

# APP USE, PHYSICAL ACTIVITY AND HEALTHY LIFESTYLE: A CROSS-SECTIONAL STUDY

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## Background

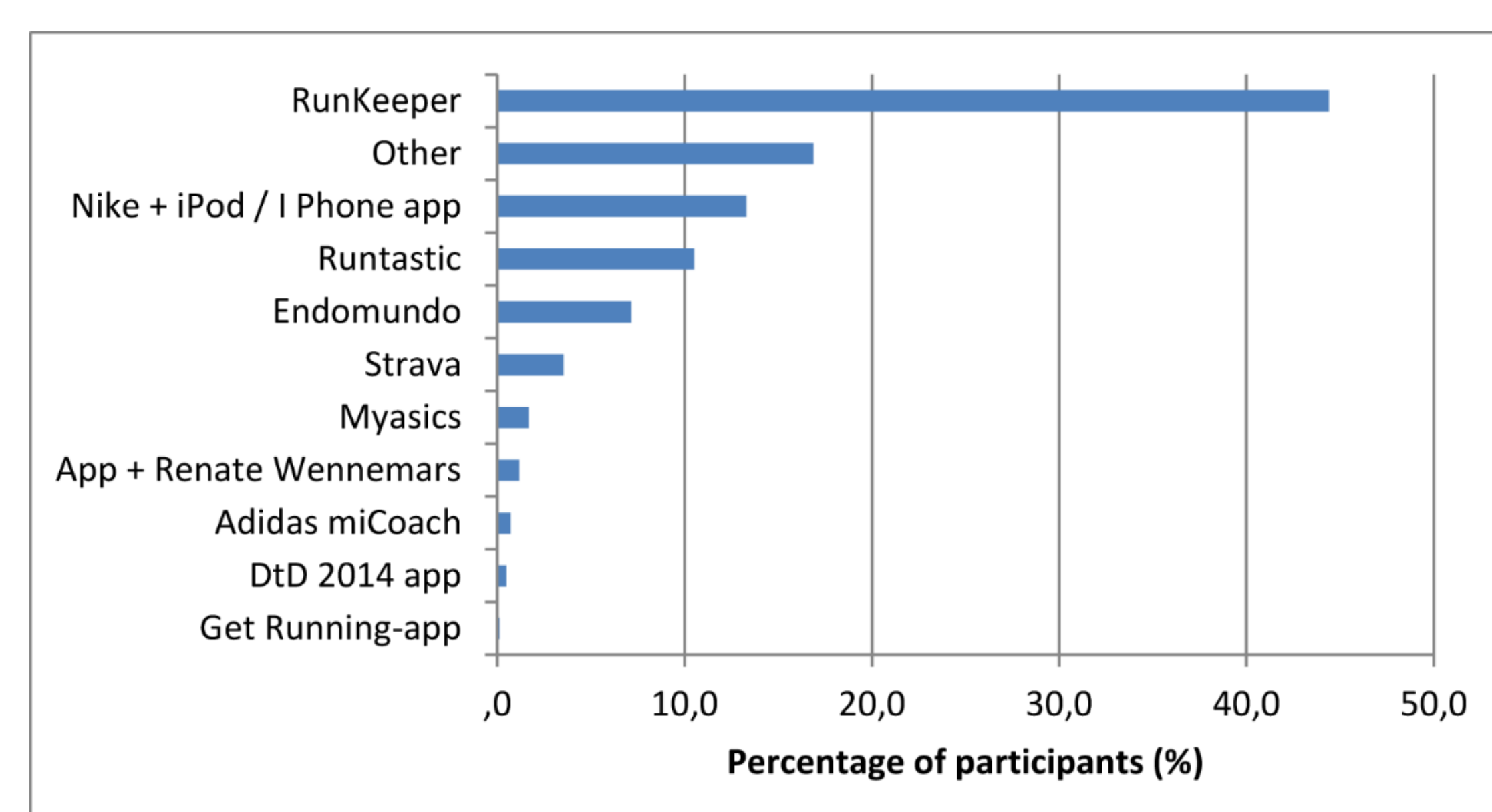
There is need for innovative ways to promote physical activity and a healthy lifestyle. For instance, mobile applications (apps) may be a powerful tool to encourage a healthy lifestyle in the preparation for a running event. However, there is little evidence for the relationship between app use and change in physical activity and health in recreational runners.

## Aim

To determine the relationship between app use and changes in physical activity, health and lifestyle behavior, and self-image of short and long distance runners.

## Methods

15,000 runners (of 54,000 participants) of a 16 and 6.4km recreational run (Dam tot Damloop) in the Netherlands were invited to participate in an online survey two days after the run. Anthropometrics, app use, activity level, preparation for running event, running physical activity (RPA), health and lifestyle, and self-image were addressed. Differences between app users and non-app users were analyzed. Additionally, a multivariate logistic regression analysis was performed to determine if app use could predict RPA, perceived health and lifestyle, and self-image. We controlled for baseline characteristics.



**Figure 1.** Apps used by participants

## Results

Of the 15,000 invited runners, 28% responded. The apps used by runners are shown in **Figure 1**. Some significant differences between app users and non-app users were found; app users were more often female, were significantly younger and trained less often ( $p < 0.05$ ).

Results of the logistic regression analyses are presented in **Table 1**. After controlling for age, gender, BMI, weekly training distance before preparation phase and exercise frequency in last year, significant relationships between apps use and outcome variables were found. The explained variance was highest for RPA (16km: 41% and 6.4km: 38%). For other outcome variables app use explained 2 -10 percent of variance. Detailed results can be found elsewhere.<sup>1</sup>

**Table 1** Significant relationships of app use with changes in RPA, perceived health or lifestyle (n=4307)

|                                   | 16 km |         | 6.4 km |         |
|-----------------------------------|-------|---------|--------|---------|
|                                   | OR    | p-value | OR     | p-value |
| RPA                               | 1.43  | 0.001   | 1.89   | < 0.001 |
| Health                            | 1.59  | <0.0001 | 1.33   | 0.038   |
| Eat healthier                     | 1.24  | 0.022   | 1.24   | 0.150   |
| Feel more energetic               | 1.68  | <0.0001 | 1.13   | 0.055   |
| Chance maintaining sport behavior | 1.24  | 0.021   | 1.31   | 0.067   |
| Feel better about myself          | 1.75  | <0.0001 | 1.84   | <0.0001 |
| Feel more like an athlete         | 1.69  | <0.0001 | 1.67   | <0.001  |
| Did not change lifestyle          | 0.70  | <0.0001 | 0.70   | 0.010   |
| Motivated others                  | 1.43  | <0.0001 | 1.45   | 0.005   |
| Lost weight                       | 1.57  | <0.0001 | 1.72   | <0.0001 |

## Conclusion

These results suggest that use of mobile apps has a beneficial role in the preparation of a running event, as it promotes a healthy lifestyle and physical activity. Further research is now needed to determine a causal relationship between app use and physical and health related behavior. Long-term effects need to be taken into account as well.

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<sup>1</sup> Dallinga JM, Mennes M, Alpay L, Bijwaard H, Baart de la Faille-Deutekom M. BMC Public Health. 2015 Aug 28;15:833. doi: 10.1186/s12889-015-2165-8.