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Angaben zur Veröffentlichung / Publication details:

Holzmann, Caroline, J. Karg, R. Kharbal, Claudia Traidl-Hoffmann, Matthias Reiger, A. Damialis, M. P. Plaza, and Stefanie Gilles. 2024. "V03 Evaluation of the clinical benefit of a pollen and allergy app in Augsburg [Abstract]." *Allergologie* 47 (2): 89.

<https://www.dustri.com/nc/de/deutschsprachige-zeitschriften/mag/allergologie/vol/jahrgang-47-2024/issue/februar-64.html>.

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V03 Evaluation of the clinical benefit of a pollen and allergy app in Augsburg

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Background: Allergy apps may provide advice on how to adapt exposure-related behavior based on symptom diary entries and current pollen information. However, to date, the clinical benefit of such apps has not been demonstrated. **Aim of the study:** To investigate whether the use of an allergy app has a measurable impact on symptoms and/or the disease-related quality of

life of grass pollen allergy sufferers.

Methods: A stratified intervention study was carried out in Augsburg, Germany (+100 km radius) with $n = 168$ grass pollen allergic participants (reported allergic symptoms in the grass pollen season; Phadia ImmunoCAP $g6 \geq 0.35$ kU/L) from 31st May to 31st August 2023. Participants were randomized into 3 groups that used different versions of the same, in-house developed app ("PollDi"). Group A: general information on pollen allergy; Group B: general information and symptom diary; Group C: general information, symptom diary, and pollen forecast. Before and after the intervention period, a miniRQLQ questionnaire was completed. A feedback questionnaire to evaluate the app usage was completed after the intervention period. **Results:** The pollen forecast performed well ($r = 0.723$). Group C had a significantly lower total symptom score than group B ($p = 8.135e-15$). The differences were most pronounced at a pollen load of 3 – 60 pollen grains/ m^3 . Group C reported significantly lower symptoms using the app as compared to an average pollen season ($p = 7.832e-05$, $r = 0.735$). Group B also rated their symptoms less severe after using the app as compared to an average season, but the difference was less pronounced than in Group C ($p = 0.0007553$). **Conclusion:** Our study shows for the first

time that an allergy app with a powerful pollen forecast, a symptom diary and general information on pollen allergies provides a clinical benefit for allergy sufferers.