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The Connection Between Smoking & COVID-19 Complications

Publishing inaccurate information and uninformed messaging tactics can wreak havoc on a population; here's what COVID-19 and smoking have to teach us about health behavior during a pandemic

Remember the first months of the COVID-19 pandemic? Scientists around the world were racing to identify factors that were linked to risk of COVID-19. There was a great deal of uncertainty. The haste with which COVID studies were conducted brought to light invalid findings, often as a result of the use of biased samples and flawed analytic procedures. For example, early reports from China on the clinical characteristics of patients admitted to hospital with COVID-19 found that the proportion of smokers was less than expected, based on the national prevalence of smoking. Similar findings from studies from Italy and France suggested that smokers seem to be protected from COVID's dangerous effects. The media picked up this "smokers' paradox", only to find that the science was wrong, and that smoking increased the risk of COVID-19 severity, as shown in subsequent studies including a large-scale study in the U.K.

For health organizations aiming to identify populations at higher risk of COVID, the preliminary findings related to smoking and COVID-19 may have led to incorrect member outreach. For example, health plans relying on data at the time might have overlooked smoking as a relevant risk factor for segmentation, missing out on a big slice of the population that they could have reached in communicating the health risks.

We look at the challenge of navigating the vast, complex, and constantly growing body of scientific research on health behavior through the lens of the COVID-19 pandemic and smoking risks, and identify scalable and valid findings and theories to influence health behavior.

ZOOM IN: THE SMOKER'S PARADOX

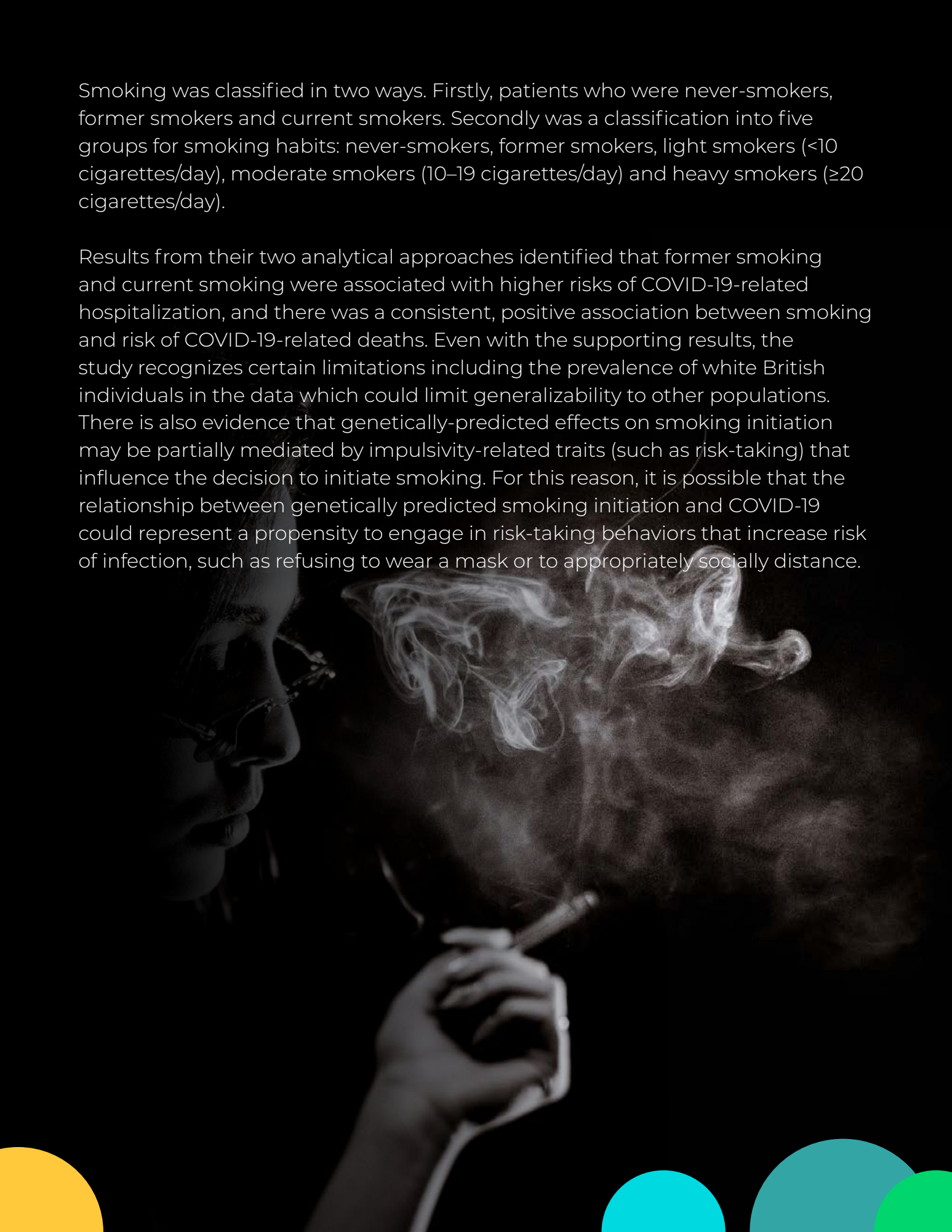
When those early reports filtered out of China, claiming that smokers were protected from COVID, speculation, intrigue and smoker's relief spread quickly. Soon after, Italy and France claimed to record similar results; however, something still did not make sense. Could nicotine be responsible? Is it possible that the one addictive ingredient in cigarettes could actually save lives? Experts in the U.K. were alarmed by such extraordinary claims, and [undertook a separate study] combining conventional observational analyses and MR (Mendelian randomization) using primary care records, UK Biobank questionnaire data, PHE SARS-CoV-2 testing data, hospital admissions data, and death certificates to investigate the association between smoking and COVID-19.

The large-scale British study addressed three core aspects:

- **What is the key question?**
- **Does cigarette smoking increase the risk of developing severe COVID-19?**
- **What are the bottom line results?**

Smoking was classified in two ways. Firstly, patients who were never-smokers, former smokers and current smokers. Secondly was a classification into five groups for smoking habits: never-smokers, former smokers, light smokers (<10 cigarettes/day), moderate smokers (10–19 cigarettes/day) and heavy smokers (≥20 cigarettes/day).

Results from their two analytical approaches identified that former smoking and current smoking were associated with higher risks of COVID-19-related hospitalization, and there was a consistent, positive association between smoking and risk of COVID-19-related deaths. Even with the supporting results, the study recognizes certain limitations including the prevalence of white British individuals in the data which could limit generalizability to other populations. There is also evidence that genetically-predicted effects on smoking initiation may be partially mediated by impulsivity-related traits (such as risk-taking) that influence the decision to initiate smoking. For this reason, it is possible that the relationship between genetically predicted smoking initiation and COVID-19 could represent a propensity to engage in risk-taking behaviors that increase risk of infection, such as refusing to wear a mask or to appropriately socially distance.



ZOOM OUT: THE IMPORTANCE OF HAVING A CLEAR PROCESS

The basis for understanding why a studied approach is so important begins by acknowledging that behavioral scientists can offer a deeper understanding of the scientific process and of the criterion that should be applied when applying models of persuasion and behavior change to populations. Behavioral Science expertise is also important for **identifying the relevant predictors of a specific behavior,** as well as the models and constructs that can be applied to influence that behavior. This process is also critical for evaluating the evidence base and finding the highest quality research to inform the strategic approach for each objective we set out to achieve.

For example, "Sensation Seeking" is a character trait that is defined by the constant search for experiences and feelings that are intense and new, and the willingness to take risks for the sake of those experiences. In such cases, whatever the risk level, it will be either ignored, tolerated or considered part of the excitement. This constant search is a strong determinant for drug use and additional behaviors that carry high-risk levels, which as we saw, was one of the biases related to the UK study on the link between cigarette smoking and the risk of developing severe COVID-19.

There are two controversial campaigns in the U.S. that touch upon 'sensation seeking' traits and highlight the importance of using behavioral science as a basis for outreach: The Montana Meth Project (MMP) and the Children's Healthcare of Atlanta (CHoA) campaign targeting childhood obesity. Both cases illustrate the risks of **relying on what we think should influence a specific health behavior without investigating whether or not the scientific evidence supports that approach.**

WHAT COULD WE DO DIFFERENTLY?
HEALTH INTELLIGENCE

When we look at the haphazard way in which the 'smoker's paradox' was published, without having been peer-reviewed by other scientists pre-publication, we realize the dangers of distributing incorrect information and the impact on health awareness: the probability that smokers were more at risk with COVID-19 was almost removed in one foul sweep, potentially driving further consumption of cigarettes (a study worth looking into during the peak months of the pandemic) and soothing the itch of 'sensation seekers'.

Asking the right questions when approaching a target audience, whether for research or communication purposes, is the backbone of every successful campaign. Instead of asking how many of those hospitalized with COVID were smokers, a more accurate approach would have been to understand how likely smokers were to be hospitalized when compared with non-smokers. How did researchers in China, Italy and France approach the patient-participants: had they already survived COVID-19? Did the smokers die faster than non-smokers? There are many inconsistencies that were left unaddressed. You can read more about those studies in the reference list below.

Using such tactics may be effective for spreading information quickly, but they are particularly dangerous if that information is not sound. Our recent white paper, "Building Persuasive Messaging in Health Plan Communications" talks about information processing models and the ways in which people 'digest' information they are given in very different ways. Humans have a penchant for feeling uncomfortable in the face of uncertainty, but if we integrate behavioral science intelligence, we can speak to those insecurities in a way that works more effectively, especially in times of a health pandemic.

CONCLUSIONS

Beyond the devastating effects of COVID-19, if the “smoker’s paradox” has taught us anything, it is to question everything, just as science does because there is always probability and uncertainty that must be weighed before coming to an understanding. Extraordinary claims must be put to the test with the help of grounded theories and expert-backed human understanding; thankfully we live in an era where we have as many tools as we have excuses to do a better job.

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