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WOMEN'S INVOLVEMENT IN STEADY EXERCISE

PILOT ACTIONS DATA REVIEW



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Women's involvement in steady exercise (WISE) promotes active and healthy lifestyles among young women aged 15-24, tackling the gender gap existing in the practice of sport and physical activity and avoiding possible dropouts.

- Exploratory Data Analysis
- Patterns of behavior in life habits
- Possible correlations between self-reported and sensing data
- User engagement analysis

The WISE dataframe



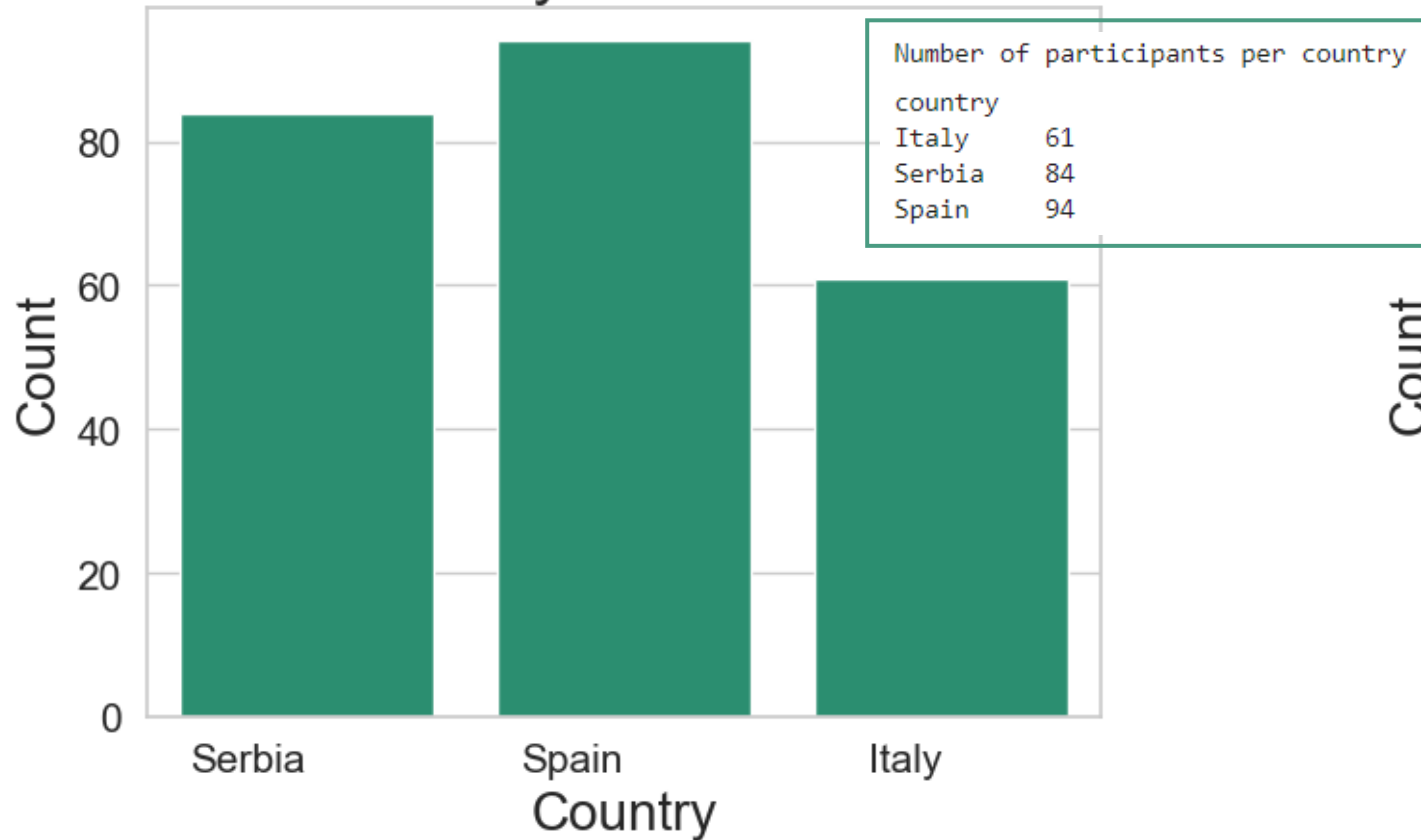
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	id	date	country	steps	hr_min	hr_max	hr_std	hr_avg	sleep	Age	Country	Drop	Exer ₃	Covid	Smoke	Sport	EjerMom	EjerDad	EjerSib	EVAC_T0	EVAC_T
0	37AP	2022-04-01	Italy	4316.0	129.0	129.0	129.0	70.6	7:59	23.0	2.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	10.0	Na
1	37AP	2022-04-01	Italy	4316.0	129.0	129.0	129.0	129.0	7:59	23.0	2.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	10.0	Na
2	37AP	2022-04-01	Italy	4316.0	129.0	129.0	14.4	70.6	7:59	23.0	2.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	10.0	Na
3	37AP	2022-04-01	Italy	4316.0	129.0	129.0	14.4	129.0	7:59	23.0	2.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	10.0	Na
4	37AP	2022-04-01	Italy	4316.0	48.0	129.0	129.0	70.6	7:59	23.0	2.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0	1.0	10.0	Na
...
139189	56VC	2022-04-30	Spain	8064.0	49.0	151.0	17.8	76.5	8:22	20.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	4.0	6.0
139190	56VC	2022-04-30	Spain	8064.0	49.0	151.0	17.8	151.0	8:22	20.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	4.0	6.0
139191	56VC	2022-05-30	Spain	4218.0	NaN	NaN	NaN	NaN	NaN	20.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	4.0	6.0
139192	56VC	2022-03-31	Spain	4676.0	NaN	NaN	NaN	NaN	10:26	20.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	4.0	6.0
139193	56VC	2022-05-31	Spain	9472.0	NaN	NaN	NaN	NaN	NaN	20.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	4.0	6.0

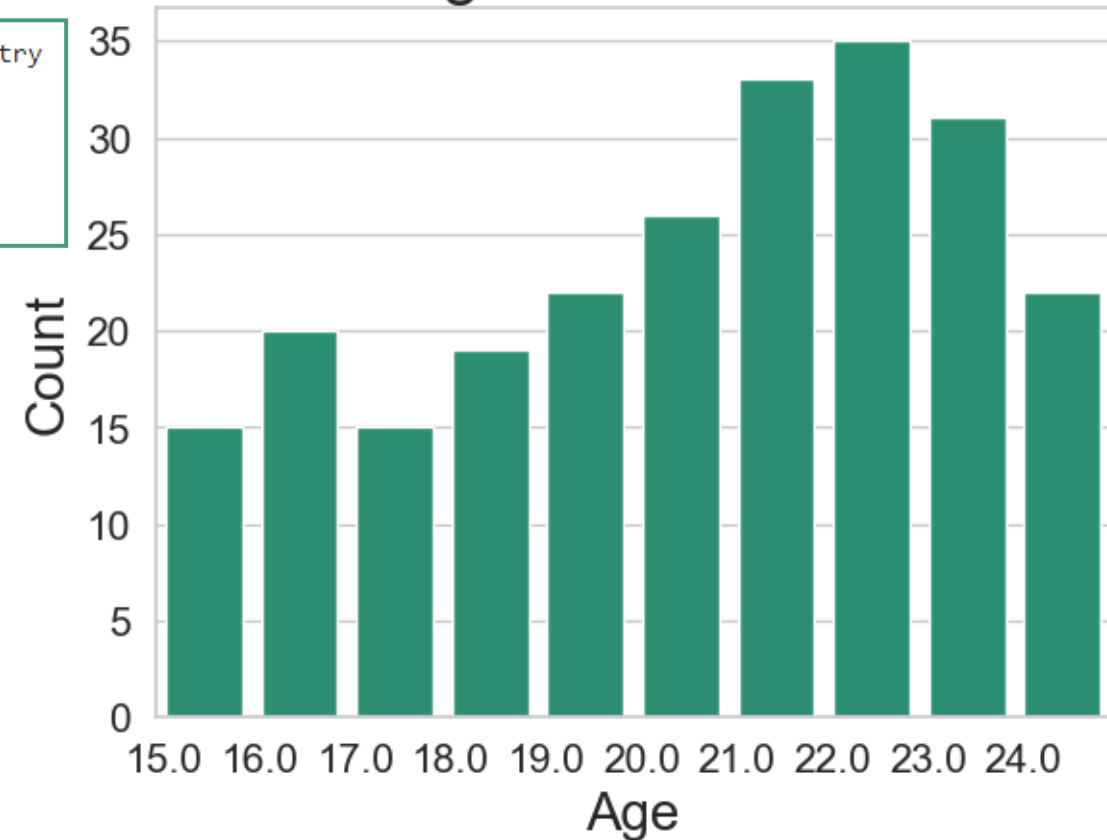
- 139193 rows x 134 columns
- 7 months
- 239 participants

139194 rows x 134 columns

Country Distribution

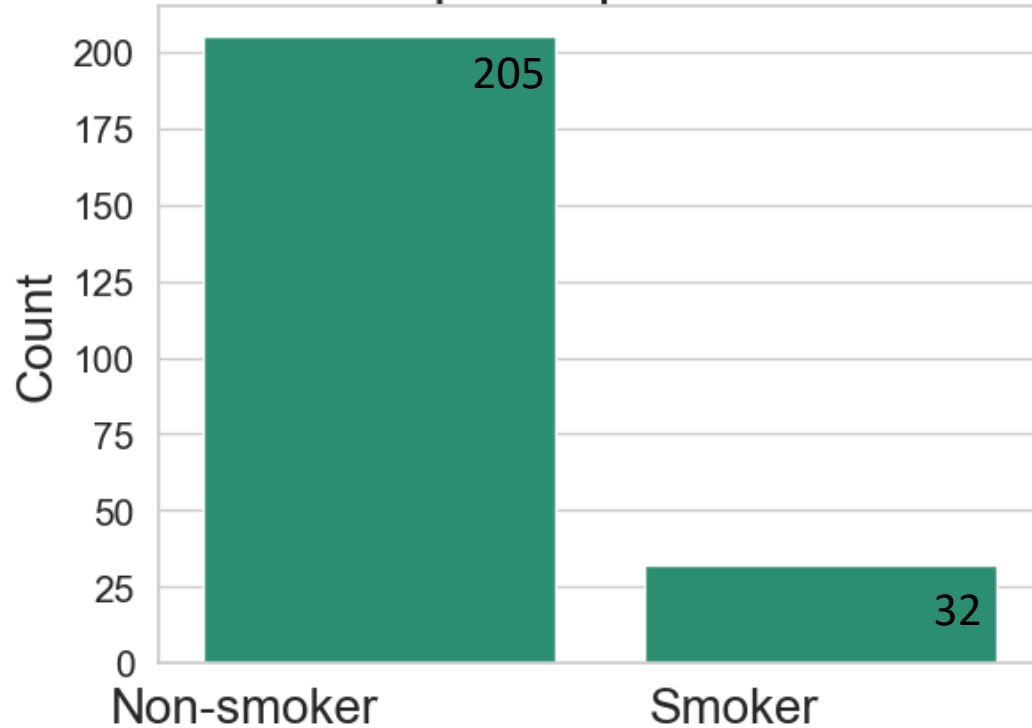


Age Distribution

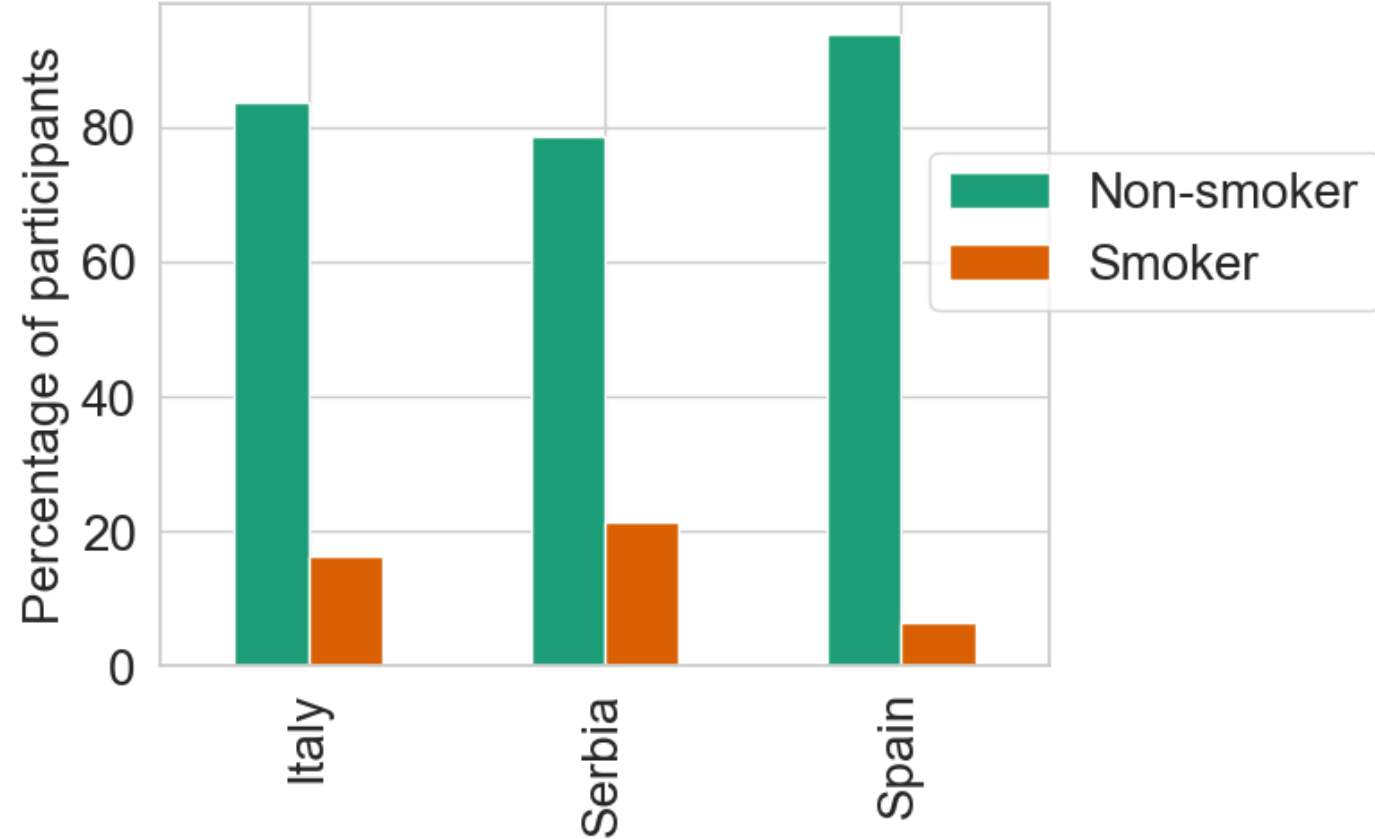


Participants' profiles

Did our participants smoke?

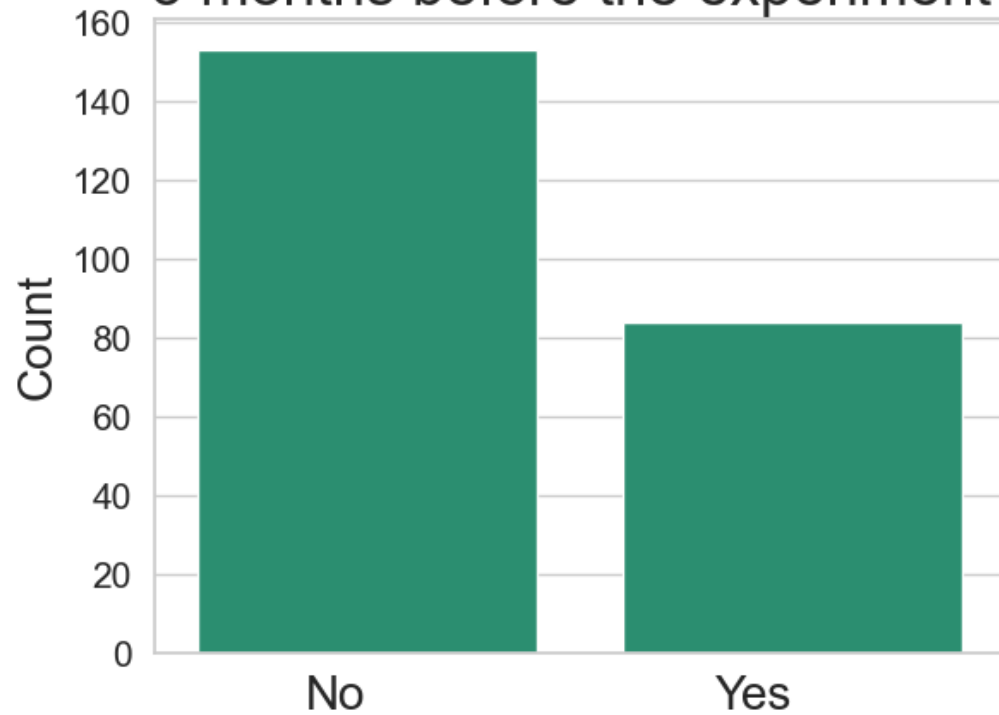


Which country has the fewest/most smokers?

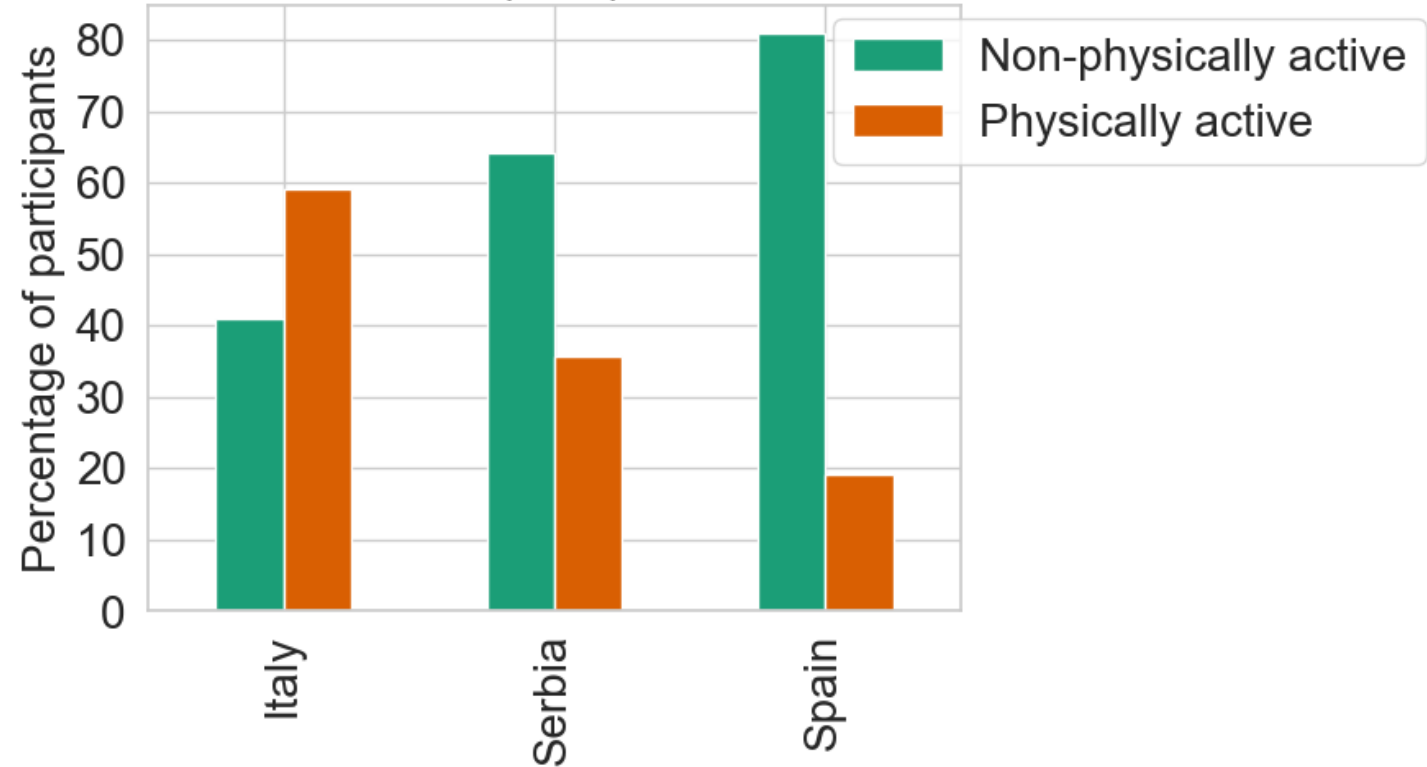


Participants' profiles

Have our participants exercised 3 months before the experiment?

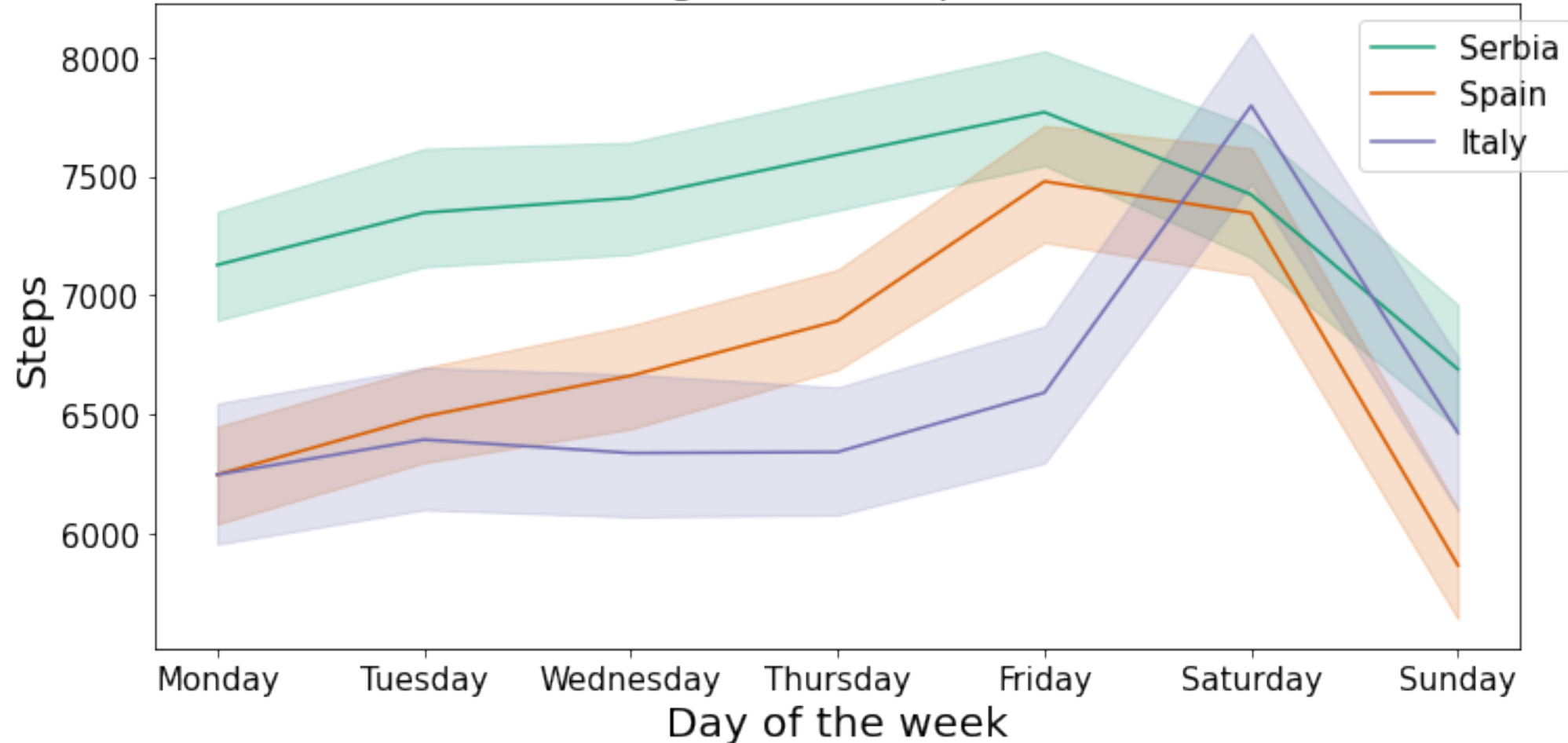


Which country has the most physically active participants?



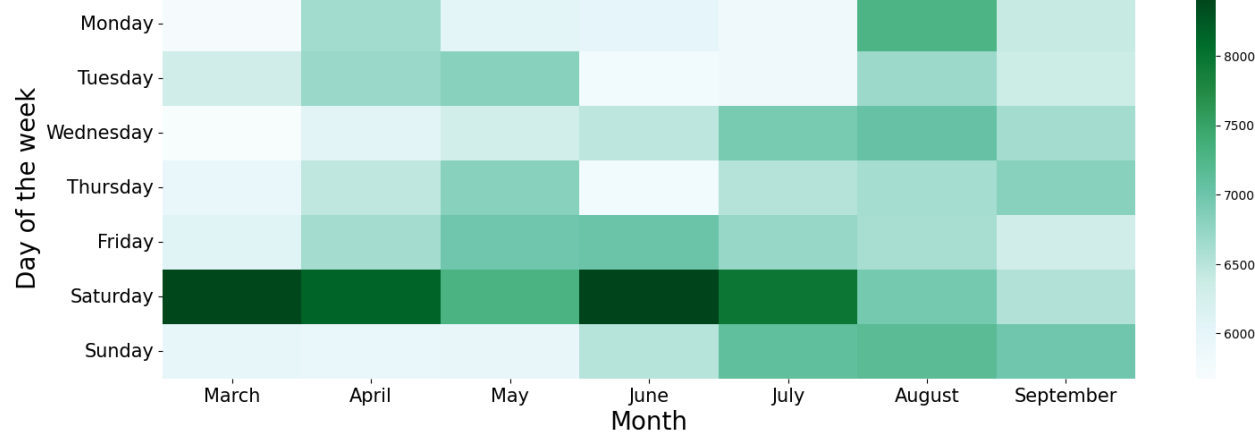
Steps over time

Steps taken for all participants in Serbia, Spain, and Italy throughout the experiment

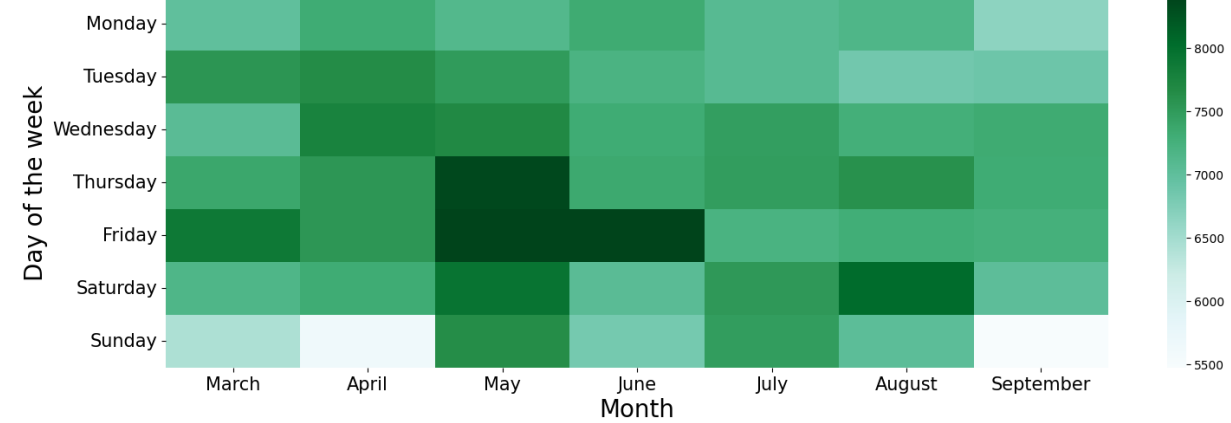


Steps over time

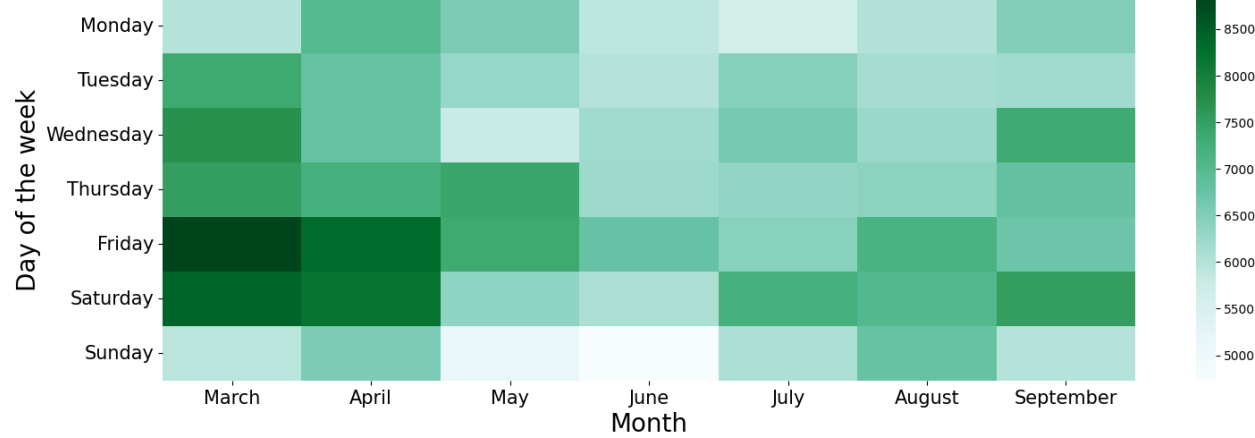
Temporal change in steps (Italy)



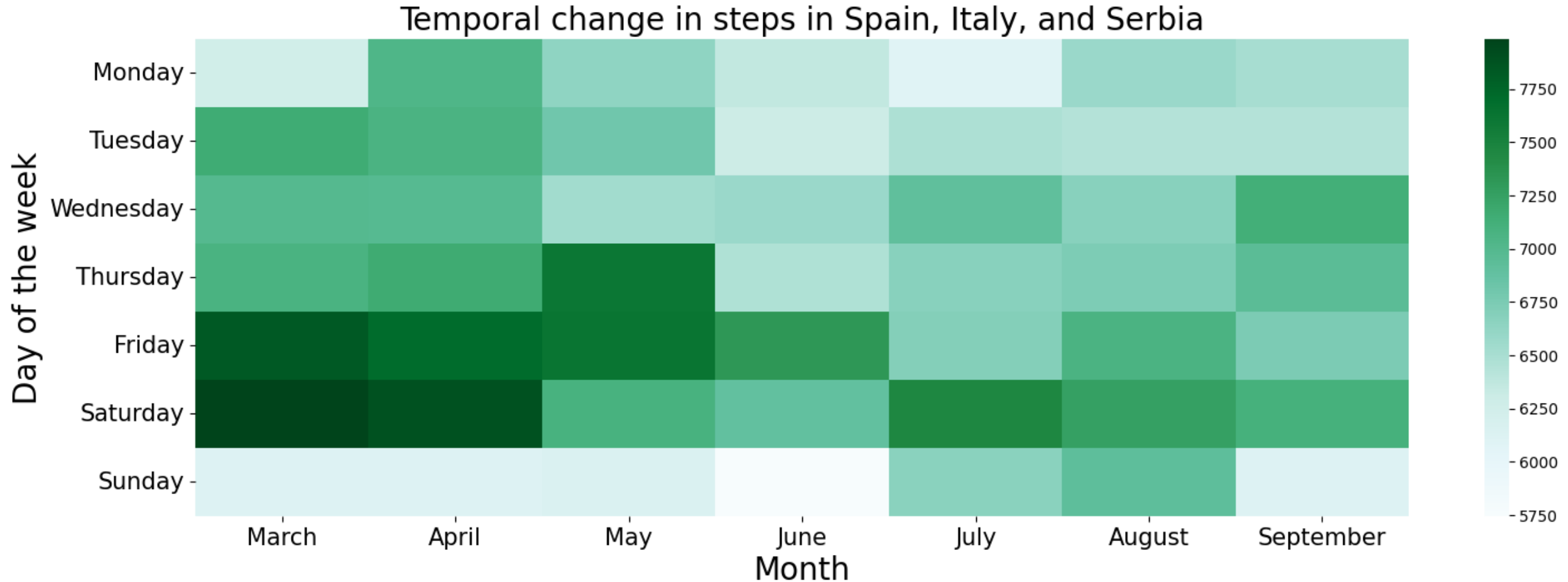
Temporal change in steps (Serbia)



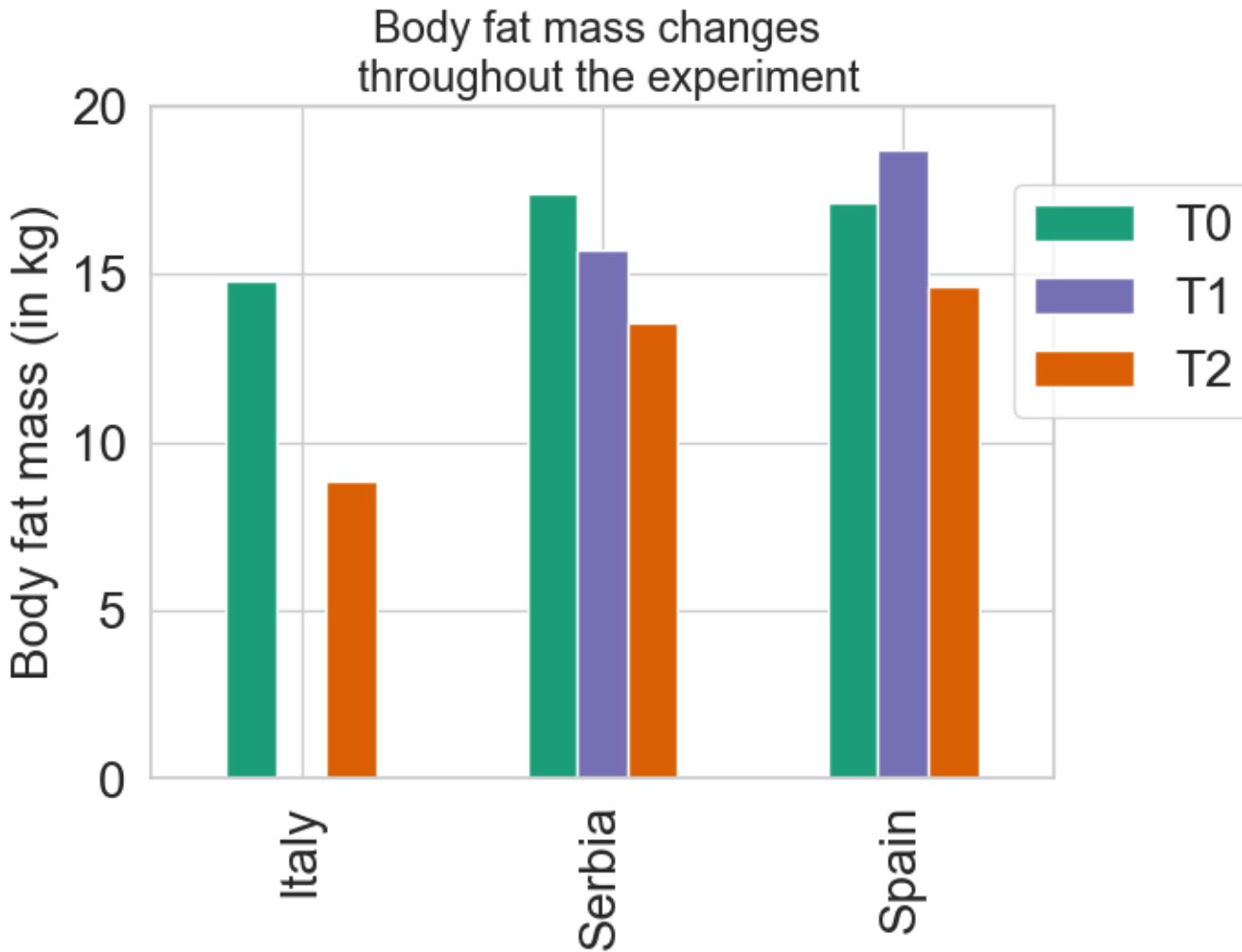
Temporal change in steps (Spain)



Steps over time



Body fat mass change



Italy - Mean Body Fat Mass

T0	14.80
T1	-
T2	8.86

Serbia - Mean Body Fat Mass

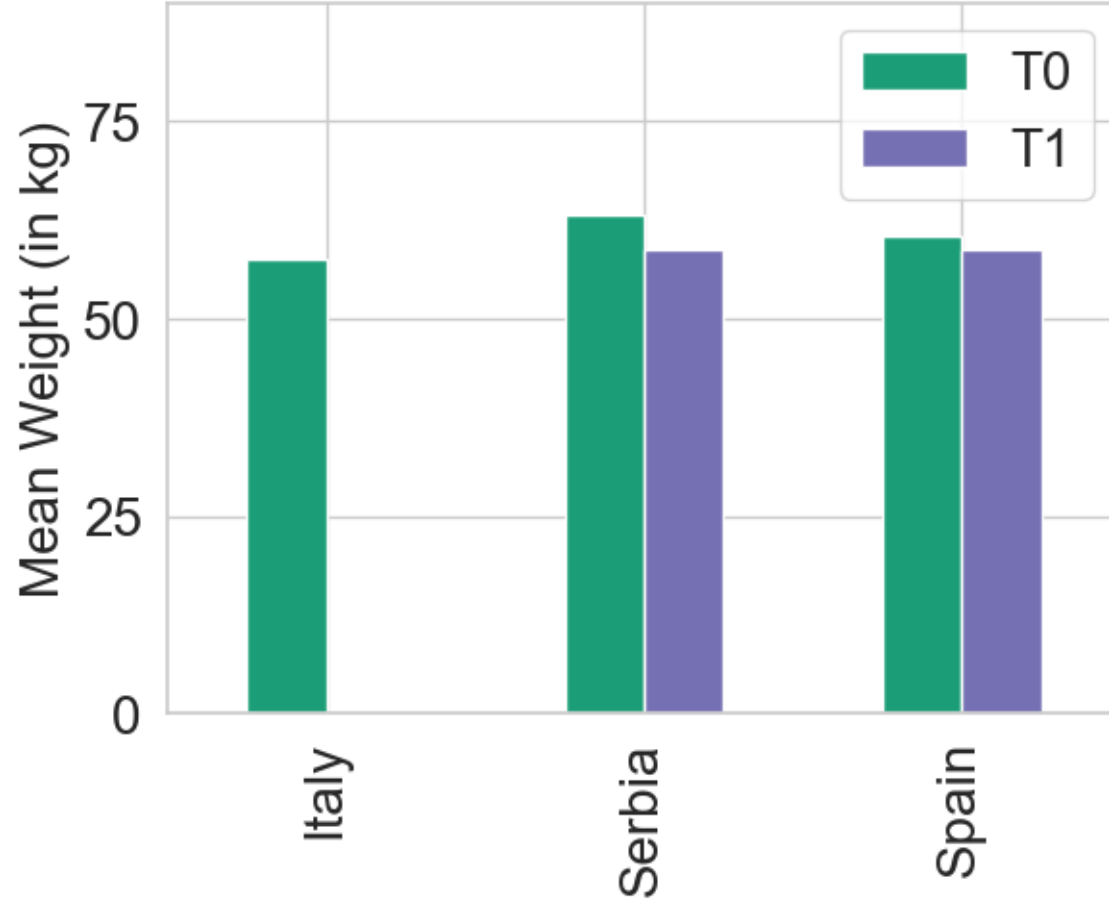
T0	17.42
T1	15.70
T2	13.57

Spain - Mean Body Fat Mass

T0	17.11
T1	18.71
T2	14.63

Weight change

Weight changes throughout the experiment



Italy - Weight

T0	57.57
T1	-

Serbia - Weight

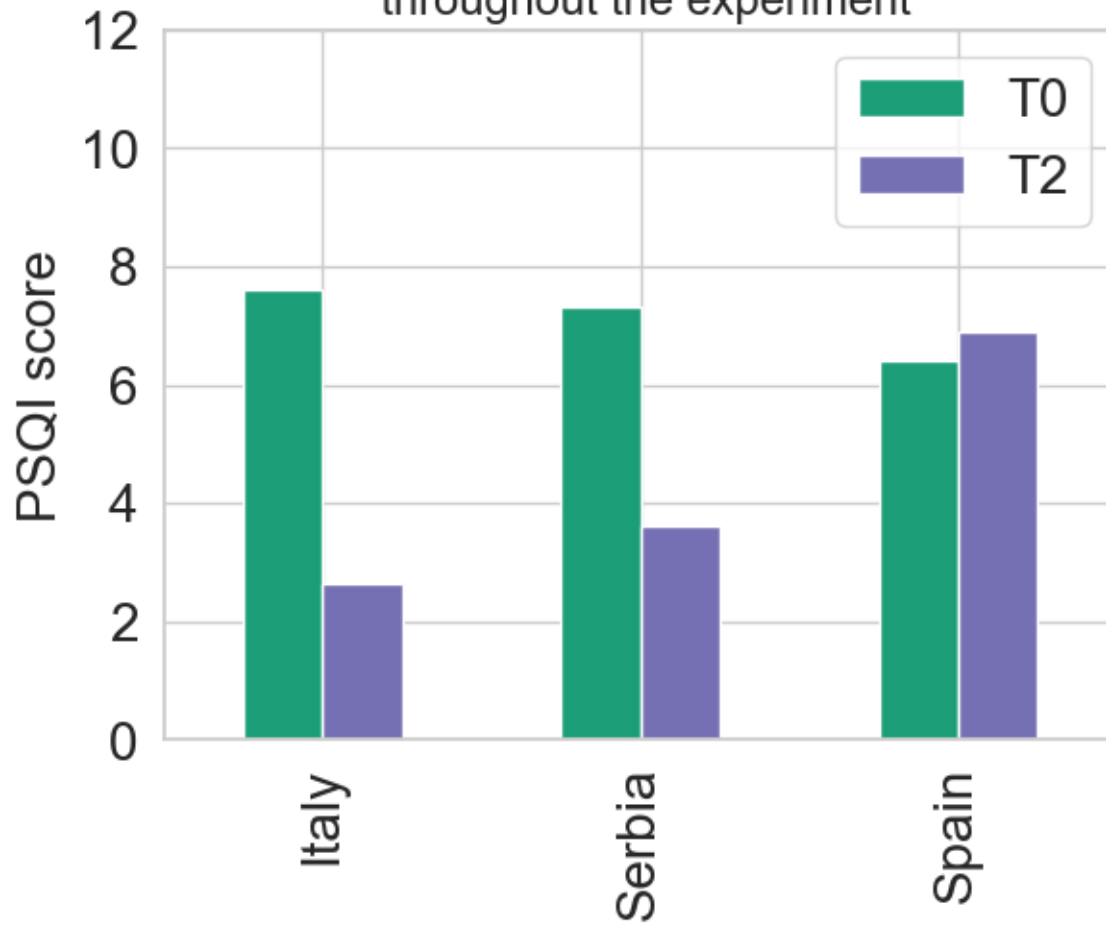
T0	63.08
T1	58.73

Spain - Weight

T0	60.51
T1	58.69

PSQI^[5] score change

PSQI scores changes
throughout the experiment



Italy - PSQIT Score

T0	7.61
T2	2.66

Serbia – PSQIT Score

T0	7.32
T2	3.62

Spain - PSQIT Score

T0	6.41
T2	6.89

[1] Lim, Stephen S., et al. "A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010." *The Lancet* 380.9859 (2012): 2224-2260.

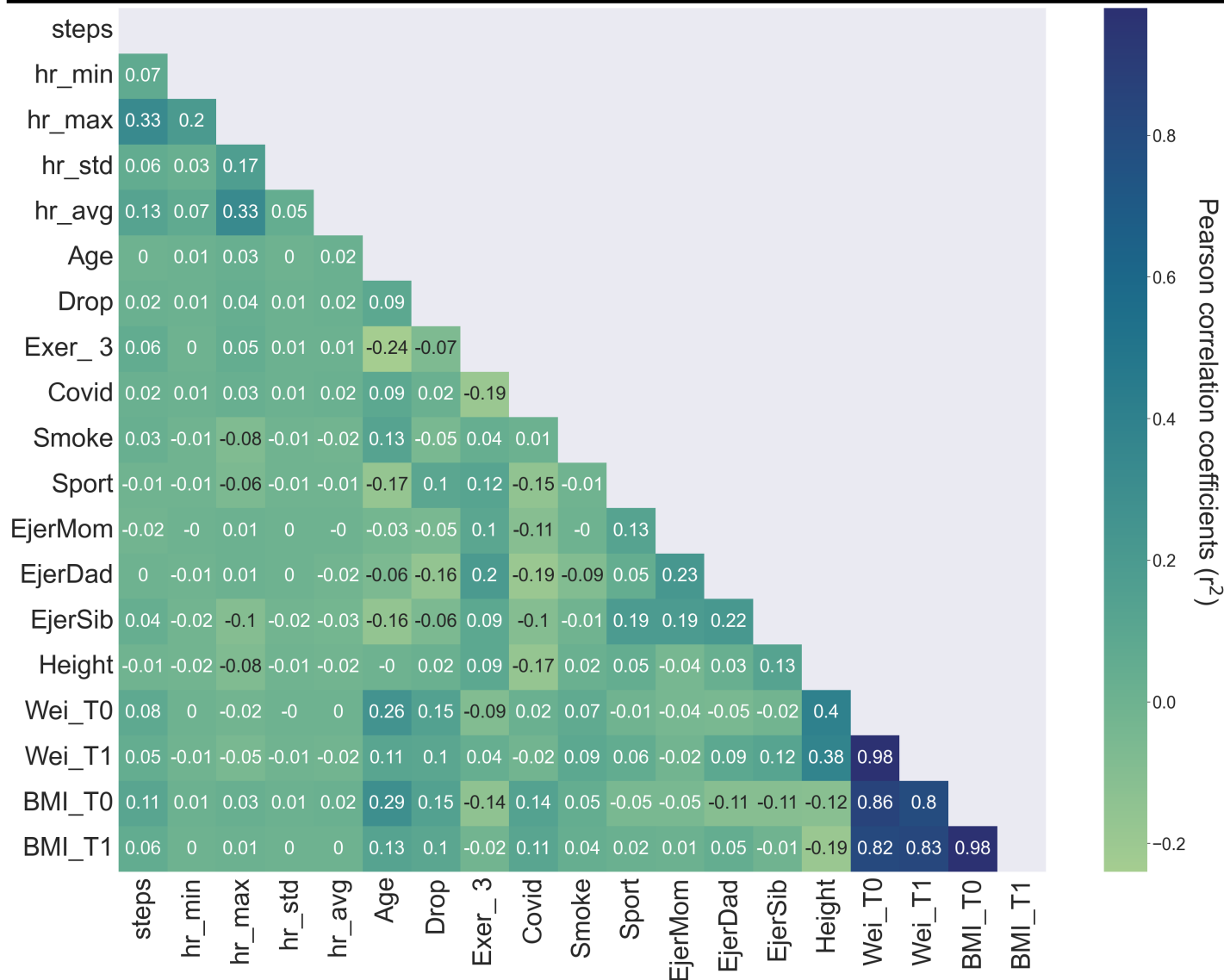
[2] World Health Organization. *Global health risks: mortality and burden of disease attributable to selected major risks*. Geneva: World Health Organization, 2009.

[3] Yu S, Chen Z, Wu X. The Impact of Wearable Devices on Physical Activity for Chronic Disease Patients: Findings from the 2019 Health Information National Trends Survey. *Int J Environ Res Public Health*. 2023 Jan 3;20(1):887. doi: 10.3390/ijerph20010887. PMID: 36613207; PMCID: PMC9820171.

[4] Edwards ES, Sackett SC. Psychosocial Variables Related to Why Women are Less Active than Men and Related Health Implications. *Clin Med Insights Womens Health*. 2016 Jul 4;9(Suppl 1):47-56. doi: 10.4137/CMWH.S34668. PMID: 27398045; PMCID: PMC4933535.

[5] Shahid, Azmeh & Wilkinson, Kate & Marcu, Shai & Shapiro, Colin. (2012). STOP, THAT and one hundred other sleep scales. 10.1007/978-1-4419-9893-4.

Correlation Matrix



Steps over time

Steps taken for all participants in Serbia, Spain, and Italy throughout the experiment

