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Citizen Science for Pandemic Preparedness: preconditions for citizen knowledge development in crises

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Background: Communities and individual citizens play a crucial role in developing and implementing plans for pandemic preparedness. Citizen science can contribute by, e.g., generating data, and supporting policymaking and risk communication. The recent COVID-19 pandemic showed that citizen science was rarely applied. Therefore, we focused on the preconditions needed to effectively engage citizens in pandemic preparedness.

Methods: We conducted exploratory qualitative research consisting of 14 interviews (n = 20) and four workshops (n = 25), in which we created 'citizen journeys' of people taking part in a citizen science initiative. Participants were citizens and professionals working in policy, civic initiatives, practice and science. For analysis, reflexive thematic analysis was used.

Results: Public and professional recognition of citizen science was deemed necessary; during the COVID-19 pandemic the focus tended to lie on scientific expertise. Recognition of citizen science includes increasing citizen science initiatives' visibility, acknowledging societal impact, enabling flexible funding, and fostering a collaboration culture. An accessible infrastructure for knowledge sharing and collaboration was also identified. This includes both a usable data infrastructure and spaces-physical or digital-for connection and exchange. This was illustrated with a citizen science journey of someone who monitors his health with his smartwatch and notices he is infected with disease X. He has a personal data locker that he allows organizations to access for data analysis or collaboration.

Conclusions: By investing in infrastructure and taking the role of citizens in research seriously, citizen science can contribute not only to more effective pandemic preparedness, but also to broader societal resilience in future crises. Citizen science journeys have helped make pandemic preparedness more concrete, facilitated conversations, and generated new ideas.

Key messages:

- To enable citizen science in future pandemics, we must invest in strong social and technological infrastructures now.
- Citizens' research skills are a valuable asset and should be recognized as part of scientific capacity.