of Medical Internet Research. 13 déc 2011;13(4):e111. | | enter for eHealth Research and Disease Management, Faculty of Behavioural Sciences, University of Twente | | | | | n) | n) | | |
|------------------------------------------------------------------|----------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------|------------------------------------------------------|-------------------------|----|----|--------|---------------------------|
| The Behavior Change Wheel | Michie et al. | 2011 | Michie S, van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. Implement Sci. 2011;6:42. | UK | Research Department of Clinical, Educational, and Health Psychology, University College London. | Cancer Research UK | Health (Behavior change) | Behavior change intervention designers | Iterative, Evolutive | No | No | М | Psychological paradigm |
| CONSORT ehealth | Eysenbac h et al. | 2011 | Eysenbach G, Group C-E. CONSORT- EHEALTH: improving and standardizing evaluation reports of Web-based and mobile health interventions. J Med Internet Res. 2011;13(4):e126. Eysenbach G. CONSORT- EHEALTH: implementation of a checklist for authors and editors to improve reporting of web-based and mobile randomized controlled trials. Stud Health Technol Inform. 2013;192:657-61. | Canada | University Health Network, Center for Global eHEalth Innovation & Techna Institute, Toronto/ Institute for Health Policy, Management, and Evaluation, University of Toronto/ JMIR Publications | None | Health (Behavior change, ehealth) | Researchers (Journal authors), journal editors | Linear, Iterative | No | No | P-MCES | Biomedical model |

| mHealth Development and Evaluation Framework | Whittaker et al. | 2012 | Whittaker R, Merry S, Dorey E, Maddison R. A Development and evaluation process for mHealth interventions: Examples from New Zealand. J Health Com 2012;17:11-21. | New Zealand | Clinical Trials Research Unit, University of Auckland | the Health Research Council of New Zealand, Oakley Mental Health Foundation, University of Auckland, Digital Strategy Community Partnership Fund, Vodafone New Zealand Ltd, Auckland UniServices Ltd, National Heart Foundation, Cancer Society of New | Health (Behavior change,mHealt h) | Not specified (mHealth intervention developers and/or evaluators) | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Biomedical model,Psycholo gical paradigm, Engineering paradigm |
|--------------------------------------------------------------------------------------------------------------------------|----------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------|-----------|------------------------------------------|------------------------------------------|--------|----------------------------------------------------------------------------|
| | | | | | | Zealand, Alcatel. | | | | | | | |
| Explore Values, Operationalize and Learn, and eValuate Efficacy (EVOLVE) mixed- methods model | | 2013 | Peterson JC, Czajkowski S, Charlson ME, Link AR, Wells MT, Isen AM, et al. Translating basic behavioral and social science research to clinical application: The EVOLVE mixed methods approach. Journal of Consulting and Clinical Psychology. 2013;81(2):217-30. | USA | Division of Clinical Epidemiology and Evaluative Sciences Research, Department of Medicine, and Center for Integrative Medicine, Weill Cornell Medical College | NIH | Health (Behavior change) | Researchers | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | МСЕ | Biomedical model, Psychological paradigm |
| Development process of | Riiser <i>et</i> al. | 2013 | Riiser K, Løndal K, Ommundsen Y, | Norway | Oslo and Akershus | Norwegian ExtraFounda | Health (internet | Researchers, designers, | Iterative | Y (analysis | Y (analysis | P-MC | Psychological paradigm, |

| Young & Active | | | Sundar T, Helseth S. Development and Usability Testing of an Internet Intervention to Increase Physical Activity in Overweight Adolescents. JMIR Res Protoc 2013;2(1):e7 | | University College of Applied Sciences, Oslo | tion for Health and Rehabilitatio n | intervention, increase physical activity, overweight adolescents) | developers, and representatives from the target group | | and evaluatio n) | and evaluatio n) | | Engineering paradigm |
|-----------------------------------------------|--------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|--------|-------------------------------------------------------------------------------|
| It's LiFe! User-centered design process | Van der Weegen <i>et</i> <i>al</i> . | 2013 | Van der Weegen S, Verwey R, Spreeuwenberg M, Tange H, van der Weijden T, de Witte L. The development of a mobile monitoring and feedback tool to stimulate physical activity of people with a chronic disease in primary care: a user-centered design. JMIR Mhealth Uhealth. 2013;1(2):e8. | Netherla nds | CAPHRI School for Public Health and Primary Care, Departement of Health Services Research, Maastrich University | Netherlands Organization for Health Research and Developmen t | Health (Behavior change, chonic disease, ehealth) | Researchers | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Biomedical model, Psychological paradigm, Engineering paradigm |
| DoTTI Development Framework | Smits et al. | 2014 | Smits R, Bryant J, Sanson-Fisher R, Tzelepis F, Henskens F, Paul C, et al. Tailored and integrated Web- based tools for improving psychosocial outcomes of cancer patients: the DoTTI development framework. J Med Internet Res. 2014;16(3):e76. | Australia | Priority Research Centre for Health Behaviour, University of Newcastle & Hunter Medical Research Institute, Callaghan | New South Wales Cancer Institute Translational Health Services, Cancer Council NSW, Australian Research Council | Health (Behavior change, ehealth, cancer) | Stakeholders (including researchers, clinicians, consumers, and programmers) | Iterative, Evolutive , Parallel | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Biomedical model, Psychological paradigm, Engineering paradigm |
| NIH Stage model | Onken et al. | 2014 | Onken LS, Carroll KM, Shoham V, Cuthbert BN, Riddle M. Reenvisioning Clinical Science: | USA | National Institute on Drug Abuse (NIH) | NIH | Health (Clinical science) | Researchers and students to learn how to conduct research in every domain of clinical | Iterative, Evolutive | No | No | MCES | Biomedical model, Psychological paradigm |

| | | | Unifying the | | | | | science | | | | | |
|-------------------------------------|-----------------------|------|---------------------------------------------------------------------------|-----|--------------------------------------------------------------|--------------------------|----------------------------------|-------------------------------------|--------------------------|-----------------|-----------------|------|--------------------------------------|
| | | | Discipline to Improve the Public | | | | | | | | | | |
| | | | Health. Clin Psychol Sci. 2014;2(1):22- | | | | | | | | | | |
| Behavioral | Mohr et | 2014 | 34. Mohr DC, Schueller | USA | Center for | NIH | Health | Designers, | Iterative | No | No | P-M | Psychological |
| Intervention Technology Model | al. | | SM, Montague E, Burns MN, Rashidi P. The Behavioral Intervention | | Behavioral Intervention Technologies, Department of | | (Behavior change, ehealth) | software development managers | | | | | paradigm, Engineering paradigm |
| | | | Technology Model: An Integrated Conceptual and | | Preventive Medicine, Northwestern | | | | | | | | |
| | | | Technological Framework for | | University | | | | | | | | |
| | | | eHealth and mHealth Interventions. | | | | | | | | | | |
| | | | Journal of Medical | | | | | | | | | | |
| | | | Internet Research. 5 juin 2014;16(6):e146. | | | | | | | | | | |
| 5-Step Content | Kassam- Adams et | 2015 | Kassam-Adams N, Marsac ML, Kohser | USA | University of Pennsylvania, | Eunice Kennedy | Health (eHealth) | Researchers, Developers, users | Iterative, Evolutive | Y (analysis | Y (analysis | P-MC | Psychological paradigm, |
| Validity | al. | | KL, Kenardy JA, | | Philadelphia | Schriver | (епеаш) | Developers, users | , Parallel | and | and | | Engineering |
| Process | | | March S, Winston FK. A New Method | | | National Institute of | | | | evaluatio n) | evaluatio n) | | paradigm |
| | | | for Assessing | | | Child Health | | | | , | / | | |
| | | | Content Validity in Model-Based | | | and Human Developmen | | | | | | | |
| | | | Creation and | | | t | | | | | | | |
| | | | Iteration of eHealth | | | | | | | | | | |
| | | | Interventions. J Med Internet Res | | | | | | | | | | |
| | | | 2015;17(4):e95 | | | | | | | | | | |
| Steps for developing a | Abroms <i>et al</i> . | 2015 | Abroms LC, Whittaker R, Free | USA | The Milken Institute | None | Health (Behavior | Designers, Researchers | Interative, Evolutive | Y (analysis | Y (analysis | P-MC | Psychological paradigm, |
| text messaging | | | C, Mendel Van | | School of | | change, text- | Treseareners | D voider vo | and | and | | Engineering |
| program | | | Alstyne J, | | Public Health, | | messaging | | | evaluatio | evaluatio | | paradigm |
| | | | Schindler-Ruwisch JM. Developing and | | The George Washington | | program) | | | n) | n) | | |
| | | | Pretesting a Text | | University, | | | | | | | | |
| | | | Messaging Program | | Washington, | | | | | | | | |
| | | | for Health Behavior Change: | | DC; National Institute for | | | | | | | | |
| | | | Recommended | | Health | | | | | | | | |
| | | | Steps. JMIR | | Innovation, | | | | | | | | |

| | | | Mhealth Uhealth. 2015;3(4):e107. | | The University of Auckland; Clinical Trials Research Unit, London School of Hygiene and Tropical Medicine, London | | | | | | | | |
|-------------------------------|-----------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------|-------------------------|------------------------------------------|------------------------------------------|--------|-------------------------------------------------------------------------------|
| Person-based approach | Yardley et al. | 2015 | Yardley L, Morrison L, Bradbury K, Muller I. The Person-Based Approach to Intervention Development: Application to Digital Health- Related Behavior Change Interventions. Journal of Medical Internet Research. 30 janv 2015;17(1):e30. | UK | Department of Psychology, Faculty of Social and Human Sciences, University of Southampton | Engineering and Physical Sciences Research Council | Health (Behavior change, ehealth) | Behavior change intervention designers | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Biomedical model, Psychological paradigm, Engineering paradigm |
| ORBIT Model | Czajkows ki et al. | 2015 | Czajkowski, S.M., Powell, L.H., Adler, N., Naar-King, S., Reynolds, K.D., Hunter, C.M., Laraia, B., Olster, D.H., Perna, F.M., Peterson, J.C., Epel, E., Boyington, J.E., Charlson, M.E. (2015). From Ideas to Efficacy: The ORBIT model for developing behavioral treatments for chronic diseases. Health Psychology, 10, 971-982. | USA | National Heart, Lung, and Blood Institute,NIH | NIH | Health (Behavior change, chronic diseases) | Behavior change intervention designers | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | MCES | Biomedical model, Psychological paradigm, Engineering paradigm |
| Pragmatic Framework for | Nahum- Shani et <i>al</i> . | 2015 | Nahum-Shani I, Hekler EB, Spruijt- Metz D. Building | USA | Institute for Social Research, | NIH | Health (Behavior change, JITAI) | Behavior change intervention designers (JITAI) | Iterative, Evolutive | No | No | M | Psychological paradigm |

| Developing JITAIs | | | health behavior models to guide the development of just- in-time adaptive interventions: A pragmatic framework. Health Psychology. 2015; 34(Suppl):12 09-19. | | University of Michigan | | | | | | | | |
|----------------------------------------------------------------------|---------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|--------|-------------------------------------------------------------------------------|
| Telehealth in Chronic disease (TECH) conceptual model | Salisbury et al. | 2015 | Salisbury C, Thomas C, O'Cathain A, Rogers A, Pope C, Yardley L, et al. Telehealth in Chronic disease: mixed-methods study to develop the TECH conceptual model for intervention design and evaluation. BMJ open. 2015;5(2):e006448. | UK | University of Bristol, Centre for Academic Primary Care, School of Social and Community Medicine | National Institute for Health Research (NIHR) | Health (Behavior change, ehealth) | Designers and evaluators of telehealth programmes | Iterative, Evolutive , Parallel | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Biomedical model, Psychological paradigm, Engineering paradigm |
| NIATx Model | Gustafson et al. | 2016 | Gustafson DH Jr, Maus A, Judkins J, Dinauer S, Isham A, Johnson R, Landucci G, Atwood AK. Using the NIATx Model to Implement User- Centered Design of Technology for Older Adults. JMIR Hum Factors 2016;3(1):e2 | USA | Center for Health Enhancement Systems Studies, Department of Industrial and Systems Engineering, University of Wisconsin - Madison | Agency for Healthcare Research and Quality, Epic Systems Corporation | Health (Behavior change, ehealth, older adults) | Designer, developers | Iterative, Evolutive , Parallel | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-M | Psychological paradigm, Engineering paradigm |
| Integrate, Design, Assess, and Share (IDEAS) Framework | Mummah et al. | 2016 | Mummah SA, Robinson TN, King AC, Gardner CD, Sutton S. IDEAS (Integrate, Design, Assess, and Share): A Framework and Toolkit of Strategies for the Development of More Effective | USA | Stanford Prevention Research Center, Department of Medicine, Stanford University School of Medicine and | NIH, Nutrition Science Initiative and Stanford Child Health Research Institute | Health (Behavior change, ehealth) | Investigators and industry partners | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Biomedical model, Psychological paradigm, Engineering paradigm |

| | | | Digital Interventions to Change Health Behavior. J Med Internet Res. 16 déc 2016;18(12):e317. | | Behavioural Science Group, Institute of Public Health, University of Cambridge | | | | | | | | |
|--------------------------------------------------------------------------|-------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|-------------------------|------------------------------------------|------------------------------------------|-------|-------------------------------------------------------------------------------|
| Chronic Disease mHealth App Intervention Design Framework | Wilhide III et <i>al</i> . | 2016 | Wilhide III CC, Peeples MM, Anthony Kouyaté RC. Evidence-Based mHealth Chronic Disease Mobile App Intervention Design: Development of a Framework. JMIR Research Protocols. 16 févr 2016;5(1):e25. | USA | WellDoc Inc | None | Health (Behavior change, mHealth apps, chronic diseases) | Researchers, practitioners, health care policy | Iterative, Evolutive | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-M | Psychological paradigm, Engineering paradigm |
| Three-Phase Human- Centered Design Methodology | Harte et al. | 2017 | Harte R, Glynn L, Rodriguez-Molinero A, Baker PM, Scharf T, Quinlan LR, et al. A Human- Centered Design Methodology to Enhance the Usability, Human Factors, and User Experience of Connected Health Systems: A Three- Phase Methodology. JMIR Hum Factors. 2017;4(1):e8. | Ireland | National University of Ireland Galway | EU's Seventh Framework Programme for Research | Non-Health (engineering) | Designers, researchers, policy makers, users | Iterative Evolutive | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-S | Engineering paradigm |
| DREAM- GLOBAL Framework | Maar et al. | 2017 | Maar MA, Yeates K, Perkins N, Boesch L, Hua- Stewart D, Liu P, et al. A Framework for the Study of Complex mHealth Interventions in Diverse Cultural Settings. JMIR Mhealth Uhealth. 2017;5(4):e47. | Canada | Laurentian University | The Canadian Institutes of Health Research, Grand Challenges Canada, and the Global Alliance for Chronic Diseases | Health (mobile health interventions) | Researchers, designers, policy makers, stakeholders | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCE | Biomedical model, Psychological paradigm, Engineering paradigm |

| Processes and recommendati ons for creating mHealth apps for low- income populations | Stephan et al. | 2017 | Stephan LS, Dytz Almeida E, Guimaraes RB, Ley AG, Mathias RG, Assis MV, et al. Processes and Recommendations for Creating mHealth Apps for Low-Income Populations. JMIR Mhealth Uhealth. 2017;5(4):e41. | Brazil | Fundação Universitária de Cardiologia, Porto Alegre | None | Health (mhealth apps for low-income populations) | Designers, developers, researchers | Iterative, Evolutive | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Psychological paradigm, Engineering paradigm |
|-----------------------------------------------------------------------------------------------------------|---------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------|---------------------------------------------|---------------------------------------|------------------------------------------|------------------------------------------|--------|-------------------------------------------------------------------------------|
| ACTS model | Mohr et al. | 2017 | Mohr DC, Lyon AR, Lattie EG, Reddy M, Schueller SM. Accelerating Digital Mental Health Research From Early Design and Creation to Successful Implementation and Sustainment. J Med Internet Res. 2017;19(5):e153. | USA | Northwestern University, Chicago | US National Institute of Mental Health | Health (mental health, ehealth) | Researchers, stakeholders | Iterative, Evolutive , Parallel | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCES | Psychological paradigm, Engineering paradigm |
| User-centered design process | Vilardaga et al. | 2018 | Vilardaga R, Rizo J, Zeng E, Kientz JA, Ries R, Otis C, et al. User-Centered Design of Learn to Quit, a Smoking Cessation Smartphone App for People With Serious Mental Illness. JMIR Serious Games. 2018;6(1):e2. | USA | Duke University, Durham | National Institute of Drug Abuse | Health (smoking cessation, mental health) | Researchers,devel opers, stakeholders | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MC | Psychological paradigm, Engineering paradigm |
| 8-Step Scoping Framework | Davidson et al. | 2019 | Davidson R, Randhawa G, Cash S. Identification of Complex Health Interventions Suitable for Evaluation: Development and Validation of the 8- | UK | University of Bedfordshire, Luton | University of Bedfordshire , Luton | Health (complex interventions) | Researchers, clinicians, and users | Iterative | Y (analysis and evaluatio n) | Y (analysis and evaluatio n) | P-MCE | Biomedical model, Psychological paradigm, Engineering paradigm |

| | | | Step Scoping Framework. JMIR Res Protoc. 2019;8(3):e10075. | | | | | | | | | |
|-------|----------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------|---------------------------------------------|-----------------------------------------------------------|-------------------------|------------------------------------------|-----|--------|-------------------------------------------------------------------------------|
| TUDER | Wang et al. | 2019 | Wang Y, Fadhil A, Lange JP, Reiterer H. Integrating Taxonomies Into Theory-Based Digital Health Interventions for Behavior Change: A Holistic Framework. JMIR Res Protoc 2019;8(1):e8055 | University of Konstanz, Konstanz | SMARTAC T | Health (digital health interventions) | Researchers, clinicians, government stakeholders | Iterative, Evolutive | Y (analysis and evaluatio n) | and | P-MCES | Biomedical model, Psychological paradigm, Engineering paradigm |