

Multimedia Appendix 1 Overview over behavior change theories, frameworks, models and techniques used in the included PT of health.

Figure 1. The frequencies of the adopted theories. EMA: Ecological Momentary Assessment; MI: Motivational Interviewing theory; TTM: Transtheoretical Model; I.B.C.M: Integrated Behavior change model; TPB: Theory of Planned behavior; SDT: self-determination Theory; SCT: Social cognitive theory; FRAMES: Feedback, Responsibility, Advice, Menu of options, Empathy, and Self-efficacy; GST: Goal-setting Theory; HF: Habit Formation; TT: Temporal Tensions; NRT: Narrative transportation theory; CBT: Cognitive behavioral theory; HBM: Health Belief Model; SRT: Self-Determination Theory; WMT: Wellness Motivation theory; TRA: Theory of reasoned action; KAB: Knowledge-attitude behavior.

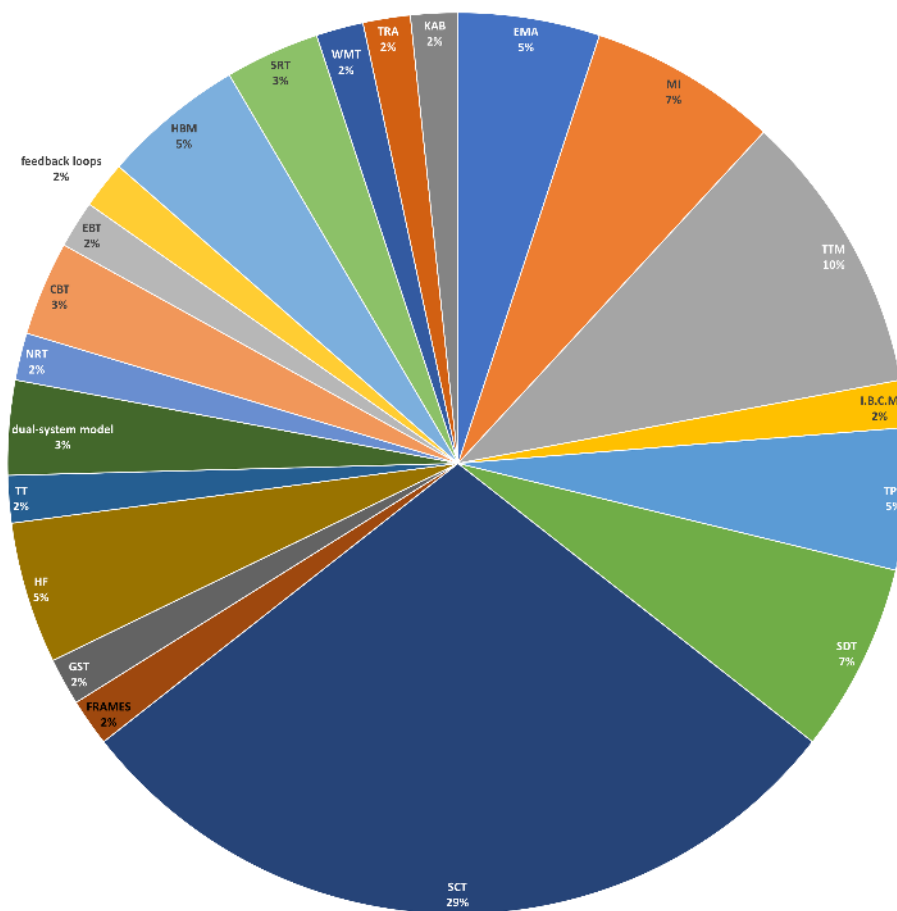


Figure 2. The frequencies of the development framework/models adopted. PSD: persuasive system design; BCW: Behavior Change Wheel; BITF: Behavior Intervention technology framework; IM: Intervention mapping; TDF: Theoretical Domains framework; STAR: Spiral Technology Action Research (STAR) model; UCD: User centered design; RE-AIM Reach, Effectiveness or efficacy, Adoption, Implementation, Maintenance; IDEAS: Integrate, Design, Assess, and Share; FBM: Fogg behavior model.

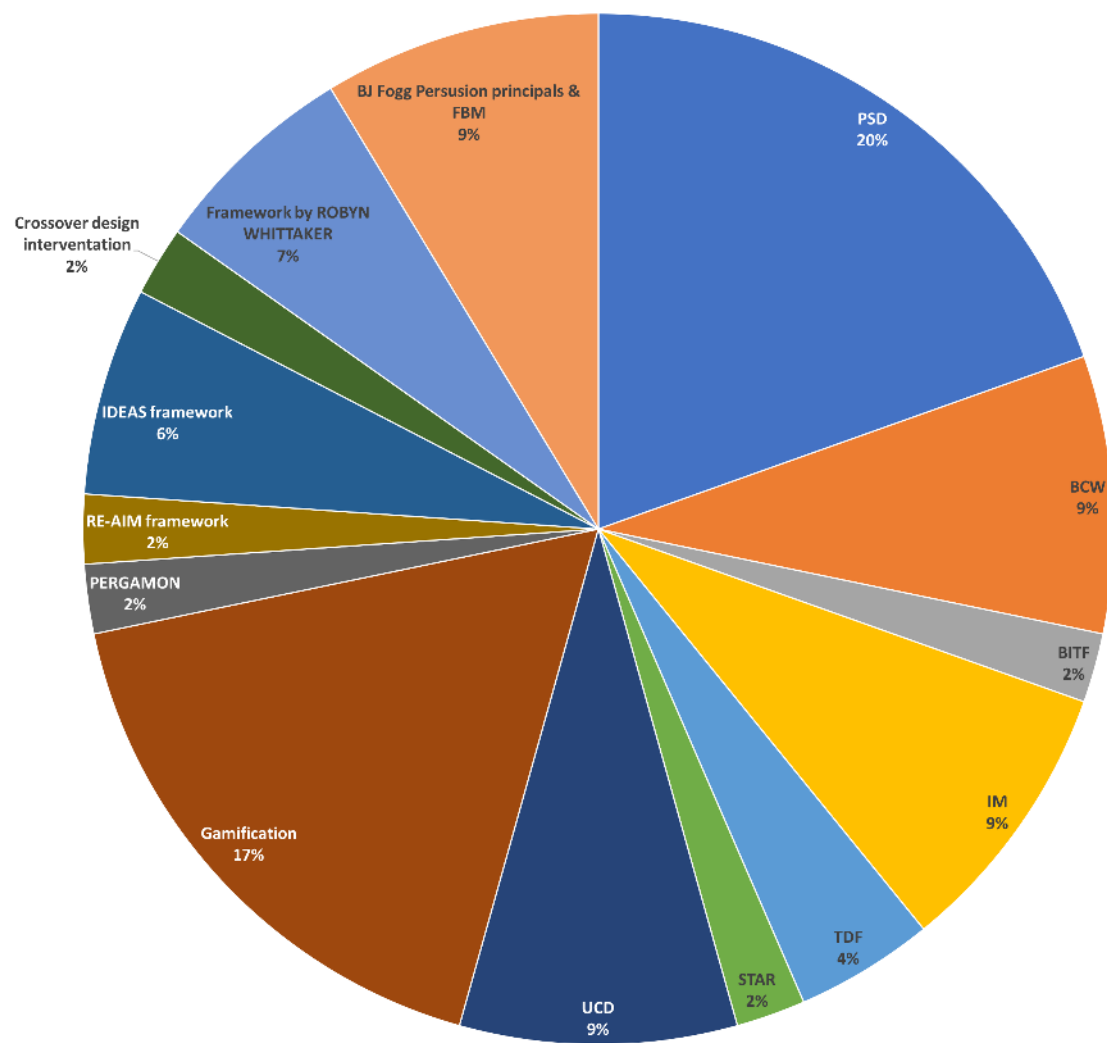


Table 1. The frequencies and references to all the adopted technologies.

Technology	Frequency	Reference
Mobile app	55.5% (62/118)	[1][2][3][4][5][6][7][8][9][10][11][12][13][14][15][16][17][18][19][20][21][22][23][24][25][26][27][28][29][30][31][32][33][34][35][36][37][38][39][40][41][42][43][44][45][46][47][48][49][50][51][52][53][54][55][56][57][58][59][60][61][62]
SMS	21.1% (25/118)	[1][2][63][64][65][66][67][68][69][70][71][72][73][74][75][69][76][77][78][79][80][81][82][83][84]
Web	19.4% (23/118)	[1][63][5][85][86][87][88][89][27][90][91][92][72][38][46][93][94][95][96][81][97][98][99]
Pedometers, sensors and wearable devices etc.	16.1% (19/118)	[63][10][100][101][22][23][31][102][41][73][48][52][53][78][97][60][103][61][62]
Others	09.3% (11/118)	Bluetooth Inhaler [12], haptic assisted physio-therapeutic system [26], virtual environment technology [104][105][106], telemonitoring [41], Interactive voice response technology [107][95], interactive posters [108], Augmented Bin [109] PDA [110]
Game	6.77% (8/118)	[85][111][112][113][114][25][115][116]
Desktop app	3.3% (4/118)	[12][27][32][103]
Social networks	2.5% (3/118)	[109][117][60]

Table 2. Behavior change techniques included in the studies.

Technique	Usage count	Reference
Goal setting	42	[3][14][63][5][8][10][11][100][86][112][87][88][17][18][19][20][68][23][28][30][34][70][35][90][37][39][41][72][107][42][73][45][48][118][53][119][80][57][81][98][103][99]
Self-monitoring	39	[3][63][85][11][13][100][15][16][112][18][19][20][68][25][28][29][30][32][102][34][70][35][92][71][40][41][72][107][44][49][94][95][110][57][98][60][84][103][43]
Motivation	34	[2][63][4][6][9][10][111][14][67][25][27][31][69][70][104][91][92][38][39][42][73][44][109][105][48][115][76][54][80][58][60][61][99]

Feedback	33	[1][3][63][9][11][113][87][18][19][21][101][68][23][26][27][29][30][31][34][36][39][71][108][72][107][52][53][110][79][57][97][84][99]
Social support	21	[3][4][6][15][17][68][23][24][30][31][69][70][91][43][94][117][54][79][57][98][60]
Self-belief/ Self-efficacy	14	[4][68][23][29][70][92][38][105][106][79][119][120][82][103]
Self-management	10	[5][7][65][22][43][46][47][50][51][58]
Reward/incentive	13	[85][8][111][87][114][18][21][23][33][49][79][99][62]
Self-regulation	8	[4][100][33][34][37][42][93][79]
Education/information	26	[63][64][4][5][85][9][66][12][113][87][114][18][19][68][23][24][33][35][38][43][45][75][119][80][57][59]
Tailoring/Personalization	3	[6][17][58]
Distraction	3	[6][68][54]
Discrepancy between current behavior and goal	2	[3][18]
Credible Source	2	[3][18][57]
Framing/reframing	2	[18][68]
Graded task	3	[3][68][23]
Prompt/Cues	5	[18][68][72][53][57]
Salience of Consequences	5	[3][68][79][80][57]
Skill training	3	[4][119][58]
Positive Psychology technique	1	[13]
Reminder	2	[113][20][94][121][76][77][78]
Reinforcement	4	[113][52][121][77]
Social Comparison	2	[18][62]
empowerment	1	[61]

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