# BEHAVIOURAL CONSIDERATIONS FOR PROMOTING SAFE BEHAVIOURS

Policy brief



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Young people and COVID-19: behavioural considerations for promoting safe behaviours. Policy brief

ISBN 978-92-4-002831-9 (electronic version) ISBN 978-92-4-002832-6 (print version)

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Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

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## **ACKNOWLEDGEMENTS**

This policy brief was prepared by the WHO Technical Advisory Group (TAG) on Behavioural Insights and Sciences for Health, with the support of Elena Altieri and Melanie Kim from the TAG Secretariat. The TAG members included: Maria Augusta Carrasco, Behavioral Scientist and Adjunct Professor, United States Agency for International Development, Washington, District of Columbia (DC), United States of America (USA); Tim Chadborn, Head of Behavioural Insights and Evaluation Lead, Public Health England, London, United Kingdom of Great Britain and Northern Ireland; Varun Gauri, former co-Head, Mind Behavior and Development Unit, World Bank, Washington, DC, USA; Gavin George, Programme Leader, Health Economics and HIV and AIDS Research Division, University of KwaZulu-Natal, Durban, South Africa; Ross Gordon, Queensland University of Technology, Brisbane, Australia and President of the Australian Association of Social Marketing; David Houeto, Associate Professor in Health Promotion and Social Determinants of Health, School of Public Health, University of Parakou, Benin; Ruth Kutalek, Associate Professor, Department of Social and Preventive Medicine, Center for Public Health, Medical University of Vienna, Vienna, Austria; Glenn Laverack, former Director of Health Promotion, University of Auckland, New Zealand and Visiting Professor, Department of Sociology and Social Research, University of Trento, Italy; Fadi Makki, Founder and President, Nudge Lebanon, Beirut, Lebanon and Head, B4Development, Doha, Qatar; Ammaarah Martinus, Director of Policy, Research and Analysis, Western Cape Government, South Africa; Shahinaz Ibrahim Mekheimar, former Head, Public Health Department, Theodor Bilharz Research Institute, Giza, Egypt; Susan Michie, Professor of Health Psychology and Director, Centre for Behaviour Change, University College London and Co-Director, Behavioural Science Policy Research Unit, National Institute for Health Research, London, United Kingdom; Iveta Nagyova, Head, Department of Social and Behavioural Medicine, Pavol Jozef Safarik University, Kosice, Slovakia and President of the European Public Health Association; Saad Omer, Inaugural Director of the Yale Institute for Global Health and Professor, Medicine and Epidemiology, Yale School of Medicine, Yale University, New Haven, Connecticut, USA; Rajiv Rimal, Chair of the Department of Health, Behaviour and Society, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA; Jana Smith, Managing Director, ideas 42, New York, USA; Cass Sunstein, Robert Walmsley University Professor, Harvard University, Cambridge, Massachusetts, USA (Chairperson); Beena E. Thomas, former Deputy Director, Department of Social and Behavioural Research, National Institute for Research in Tuberculosis, Chennai, India; Chiara Varazzani, Lead Behavioural Scientist at the Organisation for Economic Cooperation and Development (OECD), Paris, France; Archna Vyas, Deputy Director for Communications, India Country Office of the Bill & Melinda Gates Foundation, New Delhi, India; and Joyce Wamoyi, Senior Social and Behavioural Research Scientist, National Institute for Medical Research, Mwanza, United Republic of Tanzania.

Ariane De Lannoy (University of Cape Town, South Africa), Danielle Jansen (University Medical Center Groningen, Netherlands) and Ingrid Volker (University of Melbourne, Australia) contributed as temporary technical advisers to the TAG.

Special thanks are due to the American Psychological Association and its members (especially Amanda Clinton, Lynne Cooper, Baruch Fischhoff, Ellen Garrison and Valerie Reyna), as well as to the Johns Hopkins University Center for Communication Programs (especially Susan Krenn and Rajiv Rimal).

The following staff and consultants of the World Health Organization (WHO) also contributed to the policy brief: Elsie Akwara, Venkatraman Chandra-Mouli, Sarah Elaraby, Nina Gobat, Katrine Bach Habersaat, Marina Plesons, Lucia Robson and Martha Scherzer.

Thanks are also due to the members of the Global Youth Mobilization for their support, especially Tharindra Arumapperuma (elected representative for South Asia), Michelle Chew (elected representative for Asia Pacific), Helga Mutasingwa (elected representative for Africa), Daisy Moran (elected representative for the Americas) and Hana Pasic (Global Youth Mobilization Secretariat, Global).

## EXECUTIVE SUMMARY

In the context of the COVID-19 pandemic response, WHO identifies young people as a priority target audience with specific concerns, experiences and behaviours. With behavioural evidence from COVID-19 still emerging, evidence was sought from other health domains to improve understanding of risk-taking behaviours of young people. The aim of this policy brief is to provide relevant insights from behavioural evidence and a set of behavioural considerations for those designing initiatives promoting COVID-19 preventive behaviours among young people.

A rapid and non-systematic review of evidence was conducted to examine whether young people – broadly defined in the review as individuals ranging from 15 to 30 years of age – are sufficiently different from older age groups in their perception of risk and decision-making to warrant tailored approaches. The review concluded that by the mid-teen years, young people's cognitive decision-making processes are similar to those of adults in many ways; however, some behavioural factors that influence risky or unsafe behaviours are particularly relevant to young people.

Programme managers may find it helpful to refer to the youth-specific barriers and drivers identified in this policy brief and to consider prioritizing these for testing when designing initiatives targeted at young people. On the basis of the evidence available, this policy brief suggests that knowledge-based efforts might not be sufficient to influence the behaviours of young people, and that programme managers would probably increase the success of youth-targeted initiatives by addressing, in their respective contexts, how to:

- create an enabling environment;
- establish positive social norms in peer groups;
- promote feelings of empathy and prosocial motivation;
- engage young people in communicating risk-prevention messages;
- build young people's confidence in their ability to act and to protect themselves from risks; and
- facilitate safe social connections to reduce negative impacts on mental health.

## 1. INTRODUCTION

The COVID-19 pandemic has disrupted the lives of millions of young people around the world. Stay-at-home policies, restrictions on social gatherings, closures of schools, universities and businesses, physical distancing and other measures slow the spread of the virus, but have far-ranging consequences for young people who are going through a phase of exploratory learning and growth. As young people struggle to meet their needs for social connection, fear of loneliness and social isolation can potentially drive COVID-19 risk-taking behaviours (1, 2). For example, preliminary evidence suggests that, compared with the general population, young people might be at greater risk of developing fears related to the COVID-19 pandemic (3) and of suffering the negative effects of social isolation and loneliness, which are the consequences of social distancing. (2, 4).

Additionally, across all regions and income levels, young people who work have been hit particularly hard by the crisis, experiencing greater unemployment and loss of income (5), while those who are studying or learning have been negatively affected by poor or non-existent digital delivery (6). Young people have also reported greater levels of stress, anxiety and depression than other segments of the population (7, 8).

In the context of the COVID-19 pandemic, WHO identifies youth as a priority target audience, with a range of specific needs, concerns, experiences and behaviours. To align with some of WHO's upcoming COVID-19 youth initiatives (e.g. the Global Youth Mobilization) this document broadly defines "young people" as those aged between 15 and 30 years. This wide age range – encompassing different stages of development, from adolescence to emerging and young adulthood – was selected to ensure that findings can be relevant to a large number of organizations working with young people.

Risk-taking behaviours such as not wearing masks or not respecting physical distances increase potential exposure to the disease. Evidence on risk-taking behaviours in other health domains was considered for this policy brief, to explore what behavioural drivers may be relevant for young people in relation to COVID-19. A rapid review of evidence was conducted by the American Psychological Association (70); it concluded that while, by the mid-teen years, the cognitive decision-making processes are similar to those of adults, there are also several behavioural factors of particular relevance to young people. In the summary of these findings, it is emphasized that the diversity within the wide age range considered may warrant tailored approaches for specific age subgroups.

Although the review intentionally sought geographical diversity of studies, most of the published evidence addressing the specific questions of the review came from studies conducted in high-income settings. Whenever possible, studies with global samples or those conducted in low- and middle-income settings were prioritized. The evidence gathered was discussed and contextualized to different regions and settings during two consultations held in February 2021 that involved TAG members and temporary advisers from 16 different countries, WHO experts and representatives of young people from four WHO regions listed in the Acknowledgements. More details on these consultations, including the assessment of conflicts of interest, can be found in the Annex.

<sup>1</sup>This age range differs from WHO's definition of young people as those aged 10–24 years (9). More generally, the different sources of literature cited throughout the document group "young people" differently, while falling within the 15–30 age range.

## 2. UNDERSTANDING RISK-TAKING BY YOUNG PEOPLE

The period between the ages of 15 and 30 years is critical for human development. During these years, young people seek ways to meet their physical and emotional needs, and to build the competencies necessary for their growth and development. Risk-taking can be seen as a rite of passage that encourages young people to exercise their agency and find their boundaries, and it can play a positive role in the development of identity in a social context (11).

Although some behaviours (e.g. driving without a seat belt) are objectively risky and only science can establish the actual magnitude of risk, risk perception is a subjective construct that can be influenced or distorted by biases and heuristics (12, 13). Many interventions targeted at young people aim to increase awareness of health risks through communications-based efforts, but often the main problem is not a simple lack of information or awareness (14). In fact, risk-taking behaviours are driven by multiple factors, such as motivation, emotion and the social and physical environment (including socioeconomic and family circumstances).

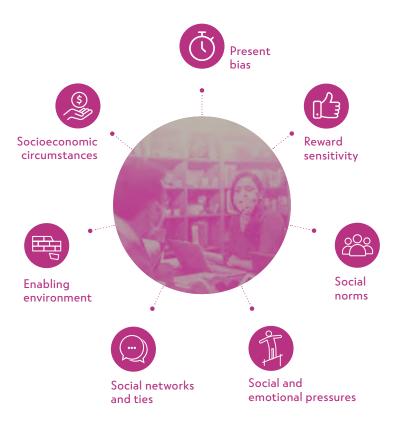
2.1
WHAT
INFLUENCES
THE
BEHAVIOURS
OF YOUNG
PEOPLE?

Although cognitive decision-making processes in young people were found to be similar to those of adults in many ways, several youth-relevant drivers of behaviours have been identified (Fig. 1).

- Young people tend to be more attentive to the short-term consequences of their decisions than to the long-term ones (15).
   This tendency ("present bias") makes it difficult to discourage young people from taking risks when the immediate benefits of doing so are salient whereas the adverse consequences (e.g. illness or disability) are delayed in time.
- Particularly in their adolescent years, young people tend to be sensitive to rewards (16, 17). This is particularly true for social rewards derived from socializing with peers and acting in ways that create a favourable impression with their friends.
- In situations that are emotional or arousing, young people up until their mid-2Os are likely to have difficulty exercising self-control (18,19). Despite being no worse than adults at perceiving risks, young people tend to be influenced by social and emotional pressures that lead them to act against their own better judgement and to take more risks (2O).

- Young people are particularly influenced by "social norms" emanating from their peers (21, 22). "Social norms" are beliefs about how others behave and about what they approve and disapprove. These beliefs influence risk-taking (23, 24). In addition, young people's confidence in their ability to act, also known as self-efficacy, is particularly influenced by social norms and emotions sparked by social interactions (25, 26).
- Social networks and the ties within them (e.g. with peers, family members and other role models) are important influences on the behaviours of young people (27, 28). Emerging literature suggests that online social peer networks are major sources of health information (and of misinformation) and significantly affect young people's health risk behaviours (29, 30).
- Adoption of safe behaviours by young people depends on physical and social opportunities and barriers in the environment. Environments facilitate certain behaviours and constrain others; for example, easy and free access to condoms can increase the likelihood of safer sex (31). However, even when an enabling environment is available, other barriers (e.g. embarrassment, stigma or concerns about being judged) can interfere with desired behaviour (32).
- Socioeconomic circumstances can be a strong influence on young people's risk-taking and decision-making. Scarcity of resources (e.g. time, money, or family and social support) can influence cognitive ability, resulting in poorer decisions about one's own health and welfare (33). Economic hardship and low levels of social capital have been linked with higher levels of risk-taking behaviour among young people (34, 35).

Fig. 1. Factors influencing the behaviours of young people



## WHAT STRATEGIES HAVE BEEN USED TO ADDRESS RISK-TAKING BY YOUNG PEOPLE?

Because risky behaviours can lead to negative and long-term consequences, many interventions and policies have tried to curb risk-taking in young people. Although education and communication are important for increasing awareness of health risks, often the main problem is not a simple lack of information or awareness (14). The following examples of behavioural strategies used to address risk-taking in other health domains can provide insights useful for the COVID-19 response.

- Creating an environment where the safe behaviour is easy or the unsafe behaviour is difficult to undertake. For example, in HIV programmes, providing free access to condoms and testing for HIV has led to significant reductions in sexually transmitted infections (31). Likewise, tailored support for young people delivered in a youth-friendly and non-judgmental manner has led to greater uptake of safe sex behaviours (36).
- Communicating information about social norms to shift perception in favour of safer behaviours. Young people can overestimate how often peers engage in risk-taking; correcting this misperception of norms can influence their behaviour. For example, interventions designed to inform youth that their peers' actual use of alcohol was lower than they thought led to reductions in alcohol intake (37).
- Framing messaging to convey the "gist" or the general meaning of the risk information. Phrases such as "it only takes one instance of reckless driving" exemplify gist-based thinking and some studies indicate that they are more effective than providing descriptions of risk probabilities and outcomes (38). Interventions that primarily focus on providing descriptions of risk probabilities and outcomes without explaining how these connect to background knowledge, mental models and cultural values are likely to be less effective (39, 40).
- Building young people's confidence in their ability to act (i.e. their self-efficacy) to protect themselves from risks. A review of sexual reproductive health and HIV education programmes for young people found that skills-based programmes particularly those that make gender-specific considerations (e.g. on decision-making and resistance to social pressure) were consistently more effective at changing behaviour than programmes based solely on addressing knowledge gaps (41).
- Leveraging trusted sources including peers and adults to communicate risk information. Peer-led interventions have shown promise because peer educators are seen as credible sources of information and can deliver education and support in a more accessible way (42, 43). For example, training influential students to communicate smoking prevention messages to their friends as part of usual social interactions reduced smoking behaviours (44).

## 3. COVID-19 PREVENTIVE BEHAVIOURS AND YOUNG PEOPLE

In relation to COVID-19, risk-taking behaviours are those that increase potential exposure to the virus; such risks can be addressed by adopting behaviours recommended by WHO and those recommended specifically by local authorities. Adopting and sustaining preventive behaviours requires the population at large, including young people, to change their habits in public, to create new routines or to learn new skills. Such skills might include always remembering to carry a mask and to wear it when appropriate; learning how to wear or clean the mask; or learning how to estimate physical distance and how to maintain it when performing daily activities, or how to improve ventilation of indoor spaces.

Both traditional and social media have reported a lack of adherence to behaviours aimed at reducing the risk of transmission of COVID-19 among young people. A recent multicountry survey reported lower adherence to COVID-19 preventive measures among young people than among older people; it also indicated that adherence to preventive behaviours decreased over time, particularly among young men (45, 46). The same survey revealed that although young people are slightly less likely than adults to believe that COVID-19 would be severe for them, on average, their perceptions of community severity were higher. Community severity is a person's concerns of the severity of health consequences for their community. These same findings are also supported by another multicountry survey (47), suggesting that prosocial concerns might motivate young people to adhere to COVID-19 preventive behaviours.

To reduce COVID-19 risk-taking behaviours among young people, it is necessary to identify the barriers and enablers that operate within this group. Table 1 summarizes barriers and enablers contextualized to COVID-19, with examples from the emerging literature. Although the factors and examples are relevant to young people based on the behavioural factors identified in section 2.1 – and are therefore important for the design of youth-targeted strategies – the same factors may also be relevant for other age groups.

Table 1. Examples of youth-relevant behavioural factors

Youth-relevant behavioural factor	Barriers that might discourage the target behaviour	Enablers that might encourage the target behaviour
Present bias	Immediate negative consequences such as peer rejection (48)	Immediate positive consequences such as peer approval (49)
Reward sensitivity	Lack of opportunities for social interactions and rewards, as a consequence of restrictions on social gatherings (2)	Emphasis on prosocial benefits such as protecting family members (49)
Social and emotional pressures	Social pressures for men to adopt masculine norms such as toughness (e.g. by not wearing masks) (50)	Positive peer pressure towards safer behaviours (51)
Social norms	Lack of observable social norms for safe behaviour (e.g. staying at home) (52)	Accepted norms of target behaviour (e.g. mask wearing) within the specific cultural context (53)
Social networks and ties	Lack of consensus among family members, trusted adults and peers on the seriousness of the disease (54)	Consistent parental rules or recommendations by peers and trusted community members (49)
Enabling environment	Exposure to misinformation and conflicting messages (55)	Access to up-to-date, accurate information from trusted sources (56)
\$ Socioeconomic circumstances	Living in densely populated conditions (57)	Ability to afford masks, soap and water, and disinfectants (58)

Some of the factors in Table I operate at the motivational level, whereas others operate at the social, cognitive and environmental levels. This difference highlights how most behaviours among young people might be influenced at more than one level, rather than just by knowledge-based interventions.

When attempting to understand why young people may be unable to adopt preventive behaviours for COVID-19, it is important to consider that exposure to the risk of infection might not be a deliberate choice for many young people and other age groups, but rather a behaviour imposed by external conditions. For example, in some settings (e.g. in informal settlements where residents live in close proximity) it may be difficult to achieve physical distancing (57), whereas in others, accessibility to and affordability of masks could be a barrier to mask use (58).



## 4. BEHAVIOURAL CONSIDERATIONS FOR POLICIES OR STRATEGIES TARGETING YOUNG PEOPLE

Risk-taking and decision-making behaviours in young people are not dramatically different from those in adults; however, several youth-relevant drivers of behaviours can potentially increase the effectiveness of COVID-19 policies or strategies targeted at this segment of the population. As with most behavioural interventions, a thorough approach that addresses environmental, social, cognitive and motivational factors will be needed to facilitate the adoption of the desired preventive behaviours.

This section outlines behavioural considerations that could be taken into account by those designing programmes targeted at young people in the context of the pandemic (Fig. 2).

- Create an enabling environment whereby safer behaviours are easy to enact. An enabling environment includes easy and convenient access to services necessary for protection against COVID-19 such as running water, sanitizing stations and access to equipment (e.g. masks), or provides cues (e.g. markers on the ground or on chairs) to facilitate adherence to physical distancing, or reminders to open windows in schools or workplaces. Creating an enabling environment may make it easier for people of all age groups to enact safer behaviours.
- Establish positive social norms in peer groups. Given young people's susceptibility to social pressures (e.g. not wanting to deviate from the "norm" or to look different in relation to mask wearing), preventive interventions may be more successful if they focus on establishing new social norms in the peer group and if the new norm is communicated by influential peers (44, 59).
- Promote feelings of empathy and prosocial motivation towards others in the community. Epidemiological data demonstrate that young people are less likely than the general population to become seriously ill from COVID-19 (60); hence, warning of the dire consequences of catching the disease may be less effective in this population. Some studies and survey data suggest that fostering prosocial motivation around the desire to keep their family and community members safe can increase young people's motivation to adopt safer behaviours (61, 62).
- Engage young people in communicating risk-prevention messages on social media. Globally, young people are often active producers and consumers of information on social media, and can thus be engaged to deliver messages to those who trust them. Across age groups, social media stories or images that contain a "gist" message are more influential than those that do not (63, 64).

## Build young people's confidence in their ability to act to protect themselves and their loved ones from risks.

As evidenced, incorporating skill-building within education programmes – such as how to recognize and counter misinformation online or how to protect oneself in crowded places that cannot be avoided (e.g. markets and schools) – can increase self-efficacy and complement knowledge-based efforts.

Facilitate social connections in safe ways to reduce negative mental health impact. Evidence is rapidly emerging on the need to balance adherence to COVID-19 preventive behaviours with the mental health impact on young people, who need contact with others as part of their social development (65). Therefore, it is important to consider the need for maintaining the structure, quality and quantity of social networks (including online) to help young people experience social rewards, to feel part of a group, and to know that there are others to whom they can look up to for support (66). A harm-reduction approach, whereby harms associated with socializing are reduced as much as possible (e.g. meeting only outdoors while wearing a mask and observing physical distance) rather than stopping the behaviour completely can allow young people to lead their lives and meet their needs but reduce risks as they do so (2).

Fig. 2. Behavioural interventions for young people



## 4.1 ADAPTATION

When considering behavioural strategies or policies targeting young people, or any age group, it is important to recognize that individual behaviours and environments vary greatly, and that strategy options should be tested and adapted to contexts based on age, socioeconomic circumstances, gender and geography (both within and across countries).

In doing this, it is important to understand the multidimensionality of factors that influence risk behaviours, and to enable safe behaviours through a variety of coordinated and complementary strategies. In fact, when used in combination, different policy options may be complementary and even synergistic (67).

COVID-19 prevention programmes might also aim to mobilize communities of young people and encourage them to make meaningful contributions (68). Evidence suggests that behaviour-change efforts targeted at young people may be most effective if they are developed collaboratively with young people, to ensure that these efforts are relevant to young people's goals, resources and constraints. Ultimately, when designing youth-targeted initiatives, it is critical to think of young people not simply in terms of the problems that they may cause through their behaviours, but in a more positive and constructive way, taking into account their aspirations, need for exploration and affiliation, sense of agency and empowerment, and willingness to be elements of positive social change (69).

Owing to the limited behavioural evidence available on what works and what does not work in enabling preventive COVID-19 behaviours among young people, evidence from other health domains was considered for this policy brief, as well as broad expert consensus. Although intended to be a useful starting point, there are clear limitations to the policy and strategy options outlined in this brief. Thus, these options should continue to evolve as more evidence emerges, and they should be complemented by context-specific local research, testing and validation whenever possible.

Considering the impact of the pandemic on young people and the importance of this group for an effective global response (70), more youth-specific behavioural research is urgently needed to understand how to empower young people, to help them protect themselves and their loved ones while recognizing their specific needs, and to ensure they have a role and that their potential is fulfilled in the fight against COVID-19.

## REFERENCES

- 1. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. Lancet. 2020;395(10227):912–20 (https://doi.org/10.1016/S0140-6736(20)30460-8).
- 2. Fedorenko EJ, Kibbey MM, Contrada RJ, Farris SG. Psychosocial predictors of virus and social distancing fears in undergraduate students living in a US COVID-19 "hotspot". Cogn Behav Ther. 2021:1–17 (https://pubmed.ncbi.nlm.nih.gov/33587026/).
- 3. Lee SA. Coronavirus anxiety scale: a brief mental health screener for COVID-19 related anxiety. Death Stud. 2020;44(7):393–401 (https://pubmed.ncbi.nlm.nih.gov/32299304/).
- 4. Beam CR, Kim AJ. Psychological sequelae of social isolation and loneliness might be a larger problem in young adults than older adults. Psychol Trauma. 2020;12(S1):S58–S60 (https://pubmed.ncbi.nlm.nih.gov/32525372/).
- 5. ILO Monitor: COVID-19 and the world of work, seventh edition. Geneva: International Labour Organization (ILO); 2021 (https://www.ilo.org/global/topics/coronavirus/impacts-and-responses/WCMS\_767028/lang--en/index.htm).
- **6.** Youth & COVID-19: impacts on jobs, education, rights and mental wellbeing. Geneva: International Labour Organization (ILO); 2020 (https://www.ilo.org/global/topics/youth-employment/publications/WCMS\_753026/lang--en/index.htm).
- 7. Hill RM, Rufino K, Kurian S, Saxena J, Saxena K, Williams L. Suicide ideation and attempts in a pediatric emergency department before and during COVID-19. Pediatrics. 2021;147(3): e2020029280 (https://pubmed.ncbi.nlm.nih.gov/33328339/).
- 8. Varma P, Junge M, Meaklim H, Jackson ML. Younger people are more vulnerable to stress, anxiety and depression during COVID-19 pandemic: a global cross-sectional survey. Prog Neuropsychopharmacol Biol Psychiatry. 2020;109:110236 (https://pubmed.ncbi.nlm.nih.gov/33373680/).

- 9. Youth and health risks: report by the Secretariat (Sixty-fourth World Health Assembly: A64/25). Geneva: World Health Organization; 2011 (https://apps.who.int/gb/ebwha/pdf\_files/WHA64/A64\_25-en.pdf)
- 10. Literature review report: youth risk perception and decision-making related to health behaviours in the COVID-19 era. Washington (DC): American Psychological Association; 2021 (https://www.apa.org/topics/covid-19/youth-risk-perception.pdf).
- 11. Le Breton D. The anthropology of adolescent risk-taking behaviours. Body Soc. 2004;10(1):1-15 (https://doi.org/10.1177/1357034X04041758).
- 12. Slovic P. Perception of risk. Science. 1987;236(4799):280–5 (https://science.sciencemag.org/content/sci/236/4799/280.full.pdf).
- 13. Tversky A, Kahneman D. Judgment under uncertainty: heuristics and biases. Science. 1974;185(4157):1124–31 (https://science.sciencemag.org/content/sci/185/4157/1124.full.pdf).
- 14. Steinberg L. How to improve the health of American adolescents. Perspect Psychol Sci. 2015;10(6):711–5 (https://pubmed.ncbi.nlm.nih.gov/26581723/).
- 15. Steinberg L, Graham S, O'Brien L, Woolard J, Cauffman E, Banich M. Age differences in future orientation and delay discounting. Child Dev. 2009;80(1):28–44 (https://srcd.onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-8624.2008.01244.x).
- 16. Cauffman E, Shulman EP, Steinberg L, Claus E, Banich MT, Graham S et al. Age differences in affective decision making as indexed by performance on the lowa Gambling Task. Dev Psychol. 2010;46(1):193–207 (https://pubmed.ncbi.nlm.nih.gov/20053017/).
- 17. Galván A. The teenage brain: sensitivity to rewards. Curr Dir Psychol Sci. 2013;22(2):88–93 (https://psycnet.apa. org/record/2013-13978-004).
- **18.** Crone EA, Steinbeis N. Neural perspectives on cognitive control development during childhood and adolescence. Trends Cogn Sci. 2017;21(3):205–15 (https://pubmed.ncbi.nlm.nih.gov/28159355/).

- 19. Icenogle G, Steinberg L, Duell N, Chein J, Chang L, Chaudhary N et al. Adolescents' cognitive capacity reaches adult levels prior to their psychosocial maturity: evidence for a "maturity gap" in a multinational, cross-sectional sample. Law Hum Behav. 2019;43(1):69–85 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6551607/).
- 20. Steinberg L, Icenogle G, Shulman EP, Breiner K, Chein J, Bacchini D et al. Around the world, adolescence is a time of heightened sensation seeking and immature self-regulation. Dev Sci. 2018;21(2)(https://pubmed.ncbi.nlm.nih.gov/28150391/).
- 21. Neighbors C, O'Connor RM, Lewis MA, Chawla N, Lee CM, Fossos N. The relative impact of injunctive norms on college student drinking: the role of reference group. Psychol Addict Behav. 2008;22(4):576–81 (https://pubmed.ncbi.nlm.nih.gov/19071984/).
- 22. Van de Bongardt D, Reitz E, Sandfort T, Deković M. A meta-analysis of the relations between three types of peer norms and adolescent sexual behavior. Pers Soc Psychol Rev. 2015;19(3):203–34 (https://pubmed.ncbi.nlm.nih.gov/25217363/).
- 23. Cialdini RB, Reno RR, Kallgren CA. A focus theory of normative conduct: recycling the concept of norms to reduce littering in public places. J Pers Soc Psychol. 1990;58(6):1015–26 (https://psycnet.apa.org/record/1990-30919-001).
- 24. Rimal RN, Real K. How behaviors are influenced by perceived norms: a test of the theory of normative social behavior. Commun Res. 2005;32(3):389–414 (https://doi.org/10.1177/0093650205275385).
- 25. Albert D, Chein J, Steinberg L. The teenage brain: peer influences on adolescent decision making. Curr Dir Psychol Sci. 2013;22(2):114–20 (https://psycnet.apa.org/record/2013-13978-008).
- **26.** Chein J, Albert D, O'Brien L, Uckert K, Steinberg L. Peers increase adolescent risk taking by enhancing activity in the brain's reward circuitry. Dev Sci. 2011;14(2):F1–F1O (https://pubmed.ncbi.nlm.nih.gov/21499511).

- 27. Christakis NA, Fowler JH. The spread of obesity in a large social network over 32 years. N Engl J Med. 2007;357(4):370–9 (https://pubmed.ncbi.nlm.nih.gov/17652652/).
- 28. Knoll LJ, Magis-Weinberg L, Speekenbrink M, Blakemore SJ. Social influence on risk perception during adolescence. Psychol Sci. 2015;26(5):583–92 (https://pubmed.ncbi.nlm.nih.gov/25810453/).
- 29. Nesi J, Choukas-Bradley S, Prinstein MJ. Transformation of adolescent peer relations in the social media context: part 1-A theoretical framework and application to dyadic peer relationships. Clin Child Fam Psychol Rev. 2018;21(3):267–94 (https://pubmed.ncbi.nlm.nih.gov/29627907/).
- **30.** Yonker LM, Zan S, Scirica CV, Jethwani K, Kinane TB. "Friending" teens: systematic review of social media in adolescent and young adult health care. J Med Internet Res. 2015;17(1):e4–e (https://pubmed.ncbi.nlm.nih. gov/25560751).
- 31. Reza-Paul S, Beattie T, Syed HU, Venukumar KT, Venugopal MS, Fathima MP et al. Declines in risk behaviour and sexually transmitted infection prevalence following a community-led HIV preventive intervention among female sex workers in Mysore, India. AIDS. 2008;22 Suppl 5:S91–S100 (https://pubmed.ncbi.nlm.nih.gov/19098483/).
- 32. Nyblade L, Stockton M, Nyato D, Wamoyi J. Perceived, anticipated and experienced stigma: exploring manifestations and implications for young people's sexual and reproductive health and access to care in North-Western Tanzania. Cult Health Sex. 2017;19(10):1092–107 (https://pubmed.ncbi.nlm.nih.gov/28276918/).
- **33.** Mullainathan S, Shafir E. Scarcity: the new science of having less and how it defines our lives. New York: Picador; 2014.
- **34.** Salmi V, Kivivuori J. The association between social capital and juvenile crime: the role of individual and structural factors. Eur J Criminol. 2006;3(2):123–48 (https://doi.org/10.1177/1477370806061967).

- 35. Sharland E. Young people, risk taking and risk making: some thoughts for social work. Br J Soc Work. 2005; 36: 247-65 (https://www.jstor.org/stable/23720910?seq=1).
- **36.** Mazur A, Brindis CD, Decker MJ. Assessing youth-friendly sexual and reproductive health services: a systematic review. BMC Health Serv Res. 2018;18(1):216 (https://pubmed.ncbi.nlm.nih.gov/29587727/).
- 37. Prestwich A, Kellar I, Conner M, Lawton R, Gardner P, Turgut L. Does changing social influence engender changes in alcohol intake? A meta-analysis. J Consult Clin Psychol. 2016;84(10):845–60 (https://pubmed.ncbi.nlm.nih.gov/27243967/).
- 38. Reyna VF, Estrada SM, DeMarinis JA, Myers RM, Stanisz JM, Mills BA. Neurobiological and memory models of risky decision making in adolescents versus young adults. J Exp Psychol Learn Mem Cogn. 2011;37(5):1125–42 (https://pubmed.ncbi.nlm.nih.gov/21707215/).
- **39.** Downs JS, Murray PJ, Bruine de Bruin W, Penrose J, Palmgren C, Fischhoff B. Interactive video behavioral intervention to reduce adolescent females' STD risk: a randomized controlled trial. Soc Sci Med. 2004;59(8):1561–72 (https://pubmed.ncbi.nlm.nih.gov/15279915/).
- **40.** Jemmott JB, III, Jemmott LS, Fong GT. Efficacy of a theory-based abstinence-only intervention of over 24 months: a randomized controlled trial with young adolescents. Arch Pediatr Adolesc Med. 2010;164(2):152–9 (https://doi.org/10.1001/archpediatrics.2009.267).
- 41. Kirby DB, Laris BA, Rolleri LA. Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. J Adolesc Health. 2007;40(3):206–17 (https://pubmed.ncbi.nlm.nih.gov/17321420/).
- 42. MacArthur GJ, Harrison S, Caldwell DM, Hickman M, Campbell R. Peer-led interventions to prevent tobacco, alcohol and/or drug use among young people aged 11–21 years: a systematic review and meta-analysis. Addiction. 2016;111(3):391–407 (https://pubmed.ncbi.nlm.nih. gov/26518976).

- 43. Swartz S, Deutsch C, Makoae M, Michel B, Harding JH, Garzouzie G et al. Measuring change in vulnerable adolescents: findings from a peer education evaluation in South Africa. Sahara J. 2012;9(4):242–54 (https://pubmed.ncbi.nlm.nih.gov/23234352/).
- 44. Campbell R, Starkey F, Holliday J, Audrey S, Bloor M, Parry-Langdon N et al. An informal school-based peer-led intervention for smoking prevention in adolescence (ASSIST): a cluster randomised trial. Lancet. 2008;371(9624):1595–602 (https://pubmed.ncbi.nlm.nih.gov/18468543/).
- 45. Youth perceptions and behaviors during the pandemic: comparisons across regions, over time, and between men and women. Baltimore (MD): Johns Hopkins University; 2021 (https://ccp.jhu.edu/kap-covid/).
- **46.** Makki F, Sedas PS, Kontar J, Saleh N, Krpan D. Compliance and stringency measures in response to COVID-19: a regional study. JBEP (SABE). 2020;4(S2):15–24 (https://ideas.repec.org/a/beh/jbepv1/v4y2020is2p15-24. html).
- 47. Wunderman Thompson, University of Melbourne, Pollfish, WHO. Social media & COVID-19: a global study of digital crisis interaction among Gen Z and millennials [website]. Geneva: World Health Organization; 2021 (https://covid19-infodemic.com/).
- **48.** Nivette A, Ribeaud D, Murray A, Steinhoff A, Bechtiger L, Hepp U et al. Non-compliance with COVID-19-related public health measures among young adults in Switzerland: insights from a longitudinal cohort study. Soc Sci Med. 2021;268:113370 (https://pubmed.ncbi.nlm.nih.gov/32980677).
- **49.** Oosterhoff B, Palmer CA, Wilson J, Shook N. Adolescents' motivations to engage in social distancing during the COVID-19 pandemic: associations with mental and social health. J Adolesc Health. 2020;67(2):179–85 (https://pubmed.ncbi.nlm.nih.gov/32487491/).
- **50.** Palmer CL, Peterson RD. Toxic mask-ulinity: the link between masculine toughness and affective reactions to mask wearing in the COVID-19 era. Politics &

- Gender. 2020:1–8 (https://www.ncbi.nlm. nih.gov/pmc/articles/PMC7588711/).
- **51.** Andrews JL, Foulkes L, Blakemore SJ. Peer influence in adolescence: publichealth implications for COVID-19. Trends Cogn Sci. 2020;24(8):585–7 (https://pubmed.ncbi.nlm.nih.gov/32444200/).
- **52.** Young SD, Goldstein NJ. Applying social norms interventions to increase adherence to COVID-19 prevention and control guidelines. Prev Med. 2021;145:106424 (https://pubmed.ncbi.nlm.nih.gov/33440191/).
- 53. Abaluck J, Chevalier JA, Christakis NA, Forman HP, Kaplan EH, Ko A et al. The case for universal cloth mask adoption and policies to increase supply of medical masks for health workers. 2020 (https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3567438).
- **54.** Feyisa ZT. Factors limiting youths' practice of preventive measures toward the outbreak of COVID-19 in Oromia special zone surrounding Finfinnee, Ethiopia. PLoS One. 2021;16(3):e0248495 (https://pubmed.ncbi.nlm.nih.gov/33720979/).
- 55. Wilson RF, Sharma AJ, Schluechtermann S, Currie DW, Mangan J, Kaplan B et al. Factors influencing risk for COVID-19 exposure among young adults aged 18–23 years. MMWR. 2020;69:1497–1502 (http://dx.doi.org/10.15585/mmwr.mm6941e2).
- **56.** Kebede Y, Yitayih Y, Birhanu Z, Mekonen S, Ambelu A. Knowledge, perceptions and preventive practices towards COVID-19 early in the outbreak among Jimma University Medical Center visitors, Southwest Ethiopia. PLoS One. 2020;15(5):e0233744 (https://pubmed.ncbi.nlm.nih.gov/32437432/).
- 57. Gibson L, Rush D. Novel coronavirus in Cape Town informal settlements: feasibility of using informal dwelling outlines to identify high risk areas for COVID-19 transmission from a social distancing perspective. JMIR Public Health Surveill. 2020;6(2):e18844 (https://pubmed.ncbi.nlm.nih.gov/32250283/).

- 58. Abaluck J, Kwong L, Styczynski AR, Haque MA, Kabir A, Bates-Jefferys E et al. Community-wide mask promotion: a cluster-randomized trial in rural Bangladesh. Under review.
- 59. Sparkman G, Walton GM. Dynamic norms promote sustainable behavior, even if it is counternormative. Psychol Sci. 2017;28(11):1663–74 (https://doi.org/10.1177/0956797617719950).
- **60.** Bhopal SS, Bagaria J, Olabi B, Bhopal R. Children and young people remain at low risk of COVID-19 mortality. Lancet Child Adolesc Health. 2021;5(5):e12-e13.
- **61.** Betsch C, Korn L, Sprengholz P, Felgendreff L, Eitze S, Schmid P et al. Social and behavioral consequences of mask policies during the COVID-19 pandemic. PNAS. 2020;117(36):21851–3 (https://www.pnas.org/content/pnas/117/36/21851.full.pdf).
- **62.** Pfattheicher S, Nockur L, Böhm R, Sassenrath C, Petersen M. The emotional path to action: empathy promotes physical distancing and wearing face masks during the COVID-19 pandemic. Psychol Sci. 2020;31(11):1363–73 (https://www.researchgate.net/publication/340104316\_The\_emotional\_path\_to\_action\_Empathy\_promotes\_physical\_distancing\_and\_wearing\_face\_masks\_during\_the\_COVID-19\_pandemic).
- **63.** Broniatowski DA, Hilyard KM, Dredze M. Effective vaccine communication during the Disneyland measles outbreak. Vaccine. 2016;34(28):3225–8 (https://pubmed.ncbi.nlm.nih.gov/27179915).
- **64.** National Academies of Sciences, Engineering, and Medicine. Encouraging protective COVID-19 behaviors among college students. Washington (DC): The National Academies Press; 2020 (https://www.nap.edu/catalog/26004/encouraging-protective-covid-19-behaviors-among-college-students).
- **65.** Ford T, John A, Gunnell D. Editorial: Mental health of children and young people during pandemic. BMJ. 2021; 372(614) (https://doi.org/10.1136/bmj. n614).

- **66.** Loades ME, Chatburn E, Higson-Sweeney N, Reynolds S, Shafran R, Brigden A et al. Rapid systematic review: the impact of social isolation and loneliness on the mental health of children and adolescents in the context of COVID-19. J Am Acad Child Adolesc Psychiatry. 2020; 59(11):1218–39.e3 (https://doi.org/10.1016/j.jaac.2020.05.009).
- 67. Chandra-Mouli V, Lane C, Wong S. What does not work in adolescent sexual and reproductive health: a review of evidence on interventions commonly accepted as best practices. GHSP. 2015;3(3):333–40 (https://pubmed.ncbi.nlm.nih.gov/26374795).
- **68.** Fuligni AJ. Is there inequality in what adolescents can give as well as receive? Curr Dir Psychol Sci. 2020;29(4):405–11 (https://doi. org/10.1177/0963721420917738).
- **69.** Fischhoff B. Assessing adolescent decision-making competence. Dev Rev. 2008;28(1):12–28 (https://www.sciencedirect.com/science/article/pii/S0273229707000500).
- 70. World's largest youth organizations, representing 250 million members, and WHO launch global mobilization to respond to disruptive impacts of COVID-19 on young people. Geneva: World Health Organization; 2020 (https://www.who.int/news/item/14-12-2020-world-s-largest-youth-organizations-and-who-launch-global-mobilization-to-respond-to-disruptive-impacts-of-covid-19-on-young-people).

## ANNEX. METHODOLOGY

A rapid review of evidence for this policy brief was conducted by the American Psychological Association (APA). It was conducted over 4 weeks in January 2021, and addressed eight thematic questions pertaining to youth and young adults aged 15–30 years. The research questions and areas included risk perception, decision-making, risk-taking, cognitive bias, social influences and norms, self-efficacy, environmental factors and behavioural interventions related to health conditions. APA made a concerted effort to include studies from a variety of regions and income settings.

A rapid expert consultation process was then conducted, modelled on that of the National Academies of Sciences, Engineering, and Medicine. The process started by consulting 40 leading psychology experts across the eight areas. These experts included the presidents of 10 relevant APA divisions in areas such as developmental psychology, clinical child and adolescent psychology, health psychology and addiction psychology. On the basis of their nominations, 11 psychologists were enlisted according to their expertise in relation to the issues covered by the review and their availability. Each of the psychologists conducted an independent review of the literature and submitted a brief report related to one or two of the eight research questions to a consultant hired by APA. To reduce the risk of conflict of interest and biases among the experts, the recruitment process was structured to ensure that each of the eight questions that guided the review was addressed by two or three experts independently. When discrepancies arose, consensus was reached after several rounds of consultation.

To answer the questions, the experts drew on their knowledge of published, peer-reviewed research, including review articles that they or others had written. Their criteria for including or excluding studies were relevance to the question (assessed subjectively) and date of the publication. Studies published before 1995 and that had not been peer reviewed were excluded. Contributors used key terms such as risk perception, social norms, self-efficacy, risk-taking and systematic review. Databases accessed were PsycInfo, PubMed and EBSCO Host; university online libraries were also used. The report cited 112 research references from studies and review articles. The report also emphasized consistent findings and conclusions, while noting unresolved scientific issues. Further details on the methodology are available in the report.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Literature review report: youth risk perception and decision-making related to health behaviours in the COVID-19 era. Washington (DC): American Psychological Association; 2021 (https://www.apa.org/topics/covid-19/youth-risk-perception.pdf).

After the report was compiled, consultations were held with the TAG.<sup>2</sup> The TAG met twice in February 2021 to discuss the evidence review, its relevance to different regions and settings, and its specific relevance to behaviours during the COVID-19 pandemic. As a result of these meetings, the experts identified behavioural factors that are relevant for youth and young adults aged 15–30 years, and that should be considered when designing strategies targeted at young people. In addition to the evidence review conducted by the psychologists, the consultations with the TAG brought in complementary perspectives from other disciplines, in particular those relating to social and environmental factors influencing young people's behaviours. After several rounds of consultation, a core group prioritized the behavioural factors and considerations for strategies. An additional literature review was conducted to address gaps specifically identified during the consultations. Consensus on the evidence to be cited and on the policy brief was reached following several rounds of consultation. Comments that were not supported by published evidence were removed with the agreement of the TAG members.

The additional literature review focused on published studies relevant to the context of the COVID-19 pandemic. Because the literature on COVID-19 behaviours is recent, especially with respect to peer-reviewed publications, few published studies were found by searching key search terms: COVID-19, youth, young people, global, risk and intervention. The published studies included in the literature review were validated by the core drafting group.

There were several rounds of review involving a large number of independent experts throughout the process, which enabled evidence gaps to be identified and addressed, and a consensus to be reached. Given the rapid nature of the review, there was no systematic strategy to guide the review process.

 $<sup>^2</sup>$  The TAG members and temporary advisers submitted declarations of interest, which were assessed in accordance with WHO procedures. No conflicts of interest were identified.

## Limitations of the methodology

This policy brief has several limitations. The selection and discussion of evidence followed an expert-driven approach. Although biases in the selection of the literature reviewed were controlled for by engaging experts from different nationalities and disciplines, and by engaging them independently, the influence of biases at the individual level in the review that provided the basis for the consultations and the policy brief cannot be excluded. Also, although studies from geographically diverse settings were sought, most of the evidence to inform the rapid review was from studies conducted in high-income settings. Whenever possible, studies with global samples or those conducted in low- and middle-income settings were prioritized. Because of time and other constraints, only English-language sources were included.

Finally, while a wide age range (15–30 years) was considered in order to make this policy brief relevant to more organizations working with young people, there is significant variety within that age range that may warrant tailored approaches for subgroups; this short document does not allow for detailed considerations by segment. Findings that are relevant to a particular subgroup are indicated as such in the corresponding section. The wide age range also meant that most studies cited had different age groupings. This document aims to identify general behavioural considerations relevant to young people and to seek commonalities, rather than making considerations specific to a subgroup.

In the absence of peer-reviewed evidence on adherence to COVID-19 preventive behaviours, survey data and examples were included from grey literature and non-peer-reviewed studies related to the pandemic.



The image above is a visual narration that captures key messages from the meeting held on 4 February 2021, during which the group of experts discussed the factors influencing the behaviours of young people.



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