Barriers and Facilitators Toward Exercise/PA/Sport Participation

Co-funded by the European Union

Agenda

- **Exercise/PA/Sport and Health in Europe: What do we Know?**
- **Reasons for Exercise/PA/Sport Participation**
- **Barriers: Reasons for not Exercising**
- **Motivators/Barriers for Exercise/PA/Sport for people with mental health issues**
- **Exercise Adherence**
- **Determinants of Exercise Adherence**
- **Strategies for Enhancing Exercise Adherence**
- **Guidelines for Improving Exercise Adherence**

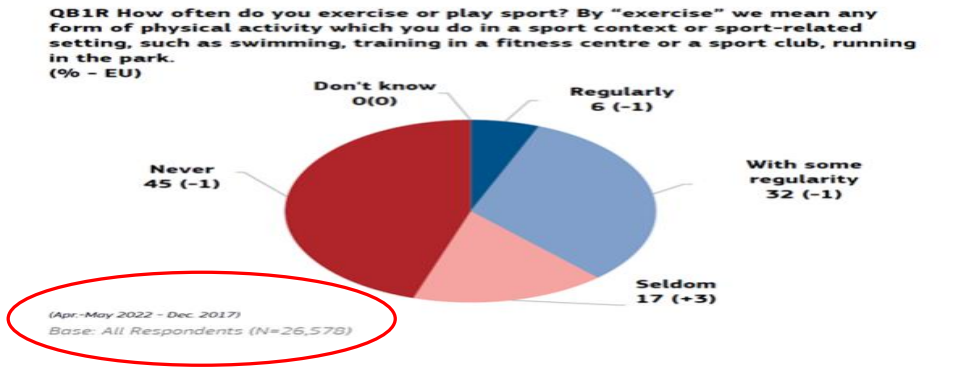
Exercise/PA/Sport and Health in Europe: What do we Know? (2022)

27 countries participated in a recent survey (N = 26578).

- 62% of European citizens never or seldom exercise or played.
  - 45% never exercise or played.
  - 17% exercised less than once a week.
- 38% exercised or played at least once a week or more.
- Northern Europe was more physically active than the South and East.
- 71% of the population in Finland exercised for at least once a week, ahead of Luxemburg (63%), Netherlands (60%), and Sweden and Denmark (59%).
- 70% of the people in Portugal, Greece (68%), Poland (65%), followed by Romania (62%) and Bulgaria (61%), never or seldom exercise or played.
- During COVID-19, slightly more than a third of Europeans were either less physically active than before or were active at the same level

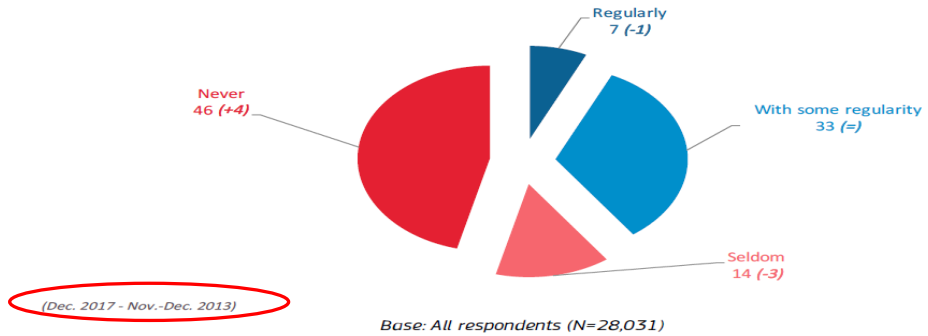
Eurobarometer Survey (Apr. – May, 2022 – Dec., 2017)

Exercise/PA/Sport and Health in Europe: What do we Know? (2022)



Exercise/PA/Sport and Health in Europe: What do we Know? (2018)

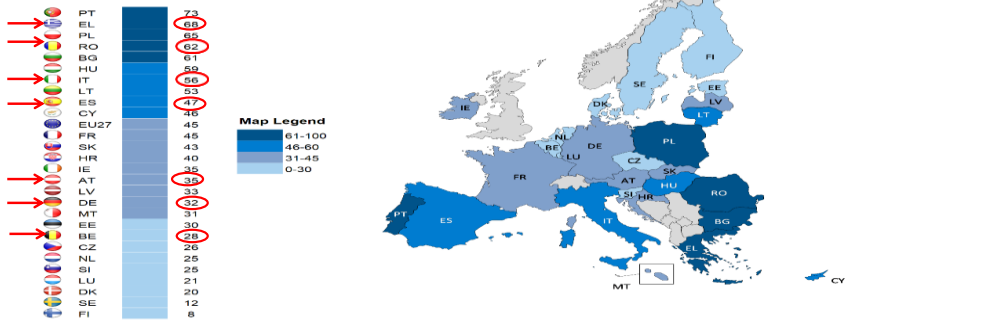
QB1 How often do you exercise or play sport?
(% - EU)



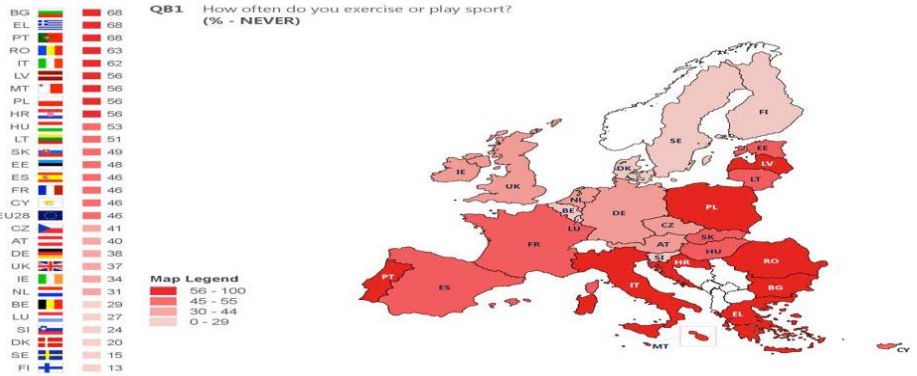
Base: All respondents (N=28,031)

Exercise/PA/Sport and Health in Europe: What do we Know? (2022)

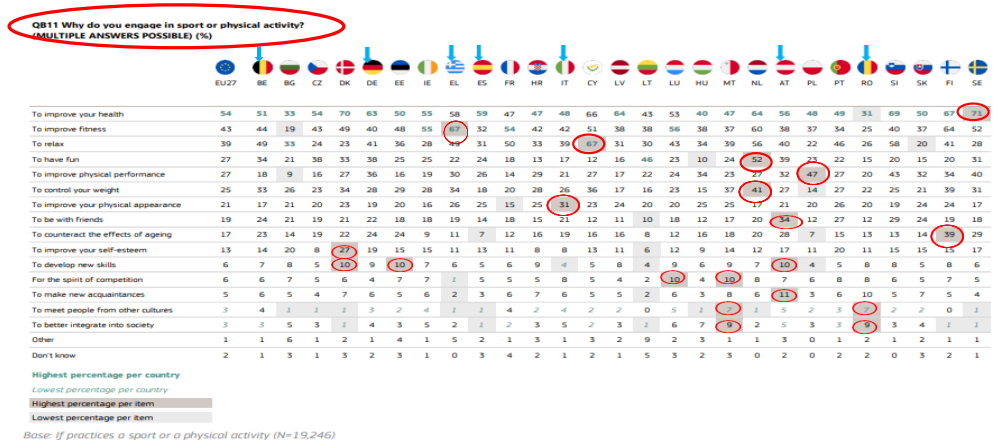
QB1R How often do you exercise or play sport? By "exercise" we mean any form of physical activity which you do in a sport context or sport-related setting, such as swimming, training in a fitness centre or a sport club, running in the park.
(% - Never)



Exercise and Health in Europe: What do we Know? (2018)



Exercise and Health in Europe: What do we Know? (2022)



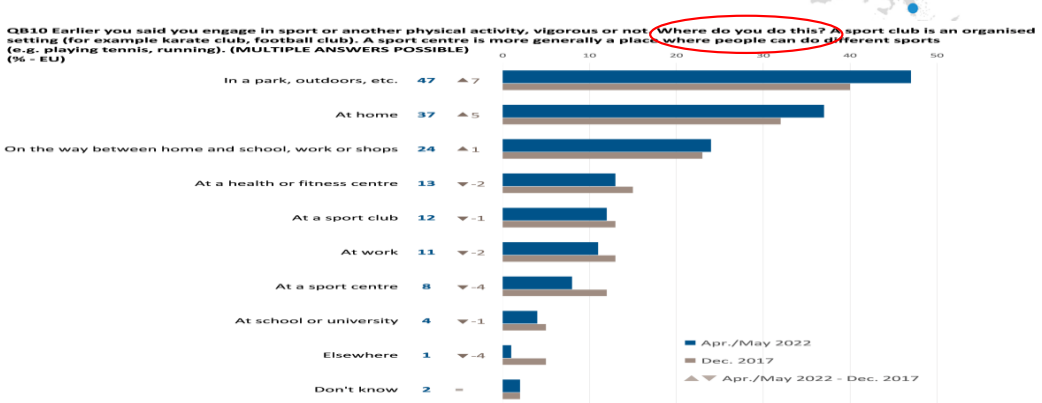
QB11 Why do you engage in sport or physical activity? (MULTIPLE ANSWERS POSSIBLE) (%)

	EU27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE
To improve your health	54	51	33	54	70	63	50	55	58	59	47	47	48	66	64	43	53	40	47	64	56	48	49	31	69	50	67	71
To improve fitness	43	44	19	43	49	40	48	55	67	32	54	42	42	51	38	38	56	38	37	60	38	37	34	25	40	37	64	52
To relax	39	49	33	24	23	41	36	28	49	31	50	33	39	67	31	30	43	34	39	56	40	22	46	26	58	20	41	28
To have fun	27	34	21	38	33	38	25	25	22	24	18	13	17	12	16	46	23	10	24	52	39	23	22	15	20	15	20	31
To improve physical performance	27	18	9	16	27	36	16	19	30	26	14	29	21	27	17	22	24	34	23	27	32	47	27	20	43	32	34	40
To control your weight	25	33	26	23	34	28	29	28	34	18	20	28	26	36	17	16	23	15	37	41	27	14	27	22	25	21	39	31
To improve your physical appearance	21	17	21	20	23	19	20	16	26	25	15	25	31	23	24	20	20	25	25	17	21	20	26	20	19	24	24	17
To be with friends	19	24	21	19	21	22	18	18	19	14	18	15	21	12	11	10	18	12	17	20	34	12	27	12	29	24	19	18
To counteract the effects of ageing	17	23	14	19	22	24	24	9	11	7	12	16	19	16	16	8	12	16	18	20	28	7	15	13	13	14	39	29
To improve your self-esteem	13	14	20	8	27	19	15	15	11	13	11	8	8	13	11	6	12	9	14	12	17	11	20	11	15	15	15	17
To develop new skills	6	7	8	5	10	9	10	7	6	5	6	9	4	5	8	4	9	6	9	7	10	4	5	8	8	5	8	6
For the spirit of competition	6	6	7	5	6	4	7	7	1	5	5	5	8	5	4	2	10	4	10	8	7	6	8	8	6	5	7	5
To make new acquaintances	5	6	5	4	7	6	5	6	2	3	6	7	6	5	5	2	6	3	8	6	11	3	6	10	5	7	5	4
To meet people from other cultures	3	4	1	1	1	3	2	4	1	1	4	2	4	2	2	0	5	1	7	1	5	2	3	7	2	2	0	1
To better integrate into society	3	3	5	3	1	4	3	5	2	1	2	3	5	2	3	1	6	7	9	2	5	3	3	9	3	4	1	1
Other	1	1	6	1	2	1	4	1	5	2	1	3	1	3	2	9	2	3	1	1	3	0	1	2	1	2	1	1
Don't know	2	1	3	1	3	2	3	1	0	3	4	2	1	2	1	5	3	2	3	0	2	0	2	2	0	3	2	1

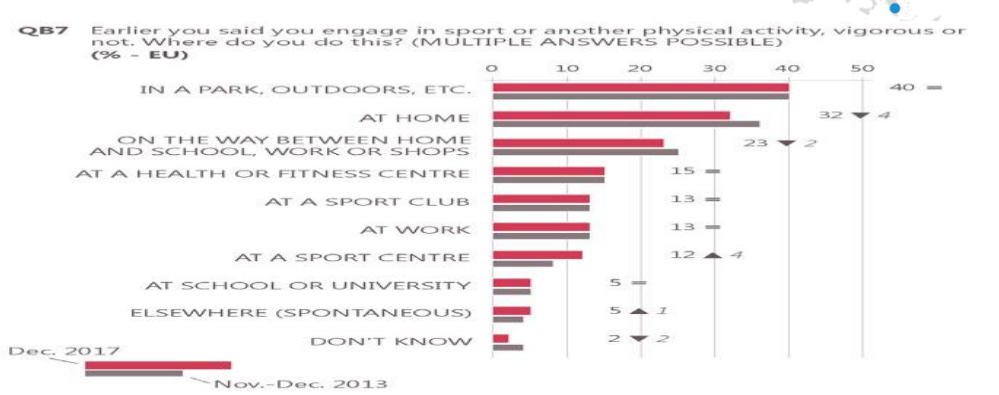
Highest percentage per country
Lowest percentage per country
Highest percentage per item
Lowest percentage per item

Base: If practices a sport or a physical activity (N=19,246)

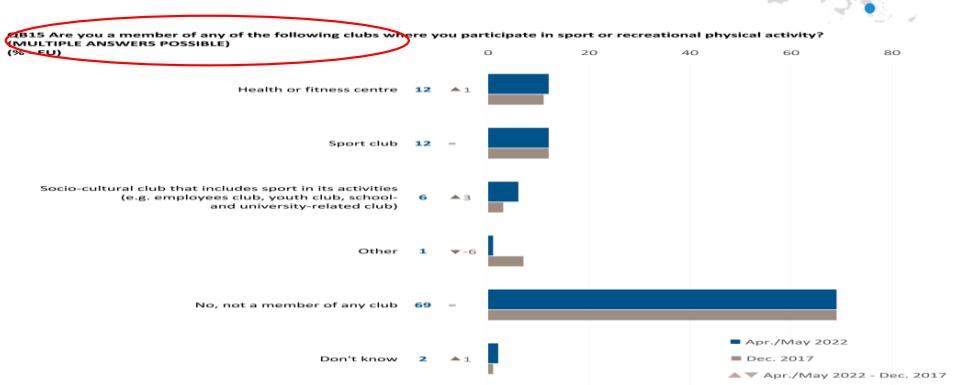
Exercise and Health in Europe: What do we Know? (2022)



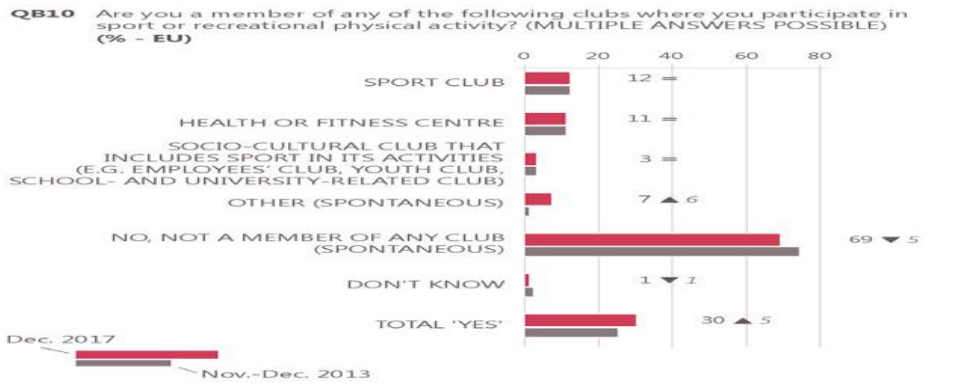
Exercise/PA/Sport and Health in Europe: What do we Know? (2018)



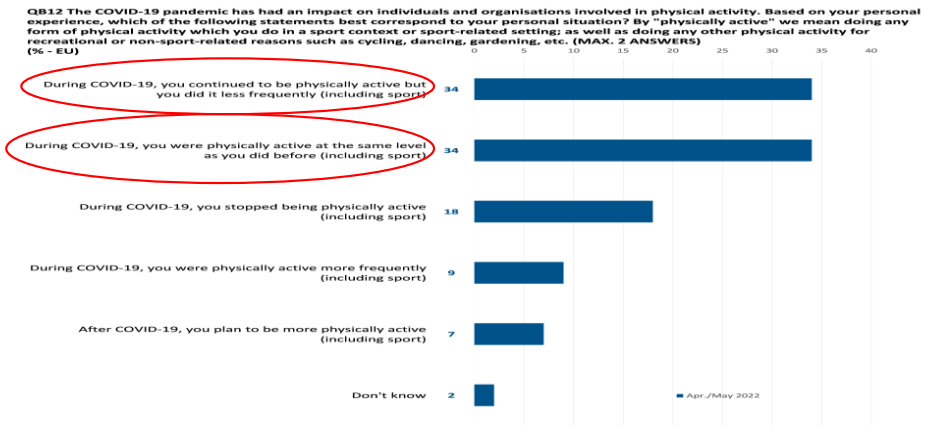
Exercise/PA/Sport and Health in Europe: What do we Know? (2022)



Exercise and Health in Europe: What do we Know? (2018)



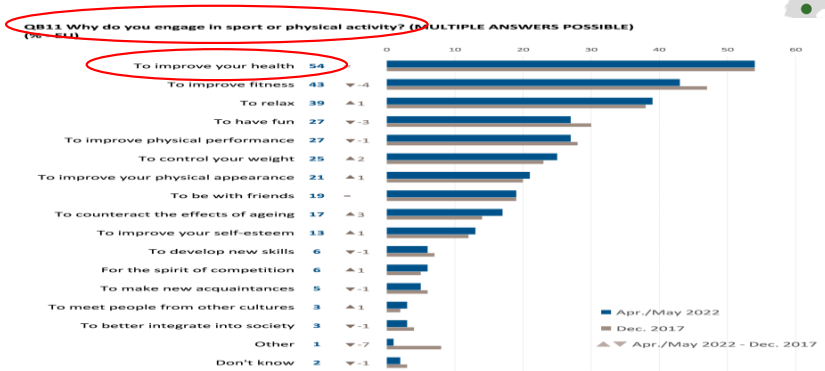
PA/Exercise/Sport & COVID-19



Reasons for Exercise Involvement

- **Health-related factors**
  - **Improve health**
  - **Improve fitness**
  - **Control weight**
- **Cognitive/psychological factors**
  - **Improve self-esteem**
  - **Improve self-efficacy**
  - **Overcome stress**
- **Social factors**
  - **To be with friends**
  - **To have fun**
  - **To meet people**
- **Personal factors**
  - **Improve skills**
  - **Improve appearance**

Reasons for Exercise Involvement (2022)



Reasons for Exercise Involvement (2018)

Barriers for Exercise/PA/Sport Involvement

- A barrier is something that gets in the way of you achieving your goals
- Stops you from achieving a higher fitness level
- Can make you feel helpless and unable to change

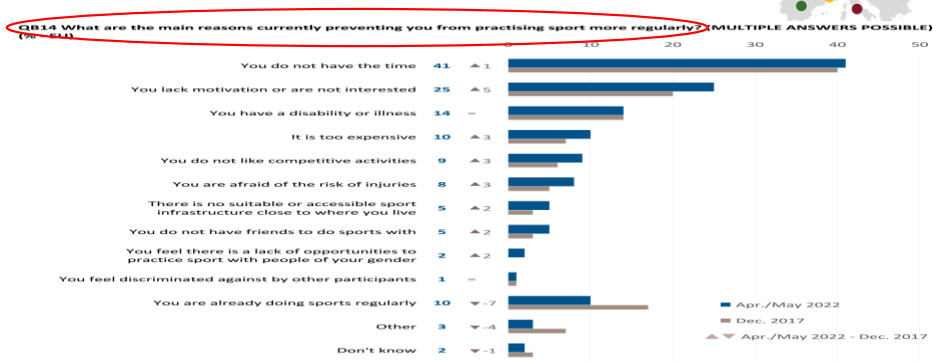
Barriers for Exercise/PA/Sport Involvement

- **Not enough time to exercise**
- **Lack of motivation**
- **Inconvenient to exercise**
- **Exercise is not enjoyable**
- **Exercise is boring**
- **Lack of confidence in ability to exercise successfully**

Barriers for Exercise/PA/Sport Involvement

- Fear of being injured, or have been injured recently
- Lack of self management skills
  - Ability to set personal goals
  - Monitor progress
  - Award progress towards meeting goals
- Lack of encouragement from family and friends
- Do not have access to appropriate facilities
  - Bicycle paths, sidewalks, nice parks
    - (only individuals who live in Athens have this issue)

Barriers: Reasons for not Exercising (2022)



Barriers: Reasons for not Exercising (2018)

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Motivations and barriers towards optimal physical activity level: A community-based assessment of 28 EU countries

Audrius Dėdelė, Yevheniia Chebotarova, Auksė Miškinytė *

Department of Environmental Sciences, Faculty of Natural Sciences, Vytautas Magnus University, Akademija 53361, Kaunas district, Lithuania

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ABSTRACT

Regular physical activity (PA) is one of the most important determinants of a healthy lifestyle and improved physical and mental well-being. Despite the health benefits of regular PA, the studies show low levels of PA among European adolescents and adults. An increase in physical inactivity has been associated with different personal and environmental factors. This study aimed to investigate positive motivation and barriers to community-based PA. Face-to-face interviews were conducted to collect data on PA, positive motivation and barriers to PA, demographic, and socioeconomic factors. Moderate and vigorous levels of PA were assessed. Regression analysis was applied to estimate the associations for positive and negative reasons for meeting PA recommendations. Data were available for 28,031 adults with a mean age of 48.3 (SD = 18.8) and 51.8% women. Significant variations in individual characteristics were seen between different types of communities. The percentage of participants who reported achieving recommended levels of PA was the lowest in rural areas (44.3%). Regression models showed that most motivational factors had a strong positive association with meeting PA recommendations. We observed the effects of interactions between making acquaintances, having fun and the type of community on meeting PA recommendations. The effects of interactions between the type of community and barriers to PA such as price, risk of injury, disability / illness, and a lack of motivation on PA recommendations were observed. In conclusion, the motivational factors and barriers to PA are associated with the physical environment, and community-based programs and policies for encouraging PA participation are needed.

Table 2
Factors associated with participation in PA by the type of community (multiple responses).

Reasons	Rural area, N (%)	Towns and suburbs/ small urban area, N (%)	Cities / large urban area, N (%)	Total, N
Positive				
Health improvement	3136 (27.4)	3977 (34.8)	4326 (37.8)	11,439
Physical appearance	1015 (26.3)	1287 (33.3)	1558 (40.4)	3860
Counteract aging	948 (24.8)	1312 (34.4)	1557 (40.8)	3817
Have fun	1404 (24.7)	1962 (34.5)	2315 (40.7)	5681
Relax	2017 (26.8)	2588 (34.4)	2928 (38.9)	7533
Be with friends	1150 (29.5)	1362 (34.9)	1389 (35.6)	3901
Make acquaintances	347 (26.9)	449 (34.9)	492 (38.2)	1288
Meet other cultures	142 (29.2)	148 (30.4)	197 (40.5)	487
Physical performance	1441 (25.9)	1883 (33.9)	2238 (40.2)	5562
Fitness	2469 (26.0)	3230 (34.1)	3785 (39.9)	9484
Control weight	1309 (25.0)	1782 (34.0)	2154 (41.1)	5245
Self-esteem	736 (27.5)	870 (32.5)	1074 (40.1)	2680
New skills	329 (23.6)	443 (32.1)	613 (44.4)	1382
Spirit of competition	292 (26.6)	345 (31.5)	459 (41.9)	1096
Social integration	203 (29.5)	223 (32.5)	261 (38.0)	687
Total	5156	6285	6855	18,296
Negative				
No time	3216 (29.2)	3500 (31.8)	4289 (39.0)	10,999
Too expensive	599 (26.1)	739 (32.3)	953 (41.6)	2291
Competitivity	511 (30.1)	576 (33.9)	612 (36.0)	1699
No infrastructure	471 (46.7)	263 (26.1)	275 (27.3)	1009
Disability / illness	1562 (33.3)	1563 (33.3)	1563 (33.3)	4688
No friends	311 (29.5)	319 (30.3)	424 (40.2)	1054
Feel discriminated	41 (23.8)	60 (34.9)	71 (41.3)	172
Lack motivation	1747 (28.8)	1937 (32.0)	2372 (39.2)	6056
Risk of injuries	498 (28.6)	567 (32.6)	675 (38.8)	1740
Already doing	1064 (26.2)	1459 (35.9)	1539 (37.9)	4062
Total	7607	8523	9722	25,852

Physical Activity/Exercise/Sport and Mental Health

- People with mental health illnesses have poorer quality of life and physical health and they are less active than general population (e.g., Schuch et al., 2017).
- This is mainly due to natural causes and poor health in this population (e.g., unhealthy lifestyle and factors related to treatment, such as the weight gain associated with some medication.
- However, physical activity (PA) has been found to provide many benefits, including an improvement to physical and mental health as well as cognition and quality of life in people with mental health illnesses.
- Furthermore, PA has been found to enhance recovery by rebuilding identity, mastering tasks, increasing their hope for the future, and feeling more autonomous in their daily living (Leutwyler, Hubbard, Jeste, & Vinogradov, 2012; Soundy et al., 2014).

Physical Activity/Exercise/Sport and Mental Health (Barriers to PA)

- Although there are many benefits to being active in people with MH conditions, participation on exercise/PA/sport programs is low, whereas attrition is high (Archie, Wilson, Osborne, Hobbs, & McNiven, 2003; Beebe et al., 2010).
- Furthermore, people with MH illnesses engage in less moderate and vigorous PA lower than the general population and on exercise/PA/sport programs their sedentary behavior is higher.
- A number of barriers to PA in this population have been reported such as: symptoms of the illness, side effects of the medications, social physique anxiety, immediate negative outcomes, negative expectations, misconceptions about PA, lack of resources and the built environment (Rastad, Martin, & Åsenlof, 2014; Soundy et al., 2014; Vancampfort et al., 2013a).
- However, the most prevalent barriers to this population are: low mood, stress, and lack of support.

Barriers for Exercise/PA/Sport identified by individuals with mental health issues

- **Related to physical health:**
  - Pain symptoms
  - Weight
  - Lack of fitness
  - Lack of energy
  - Disability

"(I) Will not get better through physical activity"

Barriers for Exercise/PA/Sport identified by individuals with mental health issues

- **Environmental**
  - Being an inpatient
  - Lack of local access
  - Weather

"Not be an inpatient, or being able to use the gym without someone watching you as that's why I don't use it"

- **Social contact**

"I don't like doing things on my own"

- **Time pressures**

"Fitting with full time job, Mentally exhausted"
"Having more hours in the day"

Patients quotes: hopelessness

"(with inactivity the) Future would be bleak, physically and mentally"

"I (will) Loose the will to get better"

"There will be no way to succeed in life"

"I'll just stay depressed/ suicidal"

Physical Activity/Exercise/Sport and Mental Health (Motivators to PA)

- On the other hand, a number of motivators/facilitators to PA in this population have been reported (e.g., losing weight, improving mood, reducing stress, having fun, good weather, progress, self-compassion and a stimulating environment).
- In order to understand the reasons that underlie individuals engagement in exercise/PA/sport, including individuals with MH illnesses, it is importsnt to understand the individual's behavior.
- This has led to research on how exercise/PA/sport is adopted and maintained (Vancampfort & Faulkner, 2013) and to understand what behavioral processes may improve engagement in PA.
- Behaviour change theories which have been considered in relation to PA in people with MH illnesses, as well as to healthy individuals, which predetermines PA include the Health Belief Model, Theory of Reasoned Action/Theory of Planned Behaviour, Social Cognitive Theory, Self-Determination Theory, and Transtheoretical Model.

Motivators/Facilitators for Exercise/PA/Sport identified by individuals with mental health issues

- Time
- Scheduling & having a weekly plan
- Physiotherapy / staff input
- Improving mood
- Increased social contact
- Environmental – easier access

Glowacki, K. et al. (2017). Barriers and facilitators to physical activity and exercise among adults with depression: A scoping review. *Mental Health and Physical Activity, 13,* 108-119.

- The purpose of this scoping review is to identify barriers and facilitators to exercise PA participation among individuals with depression.
- Method: A scoping review with systematic searches was conducted. Eligible studies required samples>50% diagnosed with depression or a mood disorder, and reported empirical data on barriers and/or facilitators to physical activity using quantitative and/or qualitative methods. Extracted barriers and facilitators were classified into the fourteen (14) domains of the **Theoretical Domains Framework (TDF).**
- Results: Thirteen studies were included (seven quantitative, six qualitative).
- The most common **barriers** were classified under the TDF domains of **Emotion**, Environmental Context & Resources, Beliefs about Capabilities, and Intentions.
- The most common **facilitators** were classified under the domains of Beliefs about Consequences, Social Influences, **Emotion** and Behavioural Regulation.
- Conclusions: Most identified domains are all common determinants of health behaviours in various models and theories applied to physical activity participation.
- However, the **Emotion domain** appears to be particularly important to individuals with depression, and yet is not covered by these traditional theories of behaviour change, and may be overlooked when trying to promote physical activity among this population.

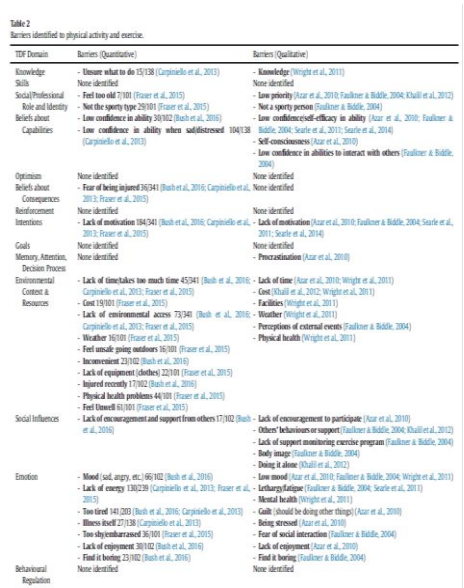


Table 2
Barriers identified to physical activity and exercise.

TDF Domain	Barriers (Quantitative)	Barriers (Qualitative)
Knowledge	- **Unsure what to do** 15/138 (Carpinello et al., 2013)	- **Knowledge** (Wright et al., 2011)
Skills	None identified	None identified
Social/Professional Role and Identity	- **Feel too old** 7/101 (Fraser et al., 2015) - **Not the sporty type** 29/101 (Fraser et al., 2015)	- **Low priority** (Azar et al., 2010; Faulkner & Biddle, 2004; Khalil et al., 2012) - **Not a sporty person** (Faulkner & Biddle, 2004)
Beliefs about Capabilities	- **Low confidence in ability** 30/102 (Bush et al., 2016) - **Low confidence in ability when sad/distressed** 104/138 (Carpinello et al., 2013)	- **Low confidence/self-efficacy in ability** (Azar et al., 2010; Faulkner & Biddle, 2004; Searle et al., 2011; Searle et al., 2014) - **Self-consciousness** (Azar et al., 2010) - **Low confidence in abilities to interact with others** (Faulkner & Biddle, 2004)
Optimism	None identified	None identified
Beliefs about Consequences	- **Fear of being injured** 36/341 (Bush et al., 2016; Carpinello et al., 2013; Fraser et al., 2015)	None identified
Reinforcement	None identified	None identified
Intentions	- **Lack of motivation** 184/341 (Bush et al., 2016; Carpinello et al., 2013; Fraser et al., 2015)	- **Lack of motivation** (Azar et al., 2010; Faulkner & Biddle, 2004; Searle et al., 2011; Searle et al., 2014)
Goals	None identified	None identified
Memory, Attention, Decision Process	None identified	- **Procrastination** (Azar et al., 2010)
Environmental Context & Resources	- **Lack of time/takes too much time** 45/341 (Bush et al., 2016; Carpinello et al., 2013; Fraser et al., 2015) - **Cost** 19/101 (Fraser et al., 2015) - **Lack of environmental access** 73/341 (Bush et al., 2016; Carpinello et al., 2013; Fraser et al., 2015) - **Weather** 16/101 (Fraser et al., 2015) - **Feel unsafe going outdoors** 16/101 (Fraser et al., 2015) - **Inconvenient** 23/102 (Bush et al., 2016) - **Lack of equipment (clothes)** 22/101 (Fraser et al., 2015) - **Injured recently** 17/102 (Bush et al., 2016) - **Physical health problems** 44/101 (Fraser et al., 2015) - **Feel Unwell** 61/101 (Fraser et al., 2015)	- **Lack of time** (Azar et al., 2010; Wright et al., 2011) - **Cost** (Khalil et al., 2012; Wright et al., 2011) - **Facilities** (Wright et al., 2011) - **Weather** (Wright et al., 2011) - **Perceptions of external events** (Faulkner & Biddle, 2004) - **Physical health** (Wright et al., 2011)
Social Influences	- **Lack of encouragement and support from others** 17/102 (Bush et al., 2016)	- **Lack of encouragement to participate** (Azar et al., 2010) - **Others' behaviours or support** (Faulkner & Biddle, 2004; Khalil et al., 2012) - **Lack of support monitoring exercise program** (Faulkner & Biddle, 2004) - **Body image** (Faulkner & Biddle, 2004) - **Doing it alone** (Khalil et al., 2012)
Emotion	- **Mood** (sad, angry, etc.) 66/102 (Bush et al., 2016) - **Lack of energy** 130/238 (Carpinello et al., 2013; Fraser et al., 2015) - **Too tired** 143 /203 (Bush et al., 2016; Carpinello et al., 2013) - **Illness itself** 27/138 (Carpinello et al., 2013) - **Too shy/embarrassed** 36/101 (Fraser et al., 2015) - **Lack of enjoyment** 38/102 (Bush et al., 2016) - **Find it boring** 23/102 (Bush et al., 2016)	- **Low mood** (Azar et al., 2010; Faulkner & Biddle, 2004; Wright et al., 2011) - **Lethargy/Fatigue** (Faulkner & Biddle, 2004; Searle et al., 2011) - **Mental health** (Wright et al., 2011) - **Guilt** (should be doing other things) (Azar et al., 2010) - **Being stressed** (Azar et al., 2010) - **Fear of social interaction** (Faulkner & Biddle, 2004) - **Lack of enjoyment** (Azar et al., 2010) - **Find it boring** (Faulkner & Biddle, 2004)
Behavioural Regulation	None identified	None identified

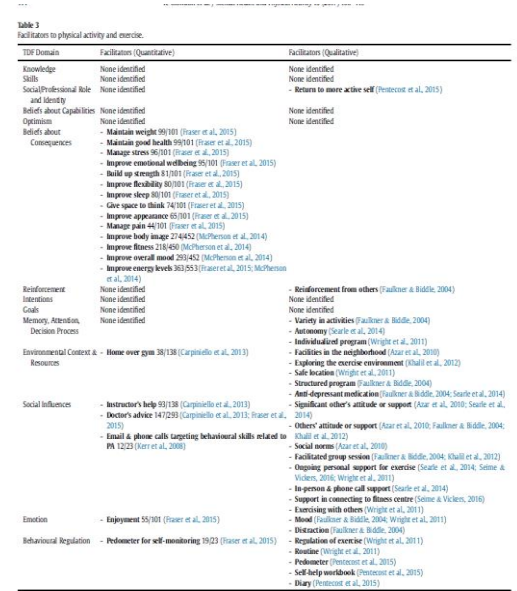


Table 3
Facilitators to physical activity and exercise.

TDF Domain	Facilitators (Quantitative)	Facilitators (Qualitative)
Knowledge	None identified	None identified
Skills	None identified	None identified
Social/Professional Role and Identity	None identified	- **Return to more active self** (Pentecost et al., 2015)
Beliefs about Capabilities	None identified	None identified
Optimism	None identified	None identified
Beliefs about Consequences	- **Maintain weight** 99/101 (Fraser et al., 2015) - **Maintain good health** 99/101 (Fraser et al., 2015) - **Manage stress** 96/101 (Fraser et al., 2015) - **Improve emotional wellbeing** 95/101 (Fraser et al., 2015) - **Build up strength** 81/101 (Fraser et al., 2015) - **Improve flexibility** 80/101 (Fraser et al., 2015) - **Improve sleep** 80/101 (Fraser et al., 2015) - **Give space to think** 74/101 (Fraser et al., 2015) - **Improve appearance** 65/101 (Fraser et al., 2015) - **Manage pain** 44/101 (Fraser et al., 2015) - **Improve body image** 274/452 (McPherson et al., 2014) - **Improve fitness** 218/450 (McPherson et al., 2014) - **Improve overall mood** 293/452 (McPherson et al., 2014) - **Improve energy levels** 363/553 (Fraser et al., 2015; McPherson et al., 2014)	
Reinforcement	None identified	- **Reinforcement from others** (Faulkner & Biddle, 2004)
Intentions	None identified	None identified
Goals	None identified	None identified
Memory, Attention, Decision Process	None identified	- **Variety in activities** (Faulkner & Biddle, 2004) - **Autonomy** (Searle et al., 2014) - **Individualized program** (Wright et al., 2011)
Environmental Context & Resources	- **Home over gym** 38/138 (Carpinello et al., 2013)	- **Facilities in the neighborhood** (Azar et al., 2010) - **Exploring the exercise environment** (Khalil et al., 2012) - **Safe location** (Wright et al., 2011) - **Structured program** (Faulkner & Biddle, 2004) - **Anti-depressant medication** (Faulkner & Biddle, 2004; Searle et al., 2014)
Social Influences	- **Instructor's help** 93/138 (Carpinello et al., 2013) - **Doctor's advice** 147/293 (Carpinello et al., 2013; Fraser et al., 2015) - **Email & phone calls targeting behavioural skills related to PA** 12/23 (Kerr et al., 2008)	- **Significant other's attitude or support** (Azar et al., 2010; Searle et al., 2014) - **Others' attitude or support** (Azar et al., 2010; Faulkner & Biddle, 2004; Khalil et al., 2012) - **Social norms** (Azar et al., 2010) - **Facilitated group session** (Faulkner & Biddle, 2004; Khalil et al., 2012) - **Ongoing personal support for exercise** (Searle et al., 2014; Seime & Vickers, 2016; Wright et al., 2011) - **In-person & phone call support** (Searle et al., 2014) - **Support in connecting to fitness centre** (Seime & Vickers, 2016) - **Exercising with others** (Wright et al., 2011)
Emotion	- **Enjoyment** 55/101 (Fraser et al., 2015)	- **Mood** (Faulkner & Biddle, 2004; Wright et al., 2011) - **Distraction** (Faulkner & Biddle, 2004)
Behavioural Regulation	- **Pedometer for self-monitoring** 19/23 (Fraser et al., 2015)	- **Regulation of exercise** (Wright et al., 2011) - **Routine** (Wright et al., 2011) - **Pedometer** (Pentecost et al., 2015) - **Self-help workbook** (Pentecost et al., 2015) - **Diary** (Pentecost et al., 2015)

Van Riijen D., & ten Hoor G. A. (2023). A qualitative analysis of facilitators and barriers to physical activity among patients with moderate mental disorders. *Journal of Public Health, 31,* 1401-1416.

- The study aimed to qualitatively identify determinants, barriers and facilitators of physical activity among a population with mental health disorders.
- Seventeen participants with moderate mental disorders were recruited. Semi-structured interviews were conducted to identify physical activity facilitators and barriers.
- Most participants found physical activity important and expressed a positive attitude towards it.
- In general, **higher self-efficacy** and **more social support** were beneficial for participants' physical activity levels.
- **Reasons/facilitating factors to be more physically active were:** having fun, good weather, progress, routine, self-compassion and a stimulating environment.
- **Barriers were:** not having fun, being busy, mental complaints, lack of energy, procrastination and physical complaints.

Patient quotes: Attitudes/ Self-efficacy/Social support

Facilitators

'Sometimes I have periods when I am in such a flow of doing a lot of physical activities, eh, yes then I really do feel better. Kind of an addictive feeling'

'Physical activity is progress on all aspects of life, you stay clear, fresh, it has a positive influence on your body and your mind, it helps to be more present'

Barriers

'Because I am lazy', 'I lack self-discipline', and

'I am not motivated enough' , 'I am not a sporty type'

Social support

'Hey you look good" or whatever, that is motivating, it shows that you are doing well'

Then umh, there is someone, yes, a kind of social control. Someone is waiting

for you, so it is easier once you have said "I am in to go." Then you have to go. So that makes it easier for me'

Patient quotes:

Facilitators (Not having fun during PA/Being in a nice environment)

'*If you want to become active, find something that you like. Umh, because when you do not like it, your motivation is hard to find. And if you have something you really like, yes then you are also more motivated. You can keep doing it, otherwise, you will be tired of it after a week or a month'*

'Because it helps me to see and do all kinds of fun things of course. Umh, yes, it helps me to be able to go somewhere else'

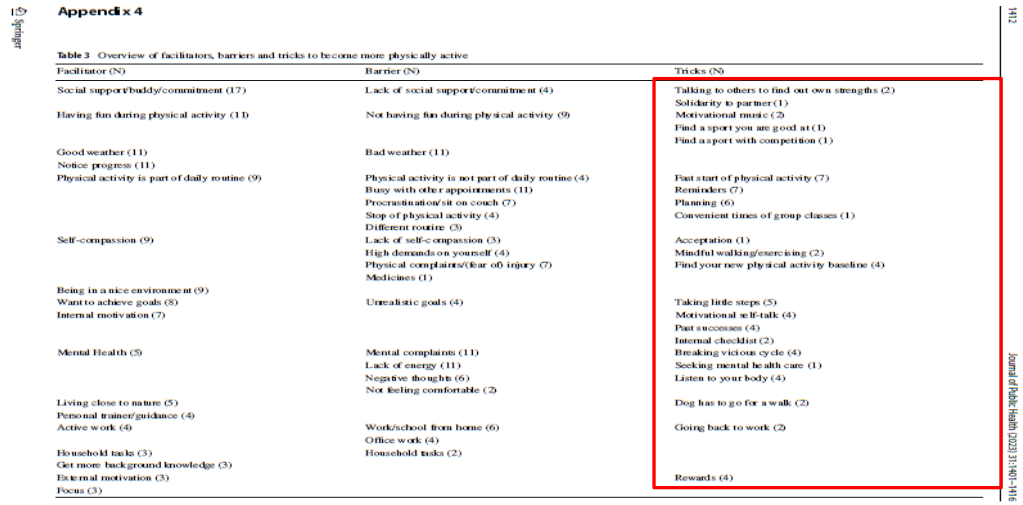
'That you get better at something, because then, of course, it becomes more and more fun to do'

Barriers (Physical complaints/(fear of) injury and mental complaints/lack of energy)

'But, yes, I would like to do some exercises, but on the other hand, I am like, I do not want to do something wrong that can cause pain in my leg again

"Oh I cannot do this at all" and "Oh this is not going well" or "I am not in shape" and "I will never get better at this"'

,



Appendix 4

Table 3 Overview of facilitators, barriers and tricks to become more physically active

Facilitator (N)	Barrier (N)	Tricks (N)
Social support/buddy/commitment (17)	Lack of social support/commitment (4)	Talking to others to find out own strengths (2)
		Solidarity to partner (1)
Having fun during physical activity (11)	Not having fun during physical activity (9)	Motivational music (2)
		Find a sport you are good at (1)
		Find a sport with competition (1)
Good weather (11)	Bad weather (11)	
Notice progress (11)		
Physical activity is part of daily routine (9)	Physical activity is not part of daily routine (4)	Fast start of physical activity (7)
	Busy with other appointments (11)	Reminders (7)
	Procrastination/sit on couch (7)	Planning (6)
	Stop of physical activity (4)	Convenient times of group classes (1)
	Different routine (3)	
Self-compassion (9)	Lack of self-compassion (3)	Acceptation (1)
	High demands on yourself (4)	Mindful walking/exercising (2)
	Physical complaints/(fear of) injury (7)	Find your new physical activity baseline (4)
	Medicines (1)	
Being in a nice environment (9)		
Want to achieve goals (8)	Unrealistic goals (4)	Taking little steps (5)
Internal motivation (7)		Motivational self-talk (4)
		Past successes (4)
		Internal checklist (2)
Mental Health (5)	Mental complaints (11)	Breaking vicious cycle (4)
	Lack of energy (11)	Seeking mental health care (1)
	Negative thoughts (6)	Listen to your body (4)
	Not feeling comfortable (2)	
Living close to nature (5)		Dog has to go for a walk (2)
Personal trainer/guidance (4)		
Active work (4)	Work/school from home (6)	Going back to work (2)
	Office work (4)	
Household tasks (3)	Household tasks (2)	
Get more background knowledge (3)		
External motivation (3)		Rewards (4)
Focus (3)		

Table 3 (continued)

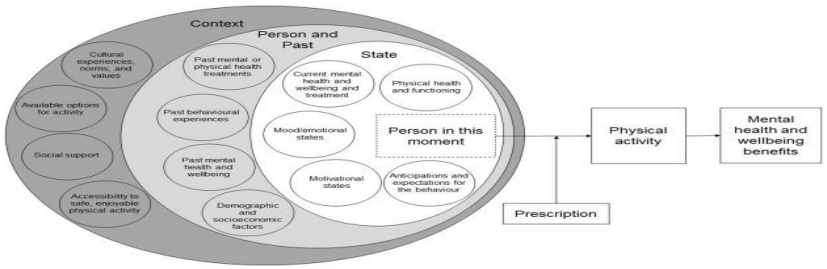
Facilitator (N)	Barrier (N)	Tricks (N)
Curious to different sports (2)		
Distance to physical activity (2)	Closure of gyms (6)	
	Smoking (2)	Increasing other health aspects such as eating (2)
Compliments from others (2)		
Resilience (1)		
Child that wants to play (1)	Young children at home (2)	Nanny for children (1)
Not having a car (1)	Having a car (1)	
Autonomy (1)	Lack of autonomy (1)	
	Menstrual cycle (1)	
	Financial costs (1)	

Journal of Public Health (2023) 31:1401–1416

Rebar, A., & Taylor, A. (2017). Physical activity an mental health; it is more than just a prescription. *Mental Health and Physical Activity, 13,* 77-82.

- Rebar and Taylor (2017) discussed the findings of reviews and other studies published in a special issue of the Journal of Mental Health and Physical Activity, indicating that people with mental health issues have **unique motivators/facilitators and barriers** to PA that are not accounted for within behavior change theories or interventions for the general population.
- More specifically, they have explained that these facilitators and barriers change over time and are dependent on **contextual and person factors.**
- Overall, the articles in the issue serve to complement the existing strong evidence for the effectiveness of exercise/PA for benefiting mental health clinical (e.g., Bailey et al., 2017; Rebar, Stanton, et al., 2015; Rosenbaum et al., 2014), in that they highlight factors that may impact efficacy.

Rebar, A., & Taylor, A. (2017). Physical activity an mental health; it is more than just a prescription. *Mental Health and Physical Activity, 13,* 77-82.



- Informed by the evidence within this issue, the above figure illustrates how prescribing PA does not directly lead to mental health and wellbeing benefits.
- Rather, the efficacy of these efforts are entirely reliant on a person's current states, past, and context.
- The relationship of MH and PA is not unidirectional, and should not only be studied as an isolated cause of behavior on a mental health outcome, but as a reciprocal process that changes over time and differs between people and contexts.

Rebar, A., & Taylor, A. (2017). Physical activity an mental health; it is more than just a prescription. *Mental Health and Physical Activity, 13,* 77-82.

Recommendations for future research

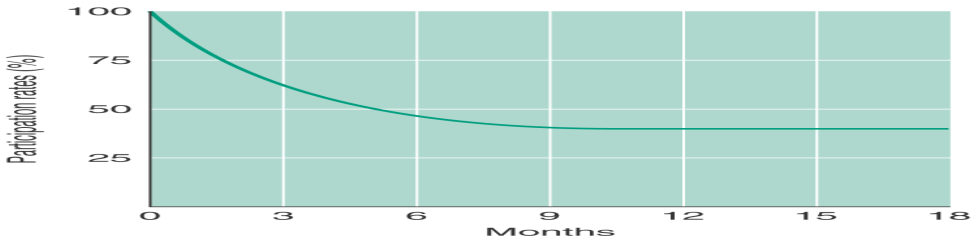
- Acceptability: What do we do if the patients are not willing?
  - Investigation the phenomenon of drop out of the individuals with MH issues
- Maintenance: What happens after those 14 weeks?
  - PA will be maximized when activity is maintained long-term (adherence)
- Scalability: How can we reach everyone in need?
  - Implementation of PA at individual, organizational and/or community levels
- Generalizability: Will this work outside of the controlled settings?
  - Mixed methods process evaluation

Suggestions for Overcoming Exercise/PA/Sport Barriers

- Select activities requiring no new skills: **walking, climbing stairs, or jogging**.
- Exercise with friends who are at the same skill level as you are.
- Find a friend who is willing to teach you some new skills.
- Select activities that require minimal facilities or equipment, such as walking, jogging, jumping rope, or calisthenics.
- Identify inexpensive, convenient resources available in your community (e.g., community education programs, park and recreation programs, worksite programs).
- Develop a set of regular activities that are always available **regardless of weather** (e.g., aerobic dance, indoor swimming, calisthenics, stair climbing).
- Exercise with your brother or sister You can spend time together and still get your exercise.
- Bring your favorite music that motivates you.
- Stay in places with swimming pools or exercise facilities.

Exercise/PA/Sport Participation: Getting Beyond Getting Started

- Of those healthy individuals who start an exercise program, 50% of them will drop out within 6 months.



The Problem of Maintaining Exercise: Exercise Adherence

- **Exercise adherence is the ability to maintain an exercise program for an extended period of time.**
- **People with strong exercise adherence continue exercise despite pressures to stop.**
- **Some of the factors that are related to exercise adherence are:**
  - Demographic factors
  - Health-related factors
  - Cognitive/psychological factors
  - Behavioral factors
  - Social factors
  - Program-related factors
  - Environmental factors

1. Demographic Factors

- Lower levels of adherence are associated with:
  - **Fewer years of education**
    - Not understanding well the benefits of exercise.
  - **Low socioeconomic status**
    - Do not have access to exercise opportunities.
  - **Increasing age**
  - **Gender (Female)**
    - More sports and activities are available to males.
  - **Non-white race ethnicity**
    - Less access and understanding.

2. Health-Related Factors

- Lower levels of adherence are associated with:
  - **Poor General Health and Physical Function**
    - Those who perceive their health to be poor are unlikely to start or adhere to an exercise program.
  - **Overweight/Obesity**
    - Typically less likely to adhere to supervised exercise programs.

Theories/Models of Exercise Behavior

Health Belief Model

The likelihood of exercising depends on the person's perception of the severity of health risks and appraisal of the costs and benefits of taking action.

(Becker and Maiman, 1975)

Health Belief Model
(Rosenstock, 1966)

According to the model, a person's readiness to take a health action is determined by four main factors:

Perceived susceptibility of the disease
Perceived severity or seriousness of the disease
Perceived benefits of the health action
Perceived barriers to performing the action

3. Cognitive/Psychological Factors

- Theory of Reasoned Action/Theory of Planned Behaviour,
- Social Cognitive Theory (self-efficacy),
- Self-Determination Theory, and
- Transtheoretical Model (stages).

4. Behavioral Factors

- Lower levels of adherence are associated with:
  - **Low Prior Exercise level**
    - Past program participation is the most reliable predictor of current participation.
  - **Smoking**
    - Negative effect on attendance – If someone is smoking, exercise is harder and often smokers start exercising after they quit. So, if they start smoking again they are highly likely to stop exercising.

5. Social Factors

- Higher levels of adherence are associated with:
  - **Cohesion in Exercise Group**
    - Group exercise

  - **Social Support**
    - Spouse support
    - Friend support

Group cohesion and Exercise/PA

Group cohesion is:

The forces attracting members to remain in the group as well as forces preventing group disruption.

(Carron & Hausenblas, 1998)

- **Spousal support:** is critical to enhance adherence rates for people in exercise programs. Spouses should be involved in orientation sessions or in parallel exercise programs.
- **Group exercising:** generally produces higher levels of adherence than exercising alone, but tailoring programs to fit individuals and the constraints they feel can help them adhere to the program.

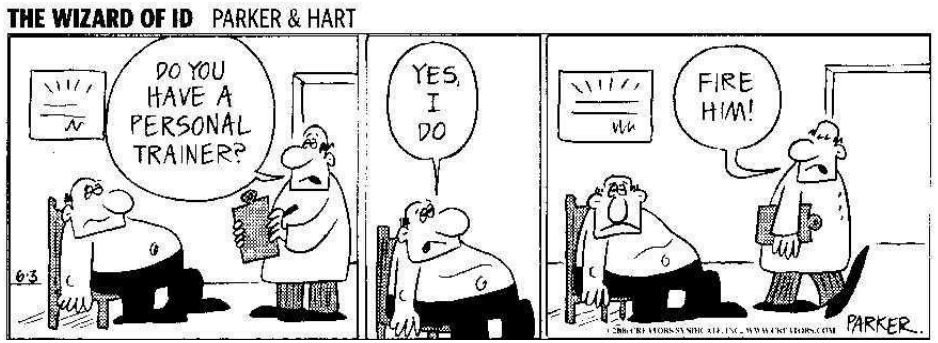
6. Program-Related Factors

- High levels of adherence are associated with:
  - **Leader characteristics**

Program-Related Factors

- Exercise leaders influence the success of an exercise program. They should be knowledge-able, give lots of feedback and praise, help participants set flexible goals, and show concern for safety and psychological comfort.

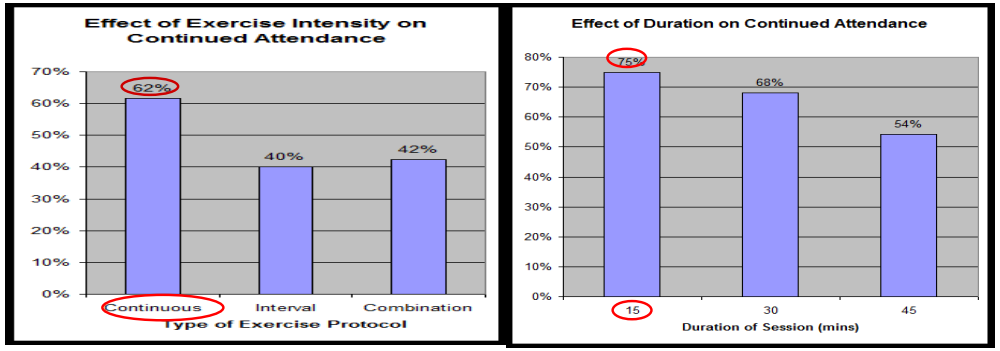
Program-Related Factors



EXERCISE LEADERS

Program-Related Factors

- Lower levels of adherence are associated with:
  - **High Exercise Intensity (Dishman, 1988)**
  - **Long Exercise Duration (Dishman, 1988)**



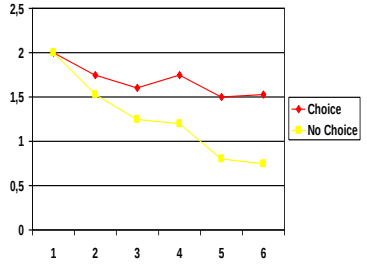
Program-Related Factors

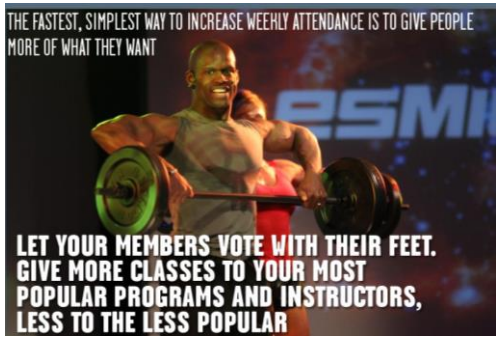
- **Vigorous-intensity exercise**
  - The drop-out rate is almost twice as high as in moderate-intensity activity programs.
- **Most people choose to start moderate-intensity programs rather than vigorous-intensity programs.**
  - This is true regardless of whether intensity is measured physiologically or psychologically.

▶ Exercise intensities should be kept at moderate levels to enhance the probability of long-term adherence to exercise programs.

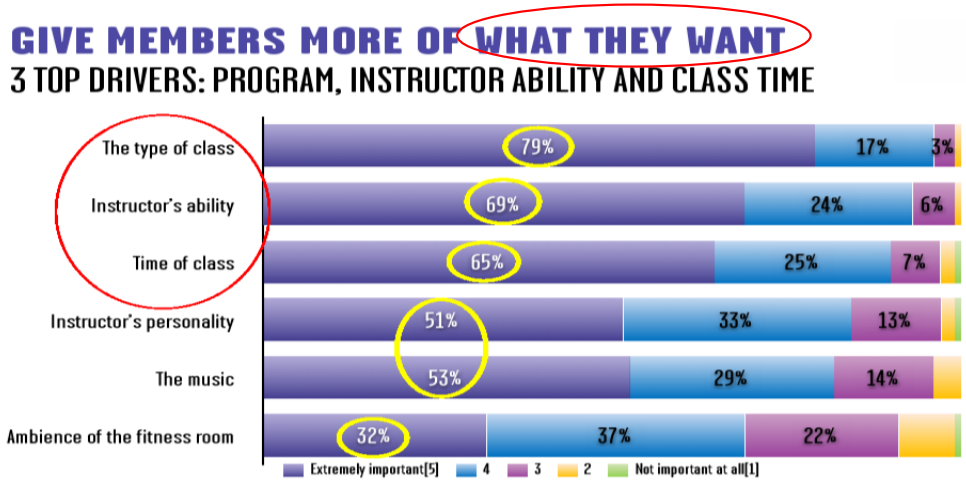
Program-Related Factors

- High levels of adherence are seen with:
  - **Choice of activity**





Program-Related Factors



7. Environmental Factors

- **A convenient location is an important predictor of exercise behavior.**
  - Lower levels of adherence are associated with:
    - **Overcrowded places**
    - **Non convenient location**

Strategies for Enhancing Exercise/PA Participation

Six categories of techniques

Behavior modification approaches

Reinforcement approaches

Cognitive/behavioral approaches

Decision-making approaches

Social-support approaches

Intrinsic approaches

Behavior Modification Approaches

Prompts

Verbal, physical, or symbolic cues that initiate behaviors (e.g., posters, running shoes by bed).

Contracting

Participants enter into a contract with their exercise leader.

Reinforcement Approaches

Charting attendance and participation

Rewards for Attendance and Participation

Rewards improve attendance but must be provided throughout the length of the program.

Reinforcement Approaches

Feedback

Providing feedback to participants on their progress has positive motivational effects.

Self-Monitoring

Participants keep written records of their physical activity.

Cognitive/Behavioral Approaches

Goal setting should be used to motivate individuals.

Exercise-related goals should be

- Self-set rather than instructor-set,
- Flexible rather than fixed, and
- Time based rather than distance based.

Decision-Making Approaches

Involve exercisers in decisions regarding program structure.

Develop Balance Sheets

Completing a decision balance sheet to increase awareness of the costs and benefits of participating in an exercise program can enhance exercise adherence.

A Decision Balance Sheet

GAINS TO SELF (PROS)	LOSSES TO SELF (CONS)
Better physical condition	Less time with hobbies
More energy	
Weight loss	

(continued)

A Decision Balance Sheet

GAINS TO IMPORTANT OTHERS (PROS)	LOSSES TO IMPORTANT OTHERS (CONS)
Get healthier so I can play basketball	Less time with my family
Become more attractive to my spouse	Less time to devote to work

(continued)

A Decision Balance Sheet

APPROVAL OF OTHERS	DISAPPROVAL OF OTHERS
My children would like to see me be more active	My boss thinks it takes time away from work
My spouse would like me to lead healthier lifestyle	

(continued)

Social-Support Approaches

Social Support

An individual's (e.g., spouse's, family member's, friend's) favorable attitude toward another individual's involvement in an exercise program.

Social support can be enhanced by participation in a small group, the use of personalized feedback and the use of a buddy system.

Intrinsic Approaches

- Take a process (task/not result) orientation.
- Engage in purposeful and meaningful physical activity.

Settings for Exercise/PA Interventions

- Work sites
- Home
- Community
- Health care facilities

Settings for Exercise/PA Interventions

Community-based approaches appear to offer the best way of reaching large numbers of people.

Guidelines for Improving Exercise/PA Adherence

- Match the intervention to the participant's stage of change.
- Provide cues for exercises (signs, posters, cartoons).
- Make the exercises enjoyable.
- Tailor the intensity, duration, and frequency of the exercises.

(continued)

Guidelines for Improving Exercise Adherence

- Promote exercising with a group or friend.
- Have participants sign a contract or statement of intent to comply with the exercise program.
- Offer a choice of activities.
- Provide rewards for attendance and participation.
- Give individualized feedback.

(continued)

Guidelines for Improving Exercise Adherence

- Find a convenient place for exercising.
- Have participants reward themselves for achieving certain goals.
- Encourage goals to be a self-set, flexible, and time based (rather than distance based).
- Remind *participants* to focus on environmental cues (not bodily cues) when exercising.

(continued)

Guidelines for Improving Exercise Adherence

- Use small-group discussions.
- Have participants complete a decision balance sheet before starting the exercise program.
- Obtain social support from the participant's spouse, family members, and peers.
- Suggest keeping daily exercise logs.
- Help participants choose purposeful physical activity.

Summary - Reasons for Initiating Exercise Programs

- Improve Health
- Improve Mobility
- Loose/Control Weight
- Improve Appearance
- Increased Energy
- Meeting People

Summary - Reasons for Maintaining Exercise Programs

- Building Self-esteem/Self-efficacy
- Management of Stress or/and Depression
- Enjoyment
- Maintaining Social Relationships
- Maintaining Normal Weight
- Maintaining Good Health

Thank you!

Cost

The cost of participating in physical activity and sport is a major barrier. Particularly to those of lower incomes. The average gym membership is £40 a month, the average cost of joining a sports club is between £40 - £100. These costs don't include any travel costs and buying of necessary equipment and clothing.

Overcoming this barrier:

- Select activities that require minimal facilities/ equipment (walking, jogging, running)
- Choose local community based clubs
- Car share with friends
- Participate in online fitness classes
- Hire equipment rather than purchasing it
- Research different clubs/ gyms to get the best prices
- Discount pricing for NHS/ Armed forces

Access

Sometimes it can be difficult to access a particular sport or physical activity due to geographical reasons for example living in a rural area with fewer clubs and venues. For individuals with limited transportation, resources and limited varieties of activities available this could prevent them from being physically active. Access is also a barrier for individuals who require support to access their chosen activity due to a disability.

Overcoming this barrier:

- Public transport discounts
- Cycle hire to access the facility
- Free parking
- Taster days
- Staff training to support all types of participant
- Increased range of sports and physical activities
- Ramps
- Assistive technology e.g. pool hoist, braille, signage, hearing loops.

Time

One of the biggest reasons for individuals not being active is 'not having enough time'. This could be due to other commitments such as family, school and work.

Overcome this barrier:

- Exercise during lunch breaks
- On-site childcare facilities
- Extended opening hours
- Family gym memberships

Personal

Individuals can have several personal reasons why the chose not to take part in physical activity and sport. These include:

- Poor body image
- Lack of self-confidence
- Parental or guardian influence
- Limited previous participation
- Low fitness levels
- Existing health conditions
- Extended time off from physical activity and sport.

Personal

There are different methods that we can use to help individuals overcome these barriers such as:

- Private changing rooms
- Allowing participants to wear clothes they feel comfortable in
- Using a variety of body shapes within the media and advertisement materials
- Parent and child sessions to create a familial culture of sport
- Campaigns and challenges to increase participation
- Sports clubs/ sessions targeted at specific abilities e.g. back to netball, walking football.

Cultural

Some religions and cultures have laws and expectations which make it more difficult to participate in sport and physical activity. For example:

- Restrictions with women's clothing
- Availability of appropriate clothing to participate
- Specific times for rituals and worship
- Single sex sports or physical activity sessions
- Lack of role models from own cultural background

Cultural

There are different methods we can use to overcome these barriers including:

- Women only physical activity sessions staffed by females
- Production of more appropriate sports clothing
- Staff training in cultural awareness
- Promoting diversity of staff working within the facilities
- Increased opening hours