Public Health in Practice 2 (2021) 100115

Contents lists available at ScienceDirect

Public Health in Practice

journal homepage: www.journals.elsevier.com/public-health-in-practice

Short Communication

School opening during the SARS-CoV-2 pandemic: Public acceptance of wearing fabric masks in class

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ARTICLE INFO

Keywords:
Masks
COVID-19
Corona
Re-opening
Schools

ABSTRACT

Objectives: Policy decisions regarding mask wearing in schools in times of the SARS-CoV-2 pandemic will likely be made despite a lack of scientific data. Public acceptance is therefore an important indicator to inform the communication activities that accompany the introduction of a new policy. The goal was to assess acceptance and relevant target groups for communication activities.
Study design: Cross-sectional online survey embedded in the regular German COVID-19 monitoring.
Methods: Besides sociodemographic information, trust in institutions, knowledge about COVID-19 and protective behaviors, as well as risk perceptions, we assessed public acceptance of school-related mask policies of parents and non-parents (total N = 957).
Results: In the absence of mandatory mask policies in schools in Germany in August 2020, the general agreement with mask wearing in school was low. Those living in bigger cities or communities – where class sizes are usually larger – agreed more with mask wearing in class; those who felt a greater risk, had greater trust in institutions, or felt higher self-efficacy in fighting the outbreak also wanted children to wear a mask in class. Women were more likely than men to disagree with mask wearing in class. Agreement was highest that policies should uniformly apply for all institutions within a state/province and should not be regulated at the school level or federal/country level.
Conclusions: Implementing mask policies in school will require intense communication. Acceptance of these policies from teachers and pupils should be considered as well. Women seem to be an important target group as they supported mask wearing in class less than men. Women's roles in controlling infectious diseases in school should therefore receive special attention and support.

In the 2020 SARS-CoV-2 pandemic, many countries have closed schools and kindergartens during their lockdowns. Globally children's daycares and schools were reopened after the summer break [1], and as the pandemic resurges in second and third waves, school policies are again in the focus in many countries. Studies aim at identifying the impact of schools in the transmission dynamics. Cancelling or restricting large-scale and long-lasting social gatherings such as closing educational settings have been identified as being among the most effective non-pharmaceutical interventions [2]. Thus, mechanisms of preventing infections in school are crucial, as many countries prioritize leaving schools open as long as possible. Since it became clear that SARS-CoV-2 is transmitted also via infectious aerosols [3], the wearing of fabric masks has been a recommended. For children, the World Health Organization recommends weighing the benefits against potential harms [4], including discomfort, inhibited emotional expression, and impeded communication [5]. Whereas it is not recommended for young children to wear a mask [6], children aged 10 years and older could generally wear a mask, even in class. Moreover, infections fluctuate and often cluster locally. It is an open question whether potential school-related policies should be in place at all – and at which level: at the federal/country, state/province, or even school level.

Policy decisions will be made despite a lack of scientific data [4,7], due to urgency and disease dynamics. Public acceptance is therefore an important indicator to inform the communication activities that accompany the introduction of a new policy [4]. We therefore assessed public acceptance of school-related mask policies within the weekly serial cross-sectional COVID-19 Snapshot Monitoring COSMO, informing the German government and other regulatory bodies during the pandemic

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https://doi.org/10.1016/j.puhip.2021.100115
Received 25 November 2020; Accepted 23 March 2021
Available online 29 March 2021

[8]. University of Erfurt's IRB provided ethical clearance (#20200302/20200501); all participants provided informed consent prior to the data collection.

Fig. 1 shows data from mid-August 2020 for $N = 957$ German participants (online sample, quota-representative for age × gender and federal state in Germany, for details see Ref. [9]). At the time of data collection, children under 6 years of age were exempt from any mask mandate, while adults had to wear masks in public transport and supermarkets. The results show that parents of children over 10 years of age agreed that teachers should wear a mask in class (56%), while only 42% agreed that children should also wear a mask in class. 54% agreed that masks should be worn only on the way to school and in the school building, but not in class (Fig. 1A). Regressing these preferences on demographics and indicators of risk perceptions (Fig. 1B) [9] revealed that those living in bigger cities or communities – where class sizes are usually larger – agreed more with mask wearing in class; those who felt a greater risk (both cognitive and affective risk), had greater trust in institutions, or felt higher self-efficacy in fighting the outbreak also wanted children to wear a mask in class. Women were more likely than men to disagree with mask wearing in class.

Mask wearing by teachers was especially rejected by higher-educated participants; those with higher risk perceptions and trust in institutions favored mask wearing by teachers. Women and those with children over 10 years of age favored mask wearing only on the way to school and in the school building (Tables S2–S6) [9]. Those favoring mandatory mask policies in public also favored masks in schools (for pupils: $r = 0.42$, for teachers: $r = 0.43$, $ps < .001$); there was no relation to wearing mask in the school building, $r = 0$ [9]. Agreement was highest that policies should uniformly apply for all institutions within a state/province and should not be regulated at the school level or federal/country level (Fig. 1C). Parents had a slightly higher preference for school-based regulations than non-parents; however, they also significantly preferred state-level regulation over any other policy.

Participatory approaches to public health are of great importance for the acceptance of political measures [10]. The data show that general agreement with either policy was low, while generally acceptance of masks and actual mask wearing behavior was high in Germany [11]. Implementing either policy in schools will thus require intense communication. Acceptance of these policies from teachers and pupils should be considered as well. Women seem to be an important target group as they supported mask wearing in class less than men. Women's roles in controlling infectious diseases in school should therefore receive special

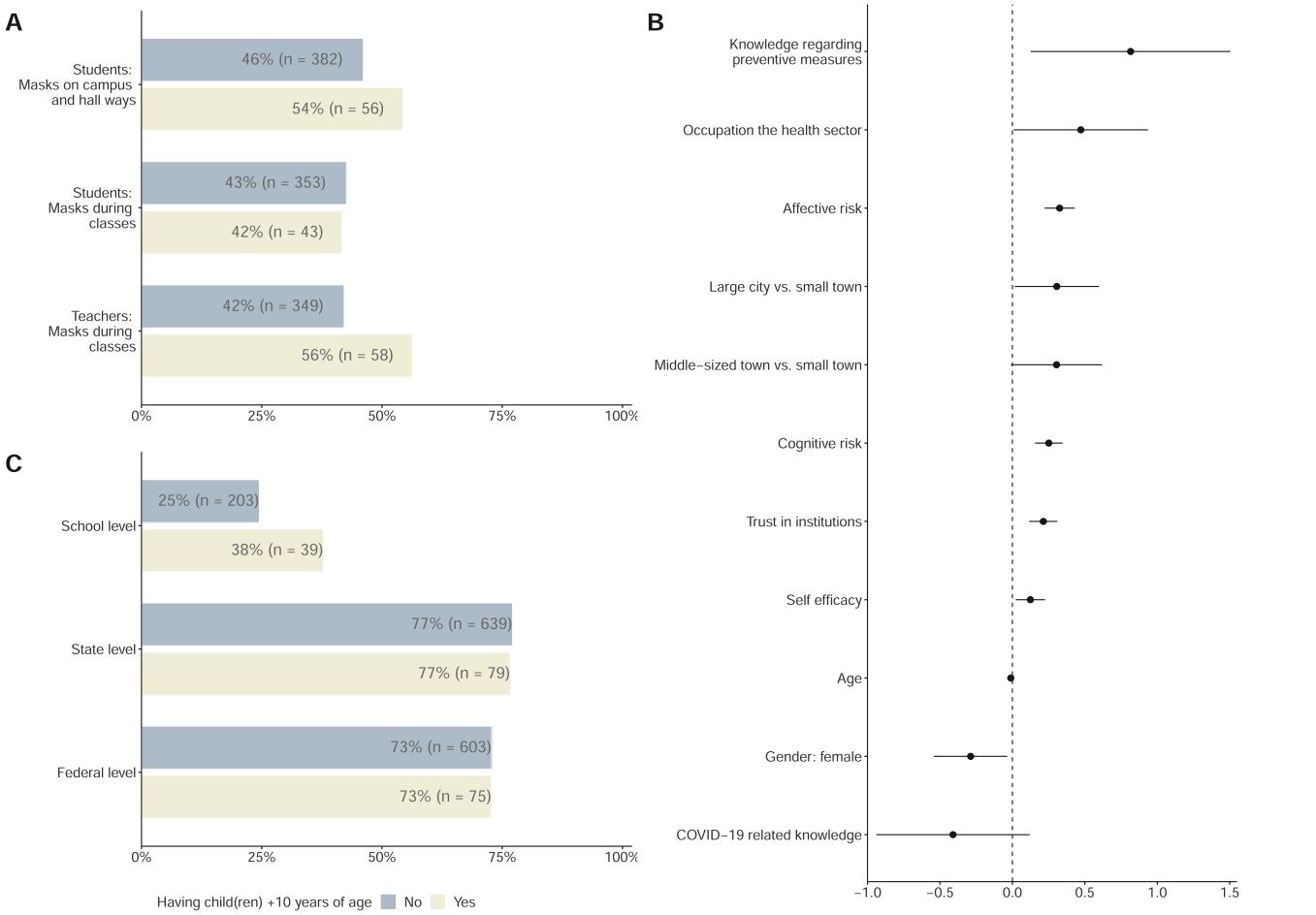

Fig. 1. Public acceptance of different school-related mask policies.
Note: Participants rated each policy and level of regulation. Fig. 1A and C shows the percentage of agreement (ratings of 5–7 on a 7-point scale). Details about all variables and full regression results are given in Table S1 [9]. (A) Parents of children over 10 years of age want teachers to wear masks in school, but not their children. (B) Linear regression with backwards elimination, regressing acceptance of student mask wearing in class on participants' age, gender, education, occupation in the health sector, community size, having a child over 10 years of age (model 1); trust in institutions, trust in media, COVID-19 related knowledge, knowledge regarding protective behaviors, cognitive component of risk (susceptibility), affective component of risk (worry, fear, dominance of the topic), self-efficacy (added in model 2); current mask policy in the participants' federal state, whether school has started (added in model 3). Beta coefficients and their 95% confidence intervals are shown. (C) Policies should uniformly apply for all institutions within a federal state/province and not be regulated at the school or federal/country level. ($M_{federal} = 5.52$, $SD_{federal} = 1.86$, $M_{state} = 5.70$, $SD_{state} = 1.71$, $M_{school} = 3.03$, $SD_{school} = 2.08$; federal/country vs. state/province: $t(956) = -3.85$, $p < .001$, state/province vs. school: $t(956) = 26.26$, $p < .001$). Data collection on 08/15/20 and 08/16/20.

attention and support. Mask wearing in class (except for those with conditions that preclude mask wearing) can enable pedagogical approaches such as teaching in person or group work instead of online learning. Online formats during the pandemic increased inequalities in learning opportunities and can preclude children from necessary social supports. Nevertheless, the costs, benefits, and effectiveness of any policy need to be rigorously evaluated. Besides following hygiene rules and keeping distance, cohort formation and testing given local infections [7, 12], wearing masks in class can contribute to reduce SARS-CoV-2 transmission at school. While mandatory policies can lead to fast behavioral change [11], local or individual adaption may still be needed, e.g. in schools where children have learning or hearing impairments. Fast behavioral change and high uptake is achieved only given high acceptance, which is far from the case. The data presented is a first step in finding ways of improving acceptance and compliance of mask use in schools [4] in Germany – addressing mothers, fostering trust and communicating the risk associated with the disease can be first steps to improve well-targeted communication. The available materials and data analysis script can be blueprints for other countries to support their communication.

Funding

This work was supported by the German Research Foundation, funding number BE3970/11-1; Federal Centre for Health Education, Robert Koch-Institute, Leibniz Centre for Psychological Information and Documentation, University of Erfurt (no funding numbers). The authors alone are responsible for the views expressed in this manuscript and they do not necessarily represent the views, decisions, or policies of the institutions with which they are affiliated.

Author contributions

CB, LF, SE, LK, and HT designed the research; LF, SE and LK performed research; CB and LK planned data analysis; LK analyzed data; CB wrote the initial draft, which was revised and approved by all authors.

Data and materials availability

Materials, data, and analysis code are available at [9].

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

Germany's COVID-19 Snapshot Monitoring (COSMO) is a joint project of the University of Erfurt (Cornelia Betsch [PI], Lars Korn, Philipp Sprengholz, Philipp Schmid, Lisa Felgendreff, Sarah Eitze), the Robert Koch-Institute (RKI; Lothar H. Wieler, Patrick Schmich), the Federal Centre for Health Education (BZgA; Heidrun Thaiss, Freia De Bock), the Leibniz Centre for Psychological Information and Documentation (ZPID; Michael Bosnjak), the Science Media Centre (SMC; Volker Stollorz), the Bernhard Nocht Institute for Tropical Medicine (BNITM; Michael Ramharter), and the Yale Institute for Global Health (Saad Omer). Proofreading: Scribendi.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.puhip.2021.100115.

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