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Table: User Model Parameters

Serial number	Paper reference	PA ^a profile	Demographics	Medical data	BCT ^b parameters	Contextual information
1	Vandelanotte et al [1]	Activity monitor data, sitting time, and history of feedback	age, gender, education, BMI ^c , employment, income, postcode, and address	Presence or absence of depression, anxiety, and stress; sleep behavior and duration ^d	Subjective PA, motivation, action planning, and goal setting	Quality of life, perceived neighborhood environment ^d , learning style, and delivery mode preference
2	Ahire et al [2]	Lifestyle	Age and weight	Medical condition and allergies	—	Preferences
3	Mukhtar [3]	User activities type, duration and difficulty level, and history of activities	Age and gender	Medications, chronic conditions, disabilities, and medical history	—	User preferences on exercise type and routine and diet and social interests
4	Tseng et al [4]	User physiological value and	—	Health assessment reports	—	—

		history of recommendations				
5	Storm et al [5]	Self-reported PA and goal (static)	Gender, country, marital status, BMI, year of birth, employment, and education	—	Self-efficacy, planning, habit strength, stage, intention, and risk perception	—
6	Schulz et al [6]	PA level	Age, gender, height, weight, marital status, religious background, ethnicity, educational level, current work status, and income	Presence of high blood pressure, diabetes, or cancer	Attitude, barriers, self-efficacy, intention, and social support	Quality of life, smoking, alcohol consumption, and fruits and vegetable intake
7	Hermens et al [7]	PA (in energy expenditure), history of	Age, height, and weight	—	Stage of change and self-efficacy	Current time, day weather, and temperature

		sent messages, and user goal				
8	Lee et al [8]	Type, intensity, duration, PA level, and history of exercise	Weight, BMI, and age	—	Barriers, stage of change, and motivational readiness	Preference of exercise and tiredness
9	Fahim et al [9]	User activities and history of activities	Age and gender (height and weight from case study)	—	—	Social profile, emotion, preferred activity, food, and music
10	Dharia et al [10]	Accelerometer data, calories, history of activity	Age and gender	—	—	Location, activity preferences, and calendar availability
11	Rabbi et al [11]	Accelerometer data, history of activity, MET ^e and calorie for each activity, and weekly weight goal	Age, gender, height, and weight	—	—	User preference for suggestion provided and location

12	Twardowski et al [12]	Fitness level, current activity, and next predicted activity	Weight	Health care record and pulse	—	Calendar
13	Yom-Tov et al [13]	Previous day PA, cumulative number of minutes of PA in week, fraction of activity goal, fraction versus expected at this point in the week, history of messages sent, and number of days since feedback message sent	Age and gender	—	—	—
14	Lim et al [14]	HR ^f , Step, calorie, history of recommendations	—	—	—	Location, mood, User feedback on recommendations

15	Cook et al [15]	PA level, minutes of PA per day, and minutes of MVPA ^g	Age and gender	—	Attitudes, self-efficacy, social support, perceived benefits, perceived barriers, and environment	—
16	Larsen et al [16]	Frequency, duration, and intensity of MVPA	Height, weight, income, marital status, and family size	Resting blood pressure	Motivational stage for MVPA change, MVPA change strategies, self-efficacy, decisional balance, family influence and support, peer influence and support, enjoyment for activity, and environmental access	—

17	Short et al [17]	Minutes of MVPA per week and resistance training score	Height, weight, and BMI	Stage of breast cancer, time since treatment, current menopausal status, and number of comorbidities	Intention, barrier, outcome expectations, social support, and self-efficacy	Location and fatigue
18	Boudreau et al [18]	Baseline PA level and minutes of PA per week	Age, gender, marital status, occupation, and education	—	Intention, self-efficacy, social influence, attitude, perceived benefits, and barriers	—
19	Moreau et al [19]	Number of times/week and minutes/time for vigorous, moderate, and low PA	Height, weight, age, gender, occupation, origins, and marital status	—	Intention, attitude, self-efficacy, motivation, and confidence	—
20	Rajanna et al [20]	Activity history	Age	—	—	Location, time of day, weather, and calendar

21	Irvine et al [21]	Self-reported PA (frequency and duration), activity plan, and goal	—	—	Intention, barriers, self-efficacy, stage of change, and motivation	—
22	Friederichs et al [22]	PA level	Age, gender, and BMI	—	Efficacy, confidence, and intention	—
23	Blake et al [23]	Minutes of PA	—	—	Attitude, subjective norm, perceived behavior control, intention, and behavior	—
24	Coolbaugh et al [24]	PA duration, HR, resting HR, accelerometer data, and goal (system generated adaptive)	—	—	—	—
25	Hargreaves et al [25]	Step count	Height, weight, and BMI	Medication for blood pressure or cholesterol, resting HR, blood	Motivation, intention, self-efficacy, and barriers	—

				pressure, glucose, cholesterol, HDL ^h , and triglycerides		
26	Williams et al [26]	Self-reported activity level, exercise history, and daily activities	—	Stiffness and pain	—	—
27	Kwasnicka et al [27]	PA minutes, and goal	Age, sex, date of birth, height, weight, handedness, marital status, ethnicity, education, household income, post code, number of hours and days worked per week, work	Sleep quality and duration ^d	Knowledge, self-efficacy, attitude, perceived behavioral control, intentions, and outcome expectations	—

			level, salary brackets associated with each employment level, and type of work undertaken			
28	Janols et al [28]	Daily and weekly habits	Gender, age, social factors, and living condition	Pain and sleeping conditions	Motivational info available with each category of activity	Priority of activities and preference
29	Ali et al [29]	Accelerometer data, duration of each activity, calories, and recommended goal (in METs)	Age, gender, height, and weight	—	—	Preferred activities
30	Mistry et al [30]	Quantity and duration of MVPA and goal	Age, gender, minority status, education, employment,	—	Perceived barriers and benefits	Preference of day and time

			household income and marital status			
31	Peels et al [31]	Minutes of PA	Gender and age	—	Stage of change, awareness, attitude, knowledge, self-efficacy, motivation, and intention	Location and neighborhood
32	Klein et al [32]	Steps and stairs climbed	Occupation	—	Skills, barriers, outcome expectations, subjective PA, and stage of change	Current location, significant locations, current day, time, weather, and social profile
33	Ammann et al [33]	PA level measured using the Active Australia Survey	Age, height, weight, education, employment, and BMI	—	Attitudes, self-efficacy, intention, benefits, and barriers	—
34	Pyky et al [34]	Accumulated daily MVPA time and daily	Height, weight, socioeconomic	—	Stage of change, life satisfaction, and self-	Social profile

		sitting time	status, and family income		rated health	
35	Varadhara jan et al [35]	Accelerometer data, speed, distance, and HR	Age, height, and weight	—	Motivation	Mood and social profile
36	Codreanu et al [36]	Execution speed, difficulty level, target zone for HR, pulse, time, and number of exercises	Age and weight	Symptoms	—	“mood temperature factor”
37	Marsaux et al [37]	Daily PA level, activity energy expenditure (AEE), and time spent in different PA intensities	BMI and waist measurements	Blood total cholesterol, L2 and L3, fat mass- and obesity-associated gene, and FTO gene	—	—

38	Alley et al [38]	PA level, number of activity sessions per week, and goal	BMI and age	—	Perceived benefits, barriers, self-efficacy, and attitude	Preference of video calling service, possession of a garden, distance to places regularly visited, working status, length of lunch break, facilities at work, and activity level of people around
39	Mitchell et al [39]	Step count, PA monitoring at baseline, time in LPA ⁱ and MVPA, average signal vector magnitude value, and average daily	—	Anthropometry, blood pressure, and blood chemistry	Perceived barriers, rate of perceived exertion, and affective state	—

		sedentary time				
40	Oosterom -Calo et al [40]	—	—	—	Self-efficacy and knowledge	—
41	De Cocker et al [41]	ActivPal measurements, PA from questionnaires, personalized action plan with goal, level of sitting time in 5 domains, and frequency of interruptions in prolonged sitting	Gender, age, education, occupation, height, weight, and work hours	—	User attitudes, self-efficacy, social support, knowledge, intentions, and perceived benefits and barriers related to reducing or interrupting sitting	—
42	Triantafyllidis et al [42]	HR, repetitions set, accuracy of exercise, history log	—	medical condition, pain, and blood pressure	—	—
43	Dobrican et al [43]	HR, training zone, duration,	Age	Anaerobic threshold and status	—	—

		frequency, and intensity of training session		of whether patient under treatment		
44	Hales et al [44]	Minutes of intentional PA and total calories	Weight, gender, race, BMI, education, and marital status	—	Self-efficacy, and personality characteristics	—
45	Martin et al [45]	Steps, “zone of adherence,” and activity	Age, sex, weight, and height	—	—	Preference of calorie intake
46	Spark et al [46]	Minutes per day MVPA, Average MVPA minutes, and goal	Weight	—	—	Preference for content, timing and frequency of text messages, and self-nominated reward for reaching goal
47	Kattelman et al [47]	PA, food, and goal	—	—	Contemplators, precontemplators, and stage	—

48	Partridge et al [48]	—	Age and gender	—	Participant's baseline stage of change and perceived benefits and barriers	—
49	Walthouwer et al [49]	Diet and exercise pattern	Weight and BMI	—	Attitude, self-efficacy, and social influence beliefs regarding PA and diet	—

^aPA: physical activity.

^bBCT: behavior change technique.

^cBMI: body mass index.

^dMeasured but unclear if used for personalization.

^eMET: metabolic equivalent.

^fHR: heart rate.

^gMVPA: moderately vigorous physical activity.

^hHDL: high-density lipoprotein.

ⁱLPA: light physical activity.

— : indicates no parameters present in the category

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