

FEATURE

Renewed call for action: Collection on Gender Inequality

[Read more](#)

Image ©

[Submit](#)[Alerts](#)[About](#)

Current Issue



December 2022

Volume 54

[Table of contents](#)

Volume 55, in progress

[View archive](#)

ARTICLES

Suicide spectrum among young people during the COVID-19 pandemic: A systematic review and meta-analysis

Bersia et al.

Image ©



ARTICLES

Lung-function trajectories in COVID-19 survivors after discharge: A two-year longitudinal cohort study

Zhang et al.

Image ©



REVIEW

Hospital-based preventative interventions for people experiencing homelessness in high-income countries: A systematic review

Luchenski et al.

Image ©

Latest content

Open Access

Electroacupuncture for motor dysfunction and constipation in patients with Parkinson's disease: a randomised controlled multi-centre trial

Li et al.

Published: January 13, 2023

Open Access

Optimized immunosuppression to prevent graft failure in renal transplant recipients with HLA antibodies (OuTSMART): a randomised controlled trial

Stringer et al.

Published: January 11, 2023

[View more](#)

Open Access

COVAC1 phase 2a expanded safety and immunogenicity study of a self-amplifying RNA vaccine against SARS-CoV-2

Szubert et al.

Published: January 12, 2023

Open Access

Risk of autoimmune diseases in patients with COVID-19: A retrospective cohort study

Chang et al.

Published: January 9, 2023

Editor's pick

ARTICLES • Open Access

Independent and cumulative effects of risk factors associated with stillbirths in 50 low- and middle-income countries: A multi-country cross-sectional study

Li et al.

Published: October 31, 2022

ARTICLES • Open Access

Risks and benefits of oral anticoagulants for stroke prophylaxis in atrial fibrillation according to body mass index: Nationwide cohort study of primary care records in England

Nakao et al.

Published: October 31, 2022

ARTICLES • Open Access

Global monkeypox case hospitalisation rates: A rapid systematic review and meta-analysis

DeWitt et al.

Published: October 31, 2022

ARTICLES • Open Access

Digital exclusion and functional dependence in older people: Findings from five longitudinal cohort studies

Lu et al.

Published: October 31, 2022

Latest audio

0:00 / 0:00

(mp3, 39:54mins, 37.1MB)

Renewed call for action: Collection on Gender Inequality

In this episode, eClinicalMedicine highlights the Gender Equality and Health collection to renew the call for action for a gender equitable society in the aftermath of the COVID-19 pandemic, which exacerbated the unequal value and treatment of women worldwide.

[Read associated article](#)

Follow us

0:00 / 0:00

(mp3,29:50mins,25.2MB)

In conversation with... Valeria Frighi

Dr Valeria Frighi joins Claudia Schafer, Editor-in-Chief for *eClinicalMedicine*, to discuss the risk of major osteoporotic fractures in people with intellectual disabilities.

[Read associated article](#)

0:00 / 0:00

(mp3, 13:45, 11.1MB)

In conversation with... Damilola Shobiye and Ayomide Omotola

Damilola Shobiye and Ayomide Omotola join *eClinicalMedicine* to discuss trends in infant mortality in Nigeria, and the contributing factors for the high mortality rates observed in their recent study.

[Read associated article](#)

0:00 / 0:00

(mp3, 16:36mins,14.1MB)

In conversation with... Morteza Mahmoudi

Dr Morteza Mahmoudi joins Dr Vincenzo Giacco, Senior Editor at *eClinicalMedicine*, to discuss bullying in academia across scientific disciplines, and how to tackle this important issue.

[Read associated article](#)

Announcements

New Podcasts: Now you can not only read *eClinicalMedicine* but hear us too! [Explore our latest audio](#).

Racial Inequity in Health: [Explore the second part of this open access Collection](#).

More than a medical journal: This year marks *The Lancet's* 200th anniversary. [Find out more](#) about how we will celebrate, self-reflect, and amplify our founding ideas with our present-day impact and vision for the future across all 24 journals that are a part of The Lancet Group.

17·033
Impact factor ⓘ

16·564
5-year impact factor ⓘ

10·9
CiteScore ⓘ

[Submit a Manuscript](#)

[More Journal Metrics](#)

Most read

ARTICLES • [Open Access](#)

[Single-dose psilocybin-assisted therapy in major depressive disorder: A placebo-controlled, double-blind, randomised clinical trial](#)
von Rotz et al.

ARTICLES • [Open Access](#)

[Impact of COVID-19 vaccination on the risk of developing long-COVID and on existing long-COVID symptoms: A systematic review](#)
Notarte et al.

ARTICLES • [Open Access](#)

[The prevalence and long-term health effects of Long Covid among hospitalised and non-hospitalised populations: A systematic review and meta-analysis](#)
O'Mahoney et al.

ARTICLES • [Open Access](#)

[Thromboembolic events and hemorrhagic stroke after mRNA \(BNT162b2\) and inactivated \(CoronaVac\) covid-19 vaccination: A self-controlled case series study](#)
Chui et al.

THE LANCET *Discovery Science*

eClinicalMedicine, together with *eBioMedicine*, is part of [The Lancet Discovery Science](#) — a suite of open access journals that span basic, translational, clinical, and health systems research. They publish essential, early evidence that helps researchers and clinicians alike to identify new opportunities with the potential to improve the health and wellbeing of people around the world. [Learn more.](#)

eClinicalMedicine ISSN 2589-5370

THE LANCET



LANCET JOURNALS

- The Lancet
- The Lancet Child & Adolescent Health
- The Lancet Diabetes & Endocrinology
- The Lancet Digital Health
- The Lancet Gastroenterology & Hepatology
- The Lancet Global Health
- The Lancet Haematology
- The Lancet Healthy Longevity
- The Lancet HIV
- The Lancet Infectious Diseases
- The Lancet Microbe
- The Lancet Neurology
- The Lancet Oncology
- The Lancet Planetary Health
- The Lancet Psychiatry
- The Lancet Public Health
- The Lancet Regional Health – Americas
- The Lancet Regional Health – Europe

CLINICAL INITIATIVES

- The *Lancet* Clinic
- Commissions
- Series
- Picture Quiz
- GLOBAL HEALTH INITIATIVES
- Global Health Hub
- Commissions
- Series
- Global Burden of Disease
- Climate Countdown

MULTIMEDIA

- Infographics
- Podcasts
- Videos

INFORMATION

- About us
- For authors
- For advertisers
- For press
- Statement on offensive historical content
- Open access
- Publishing excellence
- Careers
- Community guidelines
- Peer review
- Preprints

ACCESS

- Access our content
- Personal subscriptions
- Existing print subscribers
- Request institutional access
- Research4Life

- The Lancet Regional Health – Southeast Asia
- The Lancet Regional Health – Western Pacific
- The Lancet Respiratory Medicine
- The Lancet Rheumatology
- eBioMedicine
- eClinicalMedicine

- CONNECT
- Lancet Alerts
- Contact us
- Customer service
- Our global team
- Conferences

We use cookies to help provide and enhance our service and tailor content and ads. To update your cookie settings, please visit the [Cookie Settings](#) for this site.
Copyright © 2023 Elsevier Inc. except certain content provided by third parties. The content on this site is intended for healthcare professionals.

[Privacy Policy](#) [Terms and Conditions](#) [Accessibility](#)



About *eClinicalMedicine*

[Author guidelines](#)[Pre-submission checklist](#)[Submit](#)

Aims and scope

The premium gold open access venue for clinical medical research

eClinicalMedicine covers clinical research from all medical specialties—from diagnosis to treatment, prevention to palliative care, and health promotion to health policy and equity. We aim to help frontline health professionals navigate the complex and rapid health transitions facing societies worldwide and aspire to be a catalyst to rethink and reframe the future of health and health care with the ultimate goal of strengthening health systems as core institutions.

We publish a range of content types including Articles, Review, Comment, and Correspondence. Learn more about the [types of papers](#) we publish.

eClinicalMedicine, alongside *eBioMedicine*, is part of [The Lancet Discovery Science](#)—a suite of open access journals that spans basic, translational, clinical, and health systems research. Together, we publish essential, early evidence that helps researchers and clinicians alike to identify new opportunities with the potential to improve the health and wellbeing of people around the world.

Learn more about:  [Go](#)

Reach and impact

The *Lancet* journals are both a destination for publication and a platform to advance the global impact of research. The Lancet Group cares that your work is highly visible to a global network of researchers, clinicians, industry professionals, policy makers, media outlets, patients, and the wider public, and we work with you and your affiliated institutions to maximise the impact of your research on the world.

- *Lancet* journals have extensive global reach with **more than 42.5 million annual visits** on TheLancet.com and **268.7 million downloaded articles** across [TheLancet.com](#) and [ScienceDirect](#).
- [LancetAlerts](#), including our electronic Table of Contents, have **over 3.5 million subscriptions**.
- *Lancet* journals have **nearly 1.8 million followers** on [Twitter](#), [Facebook](#), [LinkedIn](#), [WeChat](#), [Weibo](#), and [YouTube](#).
- With **over 363 000 annual mentions in news articles**, research published in *Lancet* journals receives regular coverage in influential media such as the Associated Press, BBC, CNN, *Financial Times*, *The Guardian*, *The New York Times*, NPR, and *The Washington Post*.
- [Lancet podcasts](#) receive **nearly 76 000 listens** each month.

eClinicalMedicine is an **internationally trusted source of essential, early evidence in clinical research**. With an **Impact Factor of 17.033**, we rank 12th out of 172 journals in general and internal medicine globally (2021 *Journal Citation Reports*®, Clarivate 2022).

We recognise that the Journal Impact Factor is just one measure of a journal's performance and encourage authors to explore [additional journal impact metrics](#), which provide a means to assess our journals. *eClinicalMedicine* is also indexed by the following abstracting and indexing services:

- Crossref
- Directory of Open Access Journals (DOAJ)
- Embase
- GoOA (National Science Library, Chinese Academy of Science)
- PubMed Central (PMC)
- Scopus
- Science Citation Index Expanded (SCIE)

Information for authors

[Author guidelines](#)[Author forms](#)[Author checklist](#)[Online submission site](#)

Manuscript preparation must adhere to [relevant reporting standards on the EQUATOR network website](#).

Manuscripts must be solely the work of the author(s) stated, must not have been previously published elsewhere, and must not be under consideration by another journal.

Whether you are an existing author or are thinking of submitting to us for the first time, we are [committed to supporting you](#) on whatever stage of your publication journey you find yourself.

Publishing excellence

As trusted sources of information, The Lancet Group sets extremely high standards for publishing, and we are committed to ensuring that our editorial processes meet our standards of excellence.

Lancet journals are signatories of the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals issued by the International Committee of Medical Journal Editors (ICMJE Recommendations) and to the Committee on Publication Ethics (COPE) code of conduct for editors. We follow COPE's guidelines.

Publishing open access

eClinicalMedicine is a gold open access journal. All content, including Comment and Correspondence, is published under a gold open access licence, but the article processing charge (APC) only applies to full-length articles that are peer reviewed. All content is immediately and freely available to anyone and published under a Creative Commons license, which enables authors to retain copyright of their work.

To support the costs of publishing including reviewing (first by internal review, and then external peer review), copy editing, layout, online hosting, archiving, and promotion, authors who publish OA in our journals pay the APC, upon acceptance. The APC is paid by you, your institutions, or funding bodies. We believe ability to pay should never be a barrier to publication, and there are several options, including waivers and discounts available to authors to support publishing fees.

[Explore your options](#) for publishing open access, including information regarding APCs, waivers and discounts, and copyright options.

Meet the editorial team

The Editor-in-Chief is the final arbitrator of all decisions on each of the *Lancet* journals—for example, the decision to take a paper to peer review, the decision to publish or reject in light of the peer reviewers' remarks, journal scope and commissioning, consideration of appeals, general enquiries, and editorial priorities at any given time. The Lancet Group does not permit the Editor-in-Chief, or any in-house editors, to submit full-length articles to any of our journals.



Claudia Schaefer, Editor-in-Chief

Before joining the *eClinicalMedicine* team in 2019, I was a Senior Editor for *eBioMedicine*. In my scientific career I worked at the Koch Institute for Integrative Cancer Research at MIT (USA), with a longstanding interest in bringing both basic and clinical cancer research insights closer to actionable therapies. I have also spent time as a postdoc at both UT Southwestern (USA) and Boston University (USA), and completed my PhD at the University of Bonn (Germany) in 2010.



Bianca Brandon, Senior Editor

I joined the *eClinicalMedicine* team as a Senior Editor in Nov 2021, having worked at The Lancet Group as a Senior Assistant Editor since 2018. Before this, I worked as a scientific and medical editor within both MedComms and scientific publishing. I completed my MRes in Neuroscience at Newcastle University (UK) in 2014, working in human developmental genetics. I studied for my BSc in Biology at the University of Southampton (UK).



Vincenzo Giacco, Senior Editor

Prior to joining the *eClinicalMedicine* team as a Senior Editor in April 2022, I previously worked as a Post-doctoral Research Associate at the Wolfson Centre for Age-Related Diseases at Kings College London (UK) where I studied demyelination diseases for over three years. I received my PhD in Neurobiology from the International School for Advanced Studies (Italy) in 2018 working on the role of neuroinflammation in the spinal cord networks. Before this, I completed a MSC in Medical Biotechnologies at University of Naples Federico II (Italy).



Hannah Linne, Senior Editor

I joined the *eClinicalMedicine* team as a Senior Editor in Jan 2022. I previously worked as a Senior Assistant Editor at The Lancet Group since 2019. Before this, I worked as a Managing Editor in scientific publishing. I completed my PhD investigating telomerase regulation in breast cancer in 2015, after completing a BSc in Biomedical Sciences in 2011.



Charlotte Rowbottom, Senior Editor

Having worked at The Lancet Group as a Senior Assistant Editor since 2017, I joined the *eClinicalMedicine* team as a Senior Editor in Sept 2022. Prior to this, I worked as a Scientific Editor and Senior Deputy Managing Editor in scientific publishing. I studied for my BSc in Biomedical Science at the University of Warwick (UK), with an intercalated year at McMaster University (Canada).

If you have additional queries, we will be pleased to help. Please email us directly or at eclinm@lancet.com.

Learn more about the [teams and people](#) supporting *eClinicalMedicine*.

International Advisory Board

Our [International Advisory Board](#) consists of key opinion leaders and researchers from around the world who lend their expertise to the journal. The Board offer the journal subject, academic, and geographical advice on an ad hoc basis when requested by the editorial team. Board members have no formal involvement in content selection or in any part of the [peer review](#) process, nor do they have editorial oversight of any section of the journal. Board members are occasionally invited to peer review individual submissions at the request of the editorial team. Submissions authored by members of the Board are handled solely by *eClinicalMedicine's* editors according to our standard peer review processes; these submissions are never discussed by the Board or members thereof.

We are very grateful for their support and advice on editorial matters.

Ombudsperson

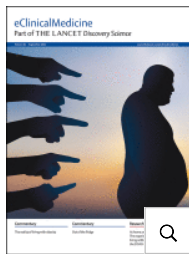
If you need to question an editorial decision, your first step should be to contact the editorial team. If you are not satisfied with our response, your next point of contact is our [Ombudsperson](#) whose task is to record and, when required, investigate allegations of editorial maladministration. Our files will be freely open to their inspection, and confidentiality will be respected in all cases. Our Ombudsperson's remit does not extend to areas normally covered in our correspondence columns—namely, issues of editorial content and editorial policy.

THE LANCET



The Lancet	The <i>Lancet</i> Clinic	About us
The Lancet Child & Adolescent Health	Commissions	For authors
The Lancet Diabetes & Endocrinology	Series	For advertisers
The Lancet Digital Health	Picture Quiz	For press
The Lancet Gastroenterology & Hepatology		Statement on offensive historical content
The Lancet Global Health	GLOBAL HEALTH INITIATIVES	Open access
The Lancet Haematology	Global Health Hub	Publishing excellence
The Lancet Healthy Longevity	Commissions	Careers
The Lancet HIV	Series	Community guidelines
The Lancet Infectious Diseases	Global Burden of Disease	Peer review
The Lancet Microbe	Climate Countdown	Preprints
The Lancet Neurology		
The Lancet Oncology	MULTIMEDIA	ACCESS
The Lancet Planetary Health	Infographics	Access our content
The Lancet Psychiatry	Podcasts	Personal subscriptions
The Lancet Public Health	Videos	Existing print subscribers
The Lancet Regional Health – Americas		Request institutional access
The Lancet Regional Health – Europe		Research4Life
The Lancet Regional Health – Southeast Asia		
The Lancet Regional Health – Western Pacific		CONNECT
The Lancet Respiratory Medicine		Lancet Alerts
The Lancet Rheumatology		Contact us
eBioMedicine		Customer service
eClinicalMedicine		Our global team
		Conferences

ADVERTISEMENT



Sep 2022
Volume 51

Open Access

Attribution: shutterstock: Pictrider "I learned that obesity was a disease and not just an accumulation of bad habits and wrong food choices."

Current Issue Iss

Full Issue Download

Download the complete issue
with one-click.



[Download Full Issue](#) [Register for eTOC alerts](#)

EDITORIAL

Medicine on the spectrum

eClinicalMedicine

[Full-Text HTML](#) | [PDF](#)

COMMENT

Post-COVID era: Time to re-introduce “cardiorespiratory fitness” as a vital sign

Abraham Samuel Babu, Ross Arena, Jonathan Myers

[Full-Text HTML](#) | [PDF](#)

The reality of living with obesity

Sarah Le Brocq

[Full-Text HTML](#) | [PDF](#)

Out of the fridge

Juan Pablo Villaseñor Díaz

[Full-Text HTML](#) | [PDF](#)

CORRESPONDENCE

Response to “Understanding chronic Covid-19”

Adam Hampshire, David K. Menon

[Full-Text HTML](#) | [PDF](#)

Understanding chronic Covid-19

Thomas Milovac

[Full-Text HTML](#) | [PDF](#)

Combining cost-effectiveness results into a single measurement: What is the value?

Huajie Jin, Xiao Li

[Full-Text HTML](#) | [PDF](#)

Combining cost-effectiveness results into a single measurement: What is the value?: Authors response

Piyameth Dilokthornsakul, Sajesh K. Veettil, Le My Lan, Ammarin Thakkestian, Raymond Hutubessy, Philipp Lambach, Nathorn Chaiyakunapruk

[Full-Text HTML](#) | [PDF](#)

Ethnic minorities, social media, and attitudes towards COVID-19 vaccination

Iliana Sarafian

[Full-Text HTML](#) | [PDF](#)



[y to: Ethnic minorities, social media, and attitudes towards COVID-19 vaccination](#)

i Cascini, Giovanna Failla, Andriy Melnyk



[Full-Text HTML](#) | [PDF](#)

ARTICLES

HIV prevalence and associated factors among female sex workers in Ethiopia, east Africa: A cross-sectional study using a respondent-driven sampling technique

Saro Abdella, Meaza Demissie, Alemayehu Worku, Merga Dheresa, Yemane Berhane

[Full-Text HTML](#) | [PDF](#)**A deep learning-based system for survival benefit prediction of tyrosine kinase inhibitors and immune checkpoint inhibitors in stage IV non-small cell lung cancer patients: A multicenter, prognostic study**

Kexue Deng, Lu Wang, Yuchan Liu, Xin Li, Qiuyang Hou, Mulan Cao, Nathan Norton Ng, Huan Wang, Huanhuan Chen, Kristen W. Yeom, Mingfang Zhao, Ning Wu, Peng Gao, Jingyun Shi, Zaiyi Liu, Weimin Li, Jie Tian, Jiangdian Song

[Full-Text HTML](#) | [PDF](#)**Immune response and reactogenicity after immunization with two-doses of an experimental COVID-19 vaccine (CVnCOV) followed by a third-fourth shot with a standard mRNA vaccine (BNT162b2): RescueVacs multicenter cohort study**

Ana Ascaso-del-Rio, Javier García-Pérez, Mayte Pérez-Olmeda, Eunáte Arana-Arri, Itziar Vergara, Carla Pérez-Ingidua, Mercedes Bermejo, María Castillo de la Osa, Natale Imaz-Ayo, Ioana Riaño Fernández, Oliver Astasio González, Francisco Díez-Fuertes, Susana Meijide, Julio Arrizabalaga, Lourdes Hernández Gutiérrez, Humberto Erick de la Torre-Tarazona, Alberto Mariano Lázaro, Emilio Vargas-Castrillón, José Alcamí, Antonio Portolés on behalf of the RescueVac study Group

[Full-Text HTML](#) | [PDF](#)**Predictors and determinants of albuminuria in people with prediabetes and diabetes based on smoking status: A cross-sectional study using the UK Biobank data**

Debasish Kar, Aya El-Wazir, Gayathri Delanerolle, Anna Forbes, James P. Sheppard, Mintu Nath, Mark Joy, Nicholas Cole, J. Ranjit Arnold, Andrew Lee, Michael Feher, Melanie J. Davies, Kamlesh Khunti, Simon de Lusignan, Elizabeth Goyder

[Full-Text HTML](#) | [PDF](#)**ENERGI-F703 gel, as a new topical treatment for diabetic foot and leg ulcers: A multicenter, randomized, double-blind, phase II trial**

Jui-Yung Yang, Cha-Chun Chen, Shun-Cheng Chang, Jiun-Ting Yeh, Hui-Fu Huang, Hwang-Chi Lin, Shang-Hsi Lin, Yu-Hsien Lin, Lin-Gwei Wei, Tom J. Liu, Shih-Yuan Hung, Hui-Mei Yang, Hui-Hsiu Chang, Chih-Hsin Wang, Yuan-Sheng Tzeng, Chieh-Huei Huang, Chang-Yi Chou, Ying-Sheng Lin, Shih-Yi Yang, Han-Min Chen, Jiun-Tsai Lin, Yi-Fang Cheng, Guang-Huar Young, Chun-Fang Huang, Ya-Chun Kuo, Niann-Tzyy Dai

[Full-Text HTML](#) | [PDF](#)**Factors that influence the implementation of organisational interventions for advancing women in healthcare leadership: A meta-ethnographic study**

Mariam Mousa, Helen Skouteris, Jacqueline A. Boyle, Graeme Currie, Kathleen Riach, Helena J. Teede

[Full-Text HTML](#) | [PDF](#)**Smartphone-based artificial intelligence using a transfer learning algorithm for the detection and diagnosis of middle ear diseases: A retrospective deep learning study**

Yen-Chi Chen, Yuan-Chia Chu, Chii-Yuan Huang, Yen-Ting Lee, Wen-Ya Lee, Chien-Yeh Hsu, Albert C. Yang, Wen-Huei Liao, Yen-Fu Cheng

[Full-Text HTML](#) | [PDF](#)**Safety and efficacy of mesenchymal stem cells in severe/critical patients with COVID-19: A systematic review and meta-analysis**

Weiqi Yao, Haibo Dong, Ji Qi, Yu Zhang, Lei Shi

[Full-Text HTML](#) | [PDF](#)**Accuracy of controlled attenuation parameter (CAP) and liver stiffness measurement (LSM) for assessing steatosis and fibrosis in non-alcoholic fatty liver disease: A systematic review and meta-analysis**

Yu-tian Cao, Liu-lan Xiang, Fang Qi, Yu-juan Zhang, Yi Chen, Xi-qiao Zhou

[Full-Text HTML](#) | [PDF](#)**Contribution of life course circumstances to the acceleration of phenotypic and functional aging: A retrospective study**

Xingqi Cao, Chao Ma, Zhoutao Zheng, Liu He, Meng Hao, Xi Chen, Eileen M. Crimmins, Thomas M. Gill, Morgan E. Levine, Zuyun Liu

[Full-Text HTML](#) | [PDF](#)**Trends in, projections of, and inequalities in non-communicable disease management indicators in Vietnam 2010–2030 and progress toward universal health coverage: A Bayesian analysis at national and sub-national levels**

Phuong The Nguyen, Stuart Gilmour, Phuong Mai Le, Hoa L. Nguyen, Thi Minh An Dao, Bao Quoc Tran, Minh Van Hoang, Huy Van Nguyen

[Full-Text HTML](#) | [PDF](#)**Severity, predictors and clinical correlates of Post-COVID syndrome (PCS) in Germany: A prospective, multi-centre, population-based cohort study**

Thomas Bahmer, Christoph Borzikowsky, Wolfgang Lieb, Anna Horn, Lilian Krist, Julia Fricke, Carmen Scheibenbogen, Klaus F. Rabe, Walter Maetzler, Corina Maetzler, Martin Laudien, Derk Frank, Sabrina Ballhausen, Anne Hermes, Olga Miljukov, Karl Georg Haeusler, Nour Eddine El Mokhtari, Martin Witzzenrath, Jörg Janne Vehreschild, Dagmar Kreftling, Daniel Pape, Felipe A. Montellano, Mirjam Kohls, Caroline Morbach, Stefan Störk, Jens-Peter Reese, Thomas Keil, Peter Heuschmann, Michael Krawczak, Stefan Schreiber on behalf of the NAPKON study group

[Full-Text HTML](#) | [PDF](#)

Prevalence of abnormal liver tests and liver fibrosis among rural adults in low and middle-income country: A cross-sectional study

Arulraj Ramakrishnan, Ganesan Velmurugan, Aravindh Somasundaram, Sundaresan Mohanraj, Dinakaran Vasudevan, Paari Vijayaragavan, Peter Nightingale, Krishnan Swaminathan, James Neuberger

[Full-Text HTML](#) | [PDF](#)

Continuation rates of two different-sized copper intrauterine devices among nulliparous women: Interim 12-month results of a single-blind, randomised, multicentre trial

David Hubacher, Courtney A. Schreiber, David K. Turok, Jeffrey T. Jensen, Mitchell D. Creinin, Kavita Nanda, Katharine O'Connell White, Ila Dayananda, Stephanie B. Teal, Pai-Lien Chen, Beatrice A. Chen, Alisa B. Goldberg, Jennifer L. Kerns, Clint Dart, Anita L. Nelson, Michael A. Thomas, David F. Archer, Jill E. Brown, Paula M. Castaño, Anne E. Burke, Bliss Kaneshiro, Diana L. Blithe

[Full-Text HTML](#) | [PDF](#)

Presentation and diagnosis of childhood-onset combined pituitary hormone deficiency: A single center experience from over 30 years

Johanna Hietamäki, Juho Kärkinen, Anna-Pauliina Iivonen, Kirsi Vaaralahti, Annika Tarkkanen, Henriikki Almusa, Hanna Huopio, Matti Hero, Päivi J. Miettinen, Taneli Raivio

[Full-Text HTML](#) | [PDF](#)

Kissing, fellatio, and anilingus as risk factors for oropharyngeal gonorrhoea in men who have sex with men: A cross-sectional study

Julien Tran, Jason J. Ong, Catriona S. Bradshaw, Marcus Y. Chen, Fabian Y.S. Kong, Jane S. Hocking, Ei T. Aung, Kate Maddaford, Christopher K. Fairley, Eric P.F. Chow

[Full-Text HTML](#) | [PDF](#)

Long-term opioid use and mortality in patients with chronic non-cancer pain: Ten-year follow-up study in South Korea from 2010 through 2019

In-Ae Song, Hey-ran Choi, Tak Kyu Oh

[Full-Text HTML](#) | [PDF](#)

Decompression alone or decompression and fusion in degenerative lumbar spondylolisthesis

Fei-Long Wei, Cheng-Pei Zhou, Quan-You Gao, Ming-Rui Du, Hao-Ran Gao, Kai-Long Zhu, Tian Li, Ji-Xian Qian, Xiao-Dong Yan

[Full-Text HTML](#) | [PDF](#)

Efficacy of a 3% Kānuka oil cream for the treatment of moderate-to-severe eczema: A single blind randomised vehicle-controlled trial

Nicholas Shortt, Alexander Martin, Kiley Kerse, Gabrielle Shortt, Iva Vakalalabure, Luke Barker, Joseph Singer, Bianca Black, Angela Liu, Allie Eathorne, Mark Weatherall, Marius Rademaker, Mike Armour, Richard Beasley, Alex Semprini on behalf of the Medical Research Institute of New Zealand's Pharmacy Research Network

[Full-Text HTML](#) | [PDF](#)

Subtyping of metastatic breast cancer based on plasma circulating tumor DNA alterations: An observational, multicentre platform study

Zhe-Yu Hu, Yu Tang, Liping Liu, Ning Xie, Can Tian, Binliang Liu, Lixin Zou, Wei Zhou, Yikai Wang, Xuefeng Xia, Quchang Ouyang

[Full-Text HTML](#) | [PDF](#)

At home and at risk: The experiences of Irish adults living with obesity during the COVID-19 pandemic

Emma Farrell, Eva Hollmann, Carel Le Roux, Joe Nadgłowski, Deirdre McGillicuddy

[Full-Text HTML](#) | [PDF](#)

Associations of birth weight and later life lifestyle factors with risk of cardiovascular disease in the USA: A prospective cohort study

Yi-Xin Wang, Yanping Li, Janet W. Rich-Edwards, Andrea A. Florio, Zhilei Shan, Siwen Wang, JoAnn E. Manson, Kenneth J. Mukamal, Eric B. Rimm, Jorge E. Chavarro

[Full-Text HTML](#) | [PDF](#)

Effect of donepezil for dementia prevention in Parkinson's disease with severe hyposmia (The DASH-PD study): A randomized long-term placebo-controlled trial

Toru Baba, Atsushi Takeda, Aya Murakami, Tadashi Koga, Tatsuya Isomura, Etsuro Mori DASH-PD study group

[Full-Text HTML](#) | [PDF](#)

Delayed diagnosis of Birt-Hogg-Dubé syndrome might be aggravated by gender bias

Ortrud K. Steinlein, Marlene Reithmair, Zulfia Syunyaeva, Elke C. Sattler

[Full-Text HTML](#) | [PDF](#)

Blind box over-engagement and suicide risk among adolescents and young adults: Results of a large-scale survey

Yinan Duan, Shicun Xu, Yinze Wang, Yanwen Zhang, Yuanyuan Wang, Runsen Chen

[Full-Text HTML](#) | [PDF](#)



Mitigating the mental health consequences of mass shootings: An in-silico experiment

Salma M. Abdalla, Gregory H. Cohen, Shailesh Tamrakar, Laura Sampson, Angela Moreland, Dean G. Kilpatrick, Sandro Galea

[Full-Text HTML](#) | [PDF](#)

Safety and immunogenicity of a SARS-CoV-2 recombinant protein nanoparticle vaccine (GBP510) adjuvanted with AS03: A randomised, placebo-controlled, observer-blinded phase 1/2 trial

Joon Young Song, Won Suk Choi, Jung Yeon Heo, Jin Soo Lee, Dong Sik Jung, Shin-Woo Kim, Kyung-Hwa Park, Joong Sik Eom, Su Jin Jeong, Jacob Lee, Ki Tae Kwon, Hee Jung Choi, Jang Wook Sohn, Young Keun Kim, Ji Yun Noh, Woo Joo Kim, François Roman, Maria Angeles Ceregado, Francesca Solmi, Agathe Philippot, Alexandra C. Walls, Lauren Carter, David Veessler, Neil P. King, Hun Kim, Ji Hwa Ryu, Su Jeen Lee, Yong Wook Park, Ho Keun Park, Hee Jin Cheong

[Full-Text HTML](#) | [PDF](#)

Suicide numbers during the first 9-15 months of the COVID-19 pandemic compared with pre-existing trends: An interrupted time series analysis in 33 countries

Jane Pirkis, David Gunnell, Sangsoo Shin, Marcos Del Pozo-Banos, Vikas Arya, Pablo Analuisa Aguilar, Louis Appleby, S. M. Yasir Arafat, Ella Arensman, Jose Luis Ayuso-Mateos, Yatan Pal Singh Balhara, Jason Bantjes, Anna Baran, Chittaranjan Behera, Jose Bertolote, Guilherme Borges, Michael Bray, Petrana Brečić, Eric Caine, Raffaella Calati, Vladimir Carli, Giulio Castelpietra, Lai Fong Chan, Shu-Sen Chang, David Colchester, Maria Coss-Guzmán, David Crompton, Marko Čurković, Rakhi Dandona, Eva De Jaegere, Diego De Leo, Eberhard A. Deisenhammer, Jeremy Dwyer, Annette Erlangsen, Jeremy S. Faust, Michele Fornaro, Sarah Fortune, Andrew Garrett, Guendalina Gentile, Rebekka Gerstner, Renske Gilissen, Madelyn Gould, Sudhir Kumar Gupta, Keith Hawton, Franziska Holz, Iurii Kamenshchikov, Navneet Kapur, Alexandr Kasal, Murad Khan, Olivia J. Kirtley, Duleeka Knipe, Kairi Kölves, Sarah C. Kölzer, Hryhorii Krivda, Stuart Leske, Fabio Madeddu, Andrew Marshall, Anjum Memon, Ellenor Mittendorfer-Rutz, Paul Nestadt, Nikolay Neznanov, Thomas Niederkrotenhaler, Emma Nielsen, Merete Nordentoft, Herwig Oberlerchner, Rory C. O'Connor, Rainer Papsdorf, Timo Partonen, Michael R. Phillips, Steve Platt, Gwendolyn Portzky, Georg Psota, Ping Qin, Daniel Radeloff, Andreas Reif, Christine Reif-Leonhard, Mohsen Rezaeian, Nayda Román-Vázquez, Saska Roskar, Vsevolod Rozanov, Grant Sara, Karen Scavacini, Barbara Schneider, Natalia Semenova, Mark Sinyor, Stefano Tambuzzi, Ellen Townsend, Michiko Ueda, Danuta Wasserman, Roger T. Webb, Petr Winkler, Paul S.F. Yip, Gil Zalsman, Riccardo Zoja, Ann John, Matthew J. Spittal

[Full-Text HTML](#) | [PDF](#)

ACCEPT 2-0: Recalibrating and externally validating the Acute COPD exacerbation prediction tool (ACCEPT)

Abdollah Safari, Amin Adibi, Don D. Sin, Tae Yoon Lee, Joseph Khoa Ho, Mohsen Sadatsafavi for the IMPACT study team

[Full-Text HTML](#) | [PDF](#)

Neutralising antibody responses to SARS-CoV-2 omicron among elderly nursing home residents following a booster dose of BNT162b2 vaccine: A community-based, prospective, longitudinal cohort study

Timothée Briel, Laurie Pinaud, Laura Tondeur, Delphine Planas, Isabelle Staropoli, Françoise Porrot, Florence Guivel-Benhassine, Mikaël Attia, Stéphane Pelleau, Tom Woudenberg, Cécile Duru, Aymar Davy Koffi, Sandrine Castelain, Sandrine Fernandes-Pellerin, Nathalie Jolly, Louise Perrin De Facci, Emmanuel Roux, Marie-Noëlle Ungeheuer, Sylvie Van Der Werf, Michael White, Olivier Schwartz, Arnaud Fontanet

[Full-Text HTML](#) | [PDF](#)

Association between metabolic overweight/obesity phenotypes and readmission risk in patients with lung cancer: A retrospective cohort study

Zinuo Yuan, Yiping Cheng, Junming Han, Dawei Wang, Hang Dong, Yingzhou Shi, Kyle L. Poulsen, Xiude Fan, Jiajun Zhao

[Full-Text HTML](#) | [PDF](#)

Development and validation of predictive risk models for sight threatening diabetic retinopathy in patients with type 2 diabetes to be applied as triage tools in resource limited settings

Manjula D. Nugawela, Sarega Gurudas, A. Toby Prevost, Rohini Mathur, John Robson, Thirunavukkarasu Sathish, J.M. Rafferty, Ramachandran Rajalakshmi, Ranjit Mohan Anjana, Saravanan Jebarani, Viswanathan Mohan, David R. Owens, Sobha Sivaprasad

[Full-Text HTML](#) | [PDF](#)

Global and regional projections of the economic burden of Alzheimer's disease and related dementias from 2019 to 2050: A value of statistical life approach

Arindam Nandi, Nathaniel Counts, Simiao Chen, Benjamin Seligman, Daniel Tortorice, Daniel Vigo, David E. Bloom

[Full-Text HTML](#) | [PDF](#)

Estimating the effect of donor sex on red blood cell transfused patient mortality: A retrospective cohort study using a targeted learning and emulated trials-based approach

Peter Bruun-Rasmussen, Per Kragh Andersen, Karina Banasik, Søren Brunak, Pär Ingemar Johansson

[Full-Text HTML](#) | [PDF](#)

Infant mortality and risk factors in Nigeria in 2013–2017: A population-level study

Damilola M. Shobiye, Ayomide Omotola, Yueming Zhao, Jianrong Zhang, Fitriana M. Ekawati, Hezekiah O. Shobiye

[Full-Text HTML](#) | [PDF](#)

A randomised, double-blind, placebo-controlled, multicentre clinical trial of AZD1656 in diabetic patients hospitalised with COVID-19: The ARCADIA Trial - implications for therapeutic immune modulation

Jamie Chorlton, Zoe Hollowood, Carlene Dyer, Donna Lockhart, Pascal Boekman, Kieran McCafferty, Pete Coffey, Federica Marelli-Berg, John Martin

[Full-Text HTML](#) | [PDF](#)



REVIEW

Preferences for pre-exposure prophylaxis for HIV: A systematic review of discrete choice experiments

Luh Putu Lila Wulandari, Shi Yi He, Christopher K. Fairley, Benjamin R. Bavinton, Heather-Marie Schmidt, Virginia Wiseman, Rebecca Guy, Weiming Tang, Lei Zhang, Jason J. Ong

[Full-Text HTML](#) | [PDF](#)

Preventing suicidal and self-Injurious behavior in correctional facilities: A systematic literature review and meta-analysis

Stefan Stijelja, Brian L. Mishara

[Full-Text HTML](#) | [PDF](#)

CORRIGENDUM


Corrigendum to “Effects of adding L-arginine orally to standard therapy in patients with COVID-19: A randomized, double-blind, placebo-controlled, parallel-group trial. Results of the first interim analysis.”

Giuseppe Fiorentino, Antonietta Coppola, Raffaele Izzo, Anna Annunziata, Mariano Bernardo, Angela Lombardi, Valentina Trimarco, Gaetano Santulli, Bruno Trimarco

[Full-Text HTML](#) | [PDF](#)

eClinicalMedicine

Part of THE LANCET *Discovery Science*

Log in 

THE LANCET



LANCET JOURNALS

- The Lancet
- The Lancet Child & Adolescent Health
- The Lancet Diabetes & Endocrinology
- The Lancet Digital Health
- The Lancet Gastroenterology & Hepatology
- The Lancet Global Health
- The Lancet Haematology
- The Lancet Healthy Longevity
- The Lancet HIV
- The Lancet Infectious Diseases
- The Lancet Microbe
- The Lancet Neurology
- The Lancet Oncology
- The Lancet Planetary Health
- The Lancet Psychiatry
- The Lancet Public Health
- The Lancet Regional Health – Americas
- The Lancet Regional Health – Europe
- The Lancet Regional Health – Southeast Asia
- The Lancet Regional Health – Western Pacific
- The Lancet Respiratory Medicine
- The Lancet Rheumatology
- eBioMedicine
- eClinicalMedicine

CLINICAL INITIATIVES

- The *Lancet* Clinic
- Commissions
- Series
- Picture Quiz
- GLOBAL HEALTH INITIATIVES
- Global Health Hub
- Commissions
- Series
- Global Burden of Disease
- Climate Countdown

MULTIMEDIA

- Infographics
- Podcasts
- Videos

INFORMATION

- About us
- For authors
- For advertisers
- For press
- Statement on offensive historical content
- Open access
- Publishing excellence
- Careers
- Community guidelines
- Peer review
- Preprints

ACCESS

- Access our content
- Personal subscriptions
- Existing print subscribers
- Request institutional access
- Research4Life

CONNECT

- Lancet* Alerts
- Contact us
- Customer service
- Our global team
- Conferences



We use cookies to help provide and enhance our service and tailor content and ads. To update your cookie settings, please visit the [Cookie Settings](#) for this site.
Copyright © 2023 Elsevier Inc. except certain content provided by third parties. The content on this site is intended for healthcare professionals.

[Privacy Policy](#) [Terms and Conditions](#) [Accessibility](#)



Preferences for pre-exposure prophylaxis for HIV: A systematic review of discrete choice experiments

Luh Putu Lila Wulandari,^{a,b,1} Shi Yi He,^{c,1} Christopher K. Fairley,^{d,e} Benjamin R. Bavinton,^a Heather-Marie Schmidt,^{f,g} Virginia Wiseman,^{a,h} Rebecca Guy,^a Weiming Tang,ⁱ Lei Zhang,^{c,d,e,1**} and Jason J. Ong^{c,d,e,j,2*}

^aThe Kirby Institute, University of New South Wales, Sydney, Australia

^bFaculty of Medicine, Udayana University, Bali Indonesia

^cChina-Australia Joint Research Center for Infectious Diseases, School of Public Health, Xi'an Jiaotong University Health Science Center, Xi'an, China

^dMelbourne Sexual Health Centre, Alfred Health, Melbourne, Australia

^eCentral Clinical School, Monash University, Melbourne, Australia

^fUNAIDS Regional Office for Asia and the Pacific, Bangkok, Thailand

^gGlobal HIV, Hepatitis and STIs Programme, World Health Organization, Geneva, Switzerland

^hDepartment of Global Health and Development, London School of Hygiene & Tropical Medicine, London, United Kingdom

ⁱDepartment of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, United States

^jDepartment of Clinical Research, London School of Hygiene & Tropical Medicine, Keppel Street London, London, United Kingdom

Summary

Background We aimed to systematically review the health preference literature using discrete choice experiments (DCEs), an attribute-based stated preference method, to investigate patient preferences for HIV pre-exposure prophylaxis (PrEP).

Methods A search in PubMed, Scopus, CINAHL, and Embase was conducted on July 1, 2021, and updated on November 3, 2021. We used two concepts to create our search strategy: (1) discrete choice experiments/conjoint analysis/best-worst scaling, and (2) HIV PrEP. The study is registered in PROSPERO (CRD42021267026).

Findings In total, 1060 studies were identified, and 18 were included in the analysis. Various attributes were examined, including dosing regimen, type of PrEP products, side effects, other side benefits, cost, effectiveness, dispensing venue, and additional support services. Dosing frequency, cost, the effectiveness of PrEP, dispensing venue, and side effects were the most common attributes examined in DCEs. Despite significant heterogeneity in preferences across subpopulations, overall, the most important attributes were cost (28%, 5/18), effectiveness (28%, 5/18) followed by dosing frequency (17%, 3/18).

Interpretation Notably, in studies where all of these three attributes were examined, some individuals would trade effectiveness for cost or vice versa. Ensuring PrEP is low cost or free, widely disseminating information of its effectiveness and advancements in reducing dosing frequency could accelerate the uptake of PrEP for those who would benefit from PrEP the most.

Funding None.

Copyright © 2022 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Keywords: Systematic review; Discrete choice experiment; Preferences; HIV; Pre-exposure prophylaxis

eClinicalMedicine

2022;51: 101507

Published online 9 July 2022

<https://doi.org/10.1016/j.eclim.2022.101507>

eclim.2022.101507

*Corresponding author at: 580 Swanston Street, Carlton, Victoria 3053, Australia.

**Corresponding author at: China-Australia Joint Research Center for Infectious Diseases, School of Public Health, Xi'an Jiaotong University Health Science Center, Xi'an, Shaanxi, 710061, China.

E-mail addresses: lei.zhang1@xjtu.edu.cn (L. Zhang), Jason.Ong@monash.edu (J.J. Ong).

¹ Equal first co-authors.

² Equal senior author.

Introduction

HIV pre-exposure prophylaxis (PrEP) is the use of anti-retroviral medications by people without HIV and offers up to 99% protection against HIV infection when taken as prescribed.¹ HIV PrEP is of benefit at an individual level and, by reducing HIV transmission, potentially at the population level as well.²⁻⁵ Due to its proven benefits, PrEP was recommended by the World Health Organization (WHO) in 2015 as an additional prevention choice for people at substantial risk of HIV as part of combination HIV prevention approaches.⁶⁻⁹ This was updated in 2019 to include the recommendation on event-driven or on-demand PrEP,¹⁰ and in 2021 on vaginal ring PrEP.¹¹

Current levels of PrEP access are not sufficient to significantly affect the course of the HIV pandemic.¹² Despite strong evidence on the benefits of PrEP, and a commitment by the United Nations to have 3 million people at high risk of HIV infection accessing PrEP by 2020,¹³ it is estimated that 927,277 were using PrEP at the end of 2020.¹⁴ In Q3 of 2021, the figure had increased to 1,544,777,¹⁴ with the majority of users located in the Americas (42%) and Africa (34%).^{12,15,16} Further, while the intention is for PrEP to be used dynamically in accordance with risk (i.e., particularly to be used during periods of risk), a systematic review reported that at least one-third of PrEP users had discontinued PrEP within six months.¹⁷ Several barriers were noted at the individual and structural levels, such as internalized stigma about risk behaviours (including stigma towards key populations and personal feelings of shame about having condomless sex), inaccurate perception of risk, financial or language barriers, and segmented health systems.^{18,19}

The design of a successful PrEP program, including the type of products being used and how products are delivered through the program, should involve affected communities from inception to implementation. This includes eliciting individuals' preferences so that programs can be tailored to meet their needs and preferences, consequently improving the appeal and uptake of PrEP. One method increasingly used to quantitatively measure preferences is discrete choice experiments (DCEs).²⁰ Government bodies increasingly utilize DCE surveys in their decision-making.^{21,22} In a DCE survey, participants are asked to choose their preferred option among two or more alternatives describing a product or service as a combination of attribute levels. These choice data provide information about the strength of preferences for attributes and how individuals trade off one attribute against another. In HIV research, DCEs have been used to elicit preferences towards several aspects of HIV care, including HIV testing and self-testing^{23,24} and HIV treatment services.²⁵

As PrEP programs continue to be scaled up globally, using different service delivery approaches and a range of new PrEP products (including injections²⁶

or vaginal rings²⁷), it is critical to understand and account for the values and preferences of people who would benefit from PrEP. In recent years, studies have been conducted to evaluate the preferences for PrEP using DCEs, however, there has not been a systematic review to synthesize the overall health preference evidence on this topic. These data could help inform guideline development, program planning, and implementation.²⁸ Thus, we aimed to review the existing health preference data for PrEP as elicited from DCEs.

Methods

We conducted a systematic review following guidance from the Cochrane Handbook 5.1.²⁹ The study was registered in the international prospective register of systematic reviews (PROSPERO, CRD42021267026).

Inclusion criteria

We included studies if they met the following criteria: (i) reported participant preferences for PrEP; and (ii) presented primary data using a DCE. No restrictions were placed on the publication date. We excluded qualitative studies, studies without primary data, duplicates, studies not in English, studies with no full text, conference papers, study protocols, and commentaries.

Search strategy

A literature search was conducted on July 1, 2021, and updated on November 3, 2021. We searched PubMed, Scopus, CINAHL, and Embase using two concepts to create our search strategy, combining the Mesh terms and free text words and synonyms of: (1) discrete choice experiments/conjoint analysis/best-worst scaling, and (2) HIV pre-exposure prophylaxis. Further details are provided in Supp.1.

Data screening and extraction

Two reviewers (LW, SH) independently screened the titles and abstracts for inclusion and identified eligible studies using the software, Covidence (Veritas Health Innovation, Australia). Subsequently, full texts were read independently by two reviewers (LW, SH) to determine their inclusion. All discrepancies were resolved by a third reviewer (JO). Full texts of the eligible studies were then independently extracted by two authors (LW, SH), and again checked by the third reviewer (JO) who resolved any discrepancies. We extracted the following data: author, country, year of publication, study year, the aim of the study, sampling strategy, inclusion criteria, recruitment site, number of participants, participants' risk group, experience with the PrEP product, and type of PrEP. We also extracted data related to the conduct of the DCE (survey administration,

attribute selection strategies, whether the DCE was piloted, experimental design, attributes and attribute levels used in the DCE, number of choice tasks per person, statistical models, and results). The quality of the study was evaluated using the PREFS checklist, a published tool used to assess the quality of studies examining preferences.³⁰

Data synthesis

Descriptive statistics were used to summarize the study characteristics (i.e. frequencies and percentages). We used narrative synthesis to provide an overview of included studies, focusing on how DCEs were conducted and their main results. We report our findings following The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines.³¹

Role of the funding source

No specific funding was received for this study. All authors took the decision to submit for publication. LPLW and HSY had access to the data.

Results

Study characteristics

In total, 1060 studies were found, and 18 studies were included in the analyses (Figure 1). Table 1 summarizes the major characteristics of the studies. Briefly, most studies (83%, 15/18) were published in or after 2018. Most focused on preferences of men who have sex with men (MSM) (ten studies), followed by female sex workers (FSW) (five studies), four among youth or adolescents, and two included injecting drug users (IDUs).

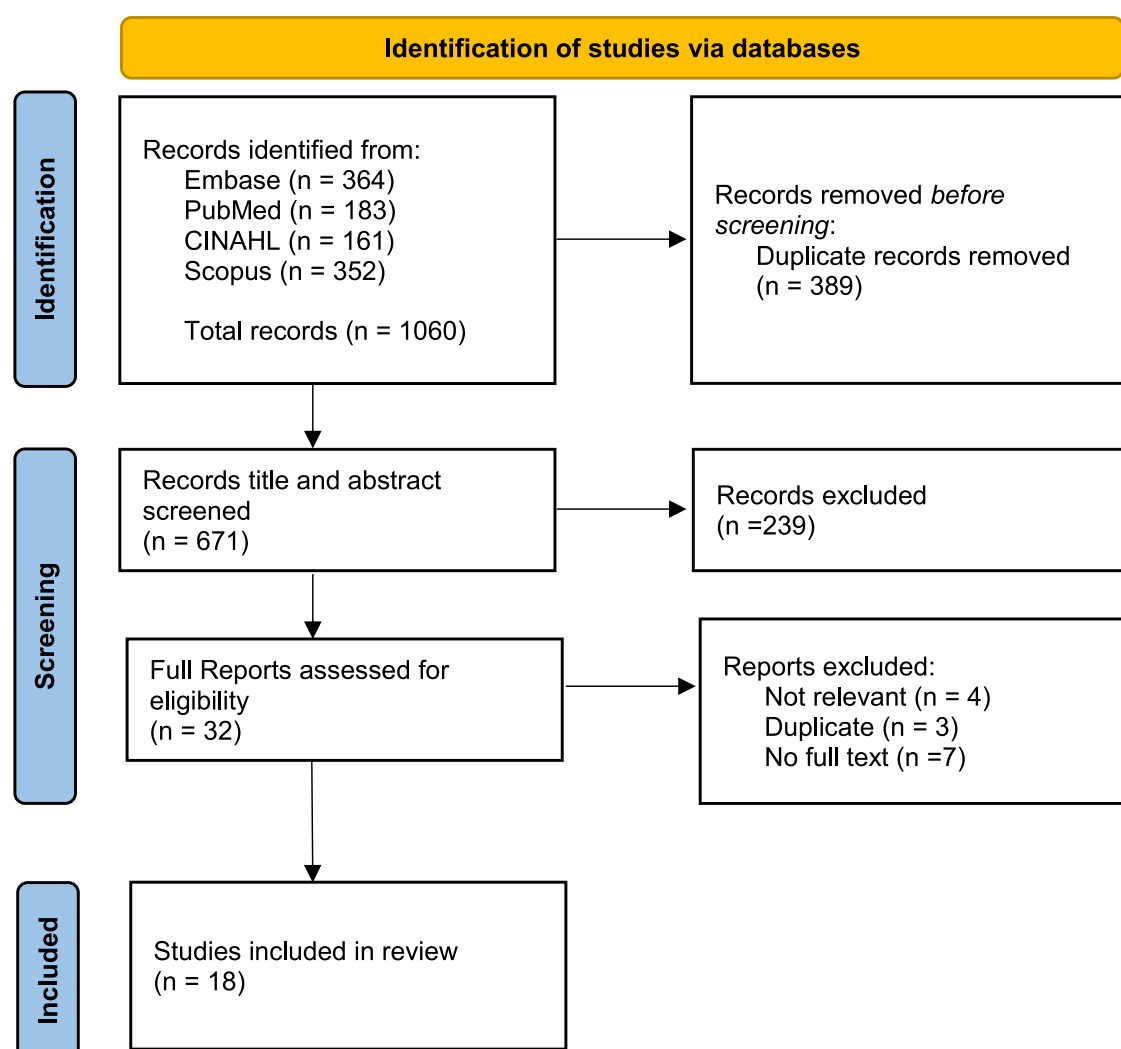


Figure 1. Schematic flowchart demonstrating the identification, screening and inclusion of studies, based on the inclusion and exclusion criteria.

Authors	Year of study	Country	Population	Inclusion Criteria
Browne et al ⁴⁵	2016-2017	Zimbabwe and South Africa	Women	Aged 18-31 years, Female, HIV-negative, Sexually active, Microbicide and PrEP naïve, Not pregnant.
Chakrapani et al ⁵⁸	2016-2017	India	MSM	Aged 18 years or more, Self-identified as kothi, gay, bisexual, versatile, panthi or MSM, Sexually active with another man in the previous month, Willing to provide consent for participation, Willing to invite peers.
Dubov et al ³⁹	2016	Ukraine	MSM	Aged 18 years or more, Self-reported HIV-negative, Any sexual contact with another man in the past six months, No previous history of using Truvada for PrEP.
Dubov et al ⁶¹	2015	U.S.	MSM	Aged 18 years or more, Self-identifying as MSM, Self-reported HIV-negative, No previous PrEP experience.
Eisingerich et al ⁶²	2010-2011	Peru, Ukraine, India, Kenya, Botswana, Uganda and South Africa.	FSW, MSM, IDU, SDC and young women	Aged 18 (16 for young women in Botswana) years or more, Self-reporting a negative or unknown HIV serostatus, Sexually active, Not participating in a market research study in the past 12 months.
Galea et al ⁴²	-	Peru	FSW, male-to-female TG, MSM	Self-reported HIV-negative
Gutierrez et al ⁵⁰	2020	U.S.	U.S. military MSM and trans-individuals	Self-reported HIV-negative
Kuteesa et al ⁶³	2016-2017	Uganda	Residents of the fishing community	Aged 18 years or more, Residence in the fishing community for over three months.
Lancaster et al ⁵⁷	2016-2017	Malawi	FSW	Aged 18 years or more, Be able to speak English or Chichewa, the predominant local language, HIV-negative.
Minnis et al ⁵¹	2017-2019	South Africa	Youth	Aged 18 to 24 years, Female and male youth, Had not participated in a biomedical HIV prevention trial of a PrEP product.
Minnis et al ³⁸	2015-2017	South Africa and Kenya	Young women	Aged 18 to 30 years, Young women, Had participated in a biomedical prevention trial of PrEP product (TRIO Study), Women from the same communities who had not used the three PrEP products in the same study.
Montgomery et al ⁵²	2017-2019	South Africa	Youth including MSM	Aged 18–24 years, Residing in the sampled residential plot, Had not participated in a biomedical HIV prevention trial of a PrEP product.

Table 1 (Continued)

Authors	Year of study	Country	Population	Inclusion Criteria
Pines et al ⁵⁴	2016-2017	Mexico	FSW	Aged 18 years or more, Cisgender female, HIV-negative, Reported exchanging sex for money, drugs, or goods (past month), Reported condom-unprotected vaginal/anal sex with a client (past month), Agreed to accept free treatment if they tested STI-positive, Owned a cell phone.
Quaife et al ⁶⁵	2015	South Africa	Adult males and females, adolescent girls, FSW	Adult men and women, and adolescent girls, Adolescent girls did not require to be sexually active.
Salinas-Rodriguez et al ⁶⁶	2018-2019	Mexico	MSW	Aged 18 years or more, Assigned male sex at birth, Be able to read and speak Spanish fluently, Had tested negative for HIV at least once in the past six months, self-reported sexual penetration or oral sex in the last six months with at least eight men, having exchanged money, drugs, alcohol or gifts for sex a minimum of 8 times in the last month, Be able to provide written informed consent for study participation.
Shrestha et al ⁴¹	2016	U.S.	IDUs	Aged 18 years or more, HIV-negative, Drug- or sex-related HIV risk behaviours in the past six months.
Tan et al ⁴⁰	2019	Singapore	MSM	Aged 18 years or more, Identify as a cisgender or transgender male, Identify as non-heterosexual, Being a Singapore citizen, resident, or a foreign national residing in Singapore for more than a year at the point of the survey, HIV-negative.
Wheelock et al ⁶⁷	2011	Thailand	MSM, TGW	Aged 18 years or more, Self-identifying as MSM, Self-reporting a negative or unknown HIV serostatus, Being sexually active, Not participating in a market research study in the past 12 months.

Table 1: Characteristics of 18 included discrete choice experiment studies on pre-exposure prophylaxis for HIV.

PrEP = HIV Pre-exposure prophylaxis; MSM = Men who have sex with men; kothi = feminine gender expression, mostly receptive sexual role; versatile = insertive and receptive sexual roles, self-identified as “double-decker” in Chennai; panthi = masculine gender expression, primarily insertive sexual role; FSW = female sex workers; IDU = injecting drug users; SDC = serodiscordant couples; male-to-female TG = male-to-female transgender; PrEP product = i.e. vaginal gel, vaginal ring, oral tablet or injection; TRIO study = the Tablet, Ring, Injection as Options Study; Adult = aged 18 to 49 years; adolescent = age 16 to 17 years; STI = Sexually transmitted infections; MSW = male sex workers; IDUs = injecting drug users; TGW= transgender women.



Figure 2. Geographical location of 18 included studies in 13 countries.

The studies were conducted in 13 countries. Three studies (17%) were conducted in multiple countries, four (22%) were from high-income countries, ten (56%) were from middle-income countries, and two (11%) were from low-income countries.

The studies were conducted in 13 countries. Three studies (17%) were conducted in multiple countries, four (22%) were from high-income countries, ten (56%) were from middle-income countries, and two (11%) were from low-income countries (Figure 2).

The implementation of the DCE

Among these 18 studies, 13 (72.2%) were conducted face-to-face. Fifteen (83%) explicitly mentioned the use of formative research before the conduct of the DCE, including through focus group discussions or interviews with target groups or communities, academics, or policymakers. Twelve (67%) studies reported conducting a pilot DCE survey before the main study. The number of choice tasks per person ranged from 4 to 14, with a median of 8. Among those studies that provided the information, two recruited product naïve participants, and three involved both product naïve and experienced participants. (Table 2).

Attributes included in DCE studies

Various attributes were examined, including dosing regimen, type of PrEP products, side effects, other side benefits, cost, effectiveness, dispensing venue, and additional support services. Dosing frequency, cost, the effectiveness of PrEP, dispensing venue, and side effects were the most common attributes examined in DCEs. Despite variations in preferences across subpopulations, overall, important attributes most frequently preferred by the participants were cost (28%, 5/18), effectiveness

(28%, 5/18) followed by dosing frequency (17%, 3/18). Notably, in studies where all these three attributes were examined, some individuals would trade effectiveness for cost or vice versa (Table 3).

Assessment of the study quality

The overall reporting quality was acceptable but left some room for improvement. Fifteen studies met four of the five PREFS criteria and three met only three. The mean score was 3.83 (standard deviation [SD] 0.38), and the scores ranged from 3 to 4 (Supp. 2). None of the studies reported on differences between responders and non-responders, which might lead to non-response bias. Also, three studies excluded some responders from the analysis but did not investigate the impact of these exclusions on study results. The most commonly noted reasons for exclusion were that responders failed the comprehension test or did not answer enough choice tasks.

Discussion

This systematic review synthesizes the existing health preference data for PrEP as elicited from published DCEs. Our study adds to the literature by highlighting the values and preferences of populations that would benefit from PrEP. We found 18 studies that were conducted in 13 countries. These studies revealed that dosing frequency, cost, the effectiveness of PrEP, dispensing venue, and side effects were the most common attributes included in DCEs. Notwithstanding

Authors	Type of participants (experience with the product)	Survey administration	Attributes Selection	Pilot tested DCE	Experimental study design	Number of choice tasks per person	Statistical models
Browne et al ⁴⁵	Product-experienced and product-naïve	Face-to-face, using a tablet device	Literature review	Yes	D-efficient design	8	Random-parameters logit (RPL) model
Chakrapani et al ⁵⁸	Not clear	Face-to-face, using a tablet device	Literature review and qualitative research with MSM	Yes	D-efficient design	8	RPL
Dubov et al ³⁹	Product-naïve	Online survey	Literature review, in-depth discussions with multiple stakeholders, including public health researchers, PrEP community activists, and MSM	Yes	Sawtooth Software's experimental design module	14	Latent class analysis (LCA)
Dubov et al ⁶¹	Product-naïve	Online survey	Literature review, and in-depth discussions with multiple stakeholders	Yes	Sawtooth Software's experimental design module	14	LCA
Eisingerich et al ⁶²	Not clear	Face-to-face	Literature review, discussions with academic, policy, and industry experts	Yes	'Efficient' design using SAS 9.3 software	10	Hierarchical Bayes (HB)
Galea et al ⁴²	Not clear	Face to face	Literature review, focus group discussions	Yes	Fractional factorial orthogonal design	8	One-way analysis of variance (ANOVA) model
Gutierrez et al ⁵⁰	Product-experienced and product-naïve	Online survey	Literature review, in-depth qualitative interviews among PrEP experts and military MSM	Yes	Sawtooth Software's experimental design module	8	HB
Kuteesa et al ⁶³	Not clear	Face to face	Scoping review, focus group discussions and individual interviews	Yes	D-efficient design	10	Multinomial logit (MNL) + LCA
Lancaster et al ⁵⁷	Not clear	Face to face, interviewer-administered	Literature review, focus group discussions	Not clear	Sawtooth Software's experimental design module	8	RPL
Minnis et al ⁵¹	Not clear	Face-to-face, interviewer assisted	In-depth interviews, focus group discussions, expert consultations, feedback, and pretesting	Yes	D-efficient design	9	RPL
Minnis et al ³⁸	Product-experienced and product-naïve	Face-to-face	In-depth interviews	Yes	D-efficient design	8	RPL
Montgomery et al ⁵²	Not clear	Face to face, tablet-device	'Formative research'	Yes	Not clear	9	LCA
Pines et al ⁶⁴	Not clear	Interviewer-administered, face to face survey	Literature review	Not clear	D-efficient design	12	MNL
Quaife et al ⁶⁵	Not clear	Interviewer administered, face to face, tablet-device	Literature review and focus-group discussions	Yes	D-efficient design	10	MNL + LCA
Shrestha et al ⁴¹	Not clear	Audio computer-assisted self-interview	Literature review and discussions with experts	Not clear	Fractional factorial orthogonal design	8	'Conjoint analysis'
Tan et al ⁴⁰	Not clear	Online	Literature review	Yes	Sawtooth Software's experimental design module	4	MNL, generalized multinomial logit model (GMNL), LCA
Wheelock et al ⁶⁷	Not clear	Interviewer-administered, face to face survey	Literature review and discussions with experts	Not clear	Orthogonal fractional factorial design	10	HB
Salinas-Rodriguez et al ⁶⁶	Not clear	Face to face, via computer tablets.	Literature review	Yes	Not clear	8	MNL, RPL and rank-ordered logit

Table 2: Conduct of the discrete choice experiments.

Authors	Dosing regimen	Type of PrEP	Benefits	Extra services	Additional benefits	Barriers	Access	Most important
Browne et al ⁴⁵	Timing	Mode of insertion	Effectiveness of HIV prevention		Pregnancy prevention, Use in secret	Side effects		Effectiveness of HIV prevention
Chakrapani et al ⁵⁸	Timing		Effectiveness of HIV prevention			Cost, Side effects	Dispensing location	Effectiveness of HIV prevention
Dubov et al ³⁹	Timing			Monitoring, Adherence support		Cost	Dispensing location	Cost
Dubov et al ⁶¹	Timing			Monitoring, Adherence support		Cost	Dispensing location	Cost
Eisingerich et al ⁶²	Timing	Product form		Monitoring		Time spent obtaining PrEP	Dispensing location, Frequency of pick up	Timing
Galea et al ⁴²	Timing, Duration of use		Effectiveness of HIV prevention			Cost, Side effects	Dispensing location, Provider type	Cost
Gutierrez ⁵⁰		Product form		Monitoring			Dispensing location, Provider type	Product form
Kuteesa ⁶³		Product form	Effectiveness of HIV prevention		Pregnancy/STI prevention, Use in secret	Waiting time		Effectiveness of HIV prevention
Lancaster ⁵⁷				Additional preventive services		Waiting time	Dispensing location, Provider type, Frequency of pick up	Dispensing location
Minnis et al ⁵¹	Timing	Product form, Delivery location on the body				Side effects	Dispensing location	Timing
Minnis et al ³⁸	Timing		Effectiveness of HIV prevention			Side effects; Impact on menstruation		Effectiveness of HIV prevention
Montgomery et al ⁵²	Timing	Product form, Delivery location on the body				Side effects	Dispensing location	Timing
Pines et al ⁶⁴	Timing	Product form	Effectiveness of HIV prevention		STI prevention	Cost, Side effects	Dispensing location	Product form
Quaife et al ⁶⁵	Timing	Product form	Effectiveness of HIV prevention		Pregnancy/STI prevention	Side effects		Effectiveness of HIV prevention
Salinas-Rodriguez et al ⁶⁶				Incentives (amount, format, type), Adherence test				Incentives type
Shrestha et al ⁴¹	Timing		Effectiveness of HIV prevention	Monitoring		Cost, side effects	Dispensing location	Cost
Tan et al ⁴⁰			Effectiveness of HIV prevention	Monitoring	STI prevention	Cost	Dispensing location	Cost
Wheelock et al ⁶⁷	Timing			Monitoring		Waiting time	Dispensing location, Frequency of dispensing medication	Monitoring

Table 3: Attributes included in the discrete choice experiment studies.

variations in preferences across subpopulations, cost, PrEP effectiveness and dosing frequency were the main drivers for PrEP use across the studies.

Despite there being at least 84 countries with PrEP programs³² and 120 countries adopting PrEP recommendations in their national guidelines,¹⁶ our systematic review found only 18 studies from 13 countries with data on PrEP preferences elicited from DCEs. These were mostly conducted in countries such as the U.S., South Africa, and Thailand, with relatively larger numbers of PrEP initiations.³² In contrast, we did not find choice data from countries with lower rates of PrEP initiatives but with higher rates of HIV incidence among key populations, such as the Philippines. This highlights gaps in the current literature and the importance of focusing efforts on deriving preference data to improve program acceptability and efficiency. As has been seen in the case of contraceptives, methods involving different attributes whereby individuals could choose and trade one characteristic for another, have the potential to play a significant role in promoting uptake and coverage.³³

The methods used to elicit preferences under the DCE approach are important when involving respondents from marginalized populations.³⁴ We found that the majority of DCE surveys were conducted using face-to-face interviews. This method may enable respondents to ask questions or receive assistance with the DCE survey if required but could lead to social desirability bias (i.e., the tendency to provide a socially desirable response³⁵). This must be balanced against the convenience and confidentiality of an online DCE survey, which may overrepresent those with better education and higher income.³⁶ Some studies did not conduct a pilot test before the DCE survey. This may impact the comprehensibility of the survey, particularly when participants have lower education levels, or are from a different cultural background.³⁷ It is also worth noting that some studies included experienced PrEP users while others only recruited PrEP-naïve participants. Although we did not find significant differences in preferences across these two groups, it should be acknowledged that preferences may change depending on experience and contact with the products.³⁸ This might also be important for countries newly introducing PrEP or those with limited availability and low awareness of PrEP versus countries with well-established programs with good community awareness. Therefore, we recommend that future DCEs include both PrEP-experienced and PrEP-naïve respondents where possible, to assess whether preferences differ between the two groups.

The cost was a significant driver in the choice to use PrEP across a range of settings and populations. For example, in Ukraine, the high cost of PrEP played a prominent role in the choice of MSM to use PrEP and making PrEP on demand more attractive.³⁹ Similarly, in a study from Singapore, cost-related issues were the

main barriers to accessing PrEP, as PrEP remains unsubsidized by the government.⁴⁰ In the United States, IDUs reported higher acceptability of PrEP if the cost was covered by insurance.⁴¹ Furthermore, a study from Peru found that people were significantly more likely to use PrEP with a low out-of-pocket cost or when it was supplied free of charge.⁴² Key populations and their sexual partners accounted for 65% of new HIV infections globally in 2020⁴³; they are also underserved by HIV prevention programs,¹² highlighting major gaps in access to effective biomedical prevention methods like PrEP. Together, this reinforces the importance of the need for free or subsidized PrEP to reach populations who would benefit most from PrEP. Increasing efforts by countries to integrate WHO PrEP recommendations into national guidelines¹⁶ should also be supported through technical assistance to design financial subsidies for national PrEP programs, including the integration of PrEP into the national health insurance coverage schemes.

The perceived effectiveness of PrEP was another important driver of the choice to use PrEP. Evidence of the effectiveness of oral PrEP is well-established and closely linked with adherence.⁴⁴ For example, in a study of young women in South Africa and Kenya, HIV prevention effectiveness was the most important factor influencing the choice to use PrEP.³⁸ Interestingly, although women continue to have high rates of HIV acquisition in Sub-Saharan Africa, the majority were willing to exchange higher effectiveness for other desired attributes (such as the impact on vaginal wetness, pregnancy prevention and dosing regimen), according to a study of women in South Africa and Zimbabwe.⁴⁵ Research has shown that the perceptions of effectiveness among target populations influence the acceptance and in turn, the uptake of biomedical interventions.⁴⁶ Therefore, wider promotion of PrEP's high effectiveness may attract people to consider PrEP. The potential use of dating apps to promote PrEP information may be considered, as it has been shown elsewhere to positively affect beliefs about PrEP effectiveness.⁴⁷ For example, Grindr (one of the most popular dating apps) users are more likely to be interested in taking⁴⁸ and initiating PrEP.⁴⁹

Dosing frequency was another important driver of choices around the use of PrEP. This is particularly important as new PrEP products come onto the market. Notably, we found this attribute differed significantly across populations, emphasizing the need to obtain context-specific values and preferences data, particularly in regards to the dosing frequency of PrEP. For example, one US study reported that daily oral PrEP was the most desired option for US military MSM and trans-individuals, whereas bi-monthly PrEP injection was most preferred by those who had never used PrEP before.⁵⁰ Another study showed that youth in South Africa favoured long-acting options: females and MSM

preferred an injection, which could indicate a strong concern for discreteness in HIV product selection, whereas MSW preferred an implant.^{51,52} Confidentiality was a prominent issue that influenced dosing frequency, particularly among key populations. The stigma associated with PrEP also remains a barrier to its uptake, use, and maintenance.⁵³ In addition, dosing frequency is related to adherence to medication. A meta-analysis reported that reducing the dosage frequency from multiple dosing to one daily dose increases the likelihood of better adherence to therapies across acute and chronic diseases.⁵⁴ This could also apply to PrEP use, where evidence shows a preference among users for injectable or implantable PrEP with long-acting characteristics compared with oral PrEP⁵⁵; and better adherence to less frequently dosed injectable PrEP than daily oral PrEP.²⁶ This may also support the WHO's recommendation on event-driven (as an alternative to daily PrEP),¹⁰ to allow users to have PrEP interruptions during periods of low risk, as a way to improve sustainable PrEP uptake.⁵⁶ Therefore, programs should effectively support users to adjust their dosing frequency according to fluctuations in their risk level.

Finally, as different service delivery models are considered for scaling up PrEP, it is important to understand the preferences of those who would benefit from PrEP. In general, we found that most participants were willing to receive PrEP in a healthcare setting, but there was some variation in preferences for services. For example, a study in Malawi reported that dispensing location was most important for female sex workers, who preferred accessing PrEP from a family planning clinic or non-government organization (NGO)-run drop-in centre, compared with HIV clinics, STI clinics or NGO-run mobile outreach facilities.⁵⁷ A DCE of MSM in India found that participants preferred to acquire PrEP from a government hospital rather than a private one.⁵⁸ This may be because participants believe that government-funded PrEP programs are only available through public hospitals.⁵⁸ A study from Peru among MSM, transgender individuals and sex workers reported that even though participants shared concerns about stigma and discrimination among health care professionals, they suggested that these professionals were more qualified to distribute PrEP than pharmacists.⁴²

A key strength of this systematic review is that it provides an overview of PrEP preferences from a range of geographical settings, population target groups, product attributes, and survey approaches. We specifically focused on studies that used a DCE methodology, as this is one of the recommended methods to elicit preferences for new medical products or services that do not currently exist. Our study should also be read in light of some limitations. First, due to the differences in study attributes, performing a meta-analysis was unlikely to be meaningful. Instead, we qualitatively synthesized

and summarized the range of attributes that may be helpful in the formative stage of attribute selection in future DCE surveys examining PrEP preferences. Similarly, due to unknown differences in the scale of the part-worth utilities from each study, we were not able to perform a statistical assessment of this variation. Second, this review was limited only to studies published in English, which may lead to language bias.⁵⁹ While we intentionally focused on studies in peer-reviewed journals - excluding the grey literature to ensure the quality of studies selected - we may have missed other relevant literature.⁶⁰ Finally, most DCE studies have focused on product attributes and used simplistic attributes related to service delivery (such as dispensing venue or additional support services). It would be beneficial for future research to provide greater detail regarding how PrEP services should be designed to optimize uptake.

In conclusion, this systematic review synthesized the global evidence on preferences for PrEP elicited using the DCE approach. Cost, PrEP effectiveness and dosing frequency were the main drivers of choice for PrEP use across the studies. We also found significant variation in preferences across subpopulations. This underscores the importance of conducting context-specific health preference research to optimize PrEP use among people who would benefit from PrEP the most.

Contributors

LPLW and HSY: identification of papers and data extraction, formal analysis, validation, visualisation, writing – original draft, and writing – review & editing, contributed equally. JJO: conceptualisation, identification of papers and data extraction, formal analysis, investigation, resources, software, supervision, validation, writing – original draft, and writing – review & editing. LZ: contribute to the supervision of the study. All other authors: conceptualisation, writing – review & editing. All authors took the decision to submit for publication.

Data sharing statement

Datasets of this study are available upon reasonable request to the corresponding author (JJO).

Declaration of interests

Dr. Bavinton reports grants from ViiV Healthcare, grants from Gilead Sciences, personal fees from Gilead Sciences, personal fees from Gilead Sciences, outside the submitted work. All other authors have nothing to declare.

Funding

There was no funding source for this study.

Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.eclinm.2022.101507.

References

- Centres for Disease Control and Prevention. Effectiveness of prevention strategies to reduce the risk of acquiring or transmitting HIV. <https://npin.cdc.gov/publication/effectiveness-prevention-strategies-reduce-risk-acquiring-or-transmitting-hiv>. Accessed 13 Jan 2022.
- Estcourt C, Yeung A, Nandwani R, et al. Population-level effectiveness of a national HIV preexposure prophylaxis programme in MSM. *AIDS*. 2021;35(4):665–673.
- Grulich AE, Guy R, Amin J, et al. Population-level effectiveness of rapid, targeted, high-coverage roll-out of HIV pre-exposure prophylaxis in men who have sex with men: the EPIC-NSW prospective cohort study. *Lancet HIV*. 2018;5(11):e629–e637.
- Phanuphak N, Sungsing T, Jantarapakde J, et al. Princess PrEP program: the first key population-led model to deliver pre-exposure prophylaxis to key populations by key populations in Thailand. *Sex Health*. 2018;15(6):542–555.
- Smith DK, Sullivan PS, Cadwell B, et al. Evidence of an association of increases in pre-exposure prophylaxis coverage with decreases in human immunodeficiency virus diagnosis rates in the United States, 2012–2016. *Clin Infect Dis*. 2020;71(12):3144–3151.
- UNAIDS. Global AIDS strategy 2021–2026 — end inequalities. End AIDS. 2021.
- UNAIDS. Political declaration on HIV and AIDS: ending inequalities and getting on track to end AIDS by 2030. 2021.
- World Health Organization. *Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection*. 2nd ed. World Health Organization; 2016.
- World Health Organization. *Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations — 2016 Update*. Geneva: World Health Organization; 2016.
- World Health Organization. *What's the 2+1+1? Event-Driven Oral Pre-Exposure Prophylaxis to Prevent HIV for Men Who have sex with men: Update to WHO's recommendation on oral PrEP*. 2019.
- World Health Organization. *WHO recommends the dapivirine vaginal ring as a new choice for HIV prevention for women at Substantial Risk of HIV Infection*. 2021.
- UNAIDS. 2021 Global AIDS update slideset. 2021.
- United Nations General Assembly. Political declaration on HIV and AIDS: on the fast track to accelerating the fight against HIV and to ending the AIDS epidemic by 2030. 2016.
- AVAC. Global PrEP tracker New York; 2020.
- Global PrEP Network. Global state of PrEP. 2021.
- Schaefer R, Schmidt H-MA, Ravasi G, et al. Adoption of guidelines on and use of oral pre-exposure prophylaxis: a global summary and forecasting study. *Lancet HIV*. 2021;8(8):e502–e510.
- Fonner VA, Dalglish SL, Kennedy CE, et al. Effectiveness and safety of oral HIV preexposure prophylaxis for all populations. *AIDS*. 2016;30(12):1973–1983.
- Edeza A, Karina Santamaria E, Valente PK, Gomez A, Ogunbajo A, Biello K. Experienced barriers to adherence to pre-exposure prophylaxis for HIV prevention among MSM: a systematic review and meta-ethnography of qualitative studies. *AIDS Care*. 2021;33(6):697–705.
- Sidebottom D, Ekström AM, Strömdahl S. A systematic review of adherence to oral pre-exposure prophylaxis for HIV — how can we improve uptake and adherence? *BMC Infect Dis*. 2018;18(1):581.
- Soekhai V, de Bekker-Grob EW, Ellis AR, Vass CM. Discrete choice experiments in health economics: past, present and future. *Pharmacoeconomics*. 2019;37(2):201–226.
- Commonwealth of Australia as represented by the Department of Health. *Guidelines for Preparing a Submission to the Pharmaceutical Benefits Advisory Committee*. 2016. <https://pbac.pbs.gov.au/>.
- National Institute for Health and Care Excellence. NICE Provides First Scientific Advice on Patient Preference Study Design. <https://www.nice.org.uk/news/article/nice-provides-first-scientific-advice-on-patient-preference-study-design>. Accessed 13th Jan 2022.
- Ong JJ, De Abreu Lourenco R, Street D, et al. The preferred qualities of human immunodeficiency virus testing and self-testing among men who have sex with men: a discrete choice experiment. *Value Health*. 2020;23(7):870–879.
- Sharma M, Ong JJ, Celum C, Terris-Prestholt F. Heterogeneity in individual preferences for HIV testing: a systematic literature review of discrete choice experiments. *EClinicalMedicine*. 2020;29.
- Eshun-Wilson I, Kim HY, Schwartz S, Conte M, Glidden DV, Geng EH. Exploring relative preferences for HIV service features using discrete choice experiments: a synthetic review. *Curr HIV/AIDS Rep*. 2020;17(5):467–477.
- Landovitz RJ, Donnell D, Clement ME, et al. Cabotegravir for HIV prevention in cisgender men and transgender women. *N Engl J Med*. 2021;385(7):595–608.
- Nel A, van Niekerk N, Kapiga S, et al. Safety and efficacy of a dapivirine vaginal ring for HIV prevention in women. *N Engl J Med*. 2016;375(22):2133–2143.
- World Health O. *WHO Handbook for Guideline Development*. 2nd ed. Geneva: World Health Organization; 2014.
- Higgins JPT, Green S. *Cochrane Handbook for Systematic Reviews of Interventions*. 1 ed. Hoboken: Wiley; 2008.
- Bridges JF, Hauber AB, Marshall D, et al. Conjoint analysis applications in health—a checklist: a report of the ISPOR good research practices for conjoint analysis task force. *Value Health*. 2011;14(4):403–413.
- Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med*. 2009;6.
- AVAC. PrEP watch. 2021.
- Ross J, Stover J. Use of modern contraception increases when more methods become available: analysis of evidence from 1982–2009. *Glob Health Sci Pract*. 2013;1(2):203–212.
- De Abreu Lourenço R, Devlin N, Howard K, et al. Giving a voice to marginalised groups for health care decision making. *Patient*. 2021;14(1):5–10.
- Krumpal I. Determinants of social desirability bias in sensitive surveys: a literature review. *Qual Quant*. 2013;47(4):2025–2047.
- Szolnoki G, Hoffmann D. Online, face-to-face and telephone surveys—comparing different sampling methods in wine consumer research. *Wine Econ Policy*. 2013;2(2):57–66.
- Mangham LJ, Hanson K, McPake B. How to do (or not to do) ... designing a discrete choice experiment for application in a low-income country. *Health Policy Plan*. 2009;24(2):151–158.
- Minnis AM, Browne EN, Boeri M, et al. Young women's stated preferences for biomedical HIV prevention: results of a discrete choice experiment in Kenya and South Africa. *JAIDS J Acquir Immune Defic Syndr*. 2019;80(4).
- Dubov A, Fraenkel L, Yorick R, Ogunbajo A, Altice FL. Strategies to implement pre-exposure prophylaxis with men who have sex with men in Ukraine. *AIDS Behav*. 2018;22(4):1100–1112.
- Tan RKJ, Wang Y, Prem K, et al. HIV pre-exposure prophylaxis, condoms, or both? Insights on risk compensation through a discrete choice experiment and latent class analysis among men who have sex with men. *Value Health*. 2021;24(5):714–723.
- Shrestha R, Karki P, Altice FL, et al. Measuring acceptability and preferences for implementation of pre-exposure prophylaxis (PrEP) using conjoint analysis: an application to primary HIV prevention among high risk drug users. *AIDS Behav*. 2018;22(4):1228–1238.
- Galea JT, Kinsler JJ, Salazar X, et al. Acceptability of pre-exposure prophylaxis as an HIV prevention strategy: barriers and facilitators to pre-exposure prophylaxis uptake among at-risk Peruvian populations. *Int J STD AIDS*. 2011;22(5):256–262.
- UNAIDS. *Confronting inequalities: lessons for pandemic responses from 40 years of AIDS*. 2021.
- Dimitrov DT, Masse BR, Donnell D. PrEP adherence patterns strongly affect individual HIV risk and observed efficacy in randomized clinical trials. *J Acquir Immune Defic Syndr*. 2016;72(4):444–451.
- Browne EN, Montgomery ET, Mansfield C, et al. Efficacy is not everything: eliciting women's preferences for a vaginal HIV prevention product using a discrete-choice experiment. *AIDS Behav*. 2020;24(5):1443–1451.
- Raude J, Caille-Brillet A-L, Setbon M. The 2009 pandemic H1N1 influenza vaccination in France: who accepted to receive the vaccine and why? *PLoS Curr*. 2010;2:RRN1188.
- Schwartz J, Grimm J, Zimmerman R, Clement M. Information seeking and MSM's beliefs about PrEP and condoms. *Health Commun*. 2021:1–8.

- 48 Bineau L, Lambert D, Truszczynski N, Hansen N, Lauckner C. Dating app use among rural men who have sex with men and its relationship to HIV prevention and risk behaviors: a mixed-methods analysis. *Rural Remote Health*. 2021;21(2):1445–6354.
- 49 Hoenigl M, Little SJ, Grelotti D, et al. Grindr users take more risks, but are more open to Human Immunodeficiency Virus (HIV) pre-exposure prophylaxis: could this dating app provide a platform for HIV prevention outreach? *Clin Infect Dis*. 2020;71(7):E135–E140.
- 50 Gutierrez JI, Dubov A, Altice F, Vlahov D. Preferences for pre-exposure prophylaxis among U.S. military men who have sex with men: results of an adaptive choice based conjoint analysis study. *Military Med Res*. 2021;8.
- 51 Minnis AM, Atujuna M, Browne EN, et al. Preferences for long-acting pre-exposure prophylaxis (PrEP) for HIV prevention among South African youth: results of a discrete choice experiment. *J Int AIDS Soc*. 2020;23(6):e25528.
- 52 Montgomery ET, Browne EN, Atujuna M, et al. Long-acting injection and implant preferences and trade-offs for HIV prevention among South African male youth. *J Acquir Immune Defic Syndr*. 2021;87(3):928–936.
- 53 Calabrese SK. Understanding, contextualizing, and addressing PrEP stigma to enhance PrEP implementation. *Curr HIV/AIDS Rep*. 2020;17(6):579–588.
- 54 Srivastava K, Arora A, Kataria A, Cappelleri JC, Sadosky A, Peterson AM. Impact of reducing dosing frequency on adherence to oral therapies: a literature review and meta-analysis. *Patient Prefer Adherence*. 2013;7:419–434.
- 55 Montgomery ET, Atujuna M, Krogstad E, et al. The invisible product: preferences for sustained-release, long-acting pre-exposure prophylaxis to HIV among South African youth. *J AIDS J Acquir Immune Defic Syndr*. 2019;80(5).
- 56 Bavinton BR, Grulich AE. HIV pre-exposure prophylaxis: scaling up for impact now and in the future. *Lancet Public Health*. 2021;6(7):e528–e533.
- 57 Lancaster KE, Lungu T, Bula A, et al. Preferences for pre-exposure prophylaxis service delivery among female sex workers in Malawi: a discrete choice experiment. *AIDS Behav*. 2020;24(5):1294–1303.
- 58 Chakrapani V, Newman PA, Cameron M, et al. Willingness to use pre-exposure prophylaxis (PrEP) and preferences among men who have sex with men in Mumbai and Chennai, India: a discrete choice experiment. *AIDS Behav*. 2021;25(10):3074–3084.
- 59 Egger M, Juni P, Bartlett C, Hoenstein F, J S. How important are comprehensive literature searches and the assessment of trial quality in systematic reviews? Empirical study. *Health Technol Assess*. 2003;7(1).
- 60 Ayorinde AA, Williams I, Mannion R, et al. Publication and related biases in health services research: a systematic review of empirical evidence. *BMC Med Res Methodol*. 2020;20(1):137.
- 61 Dubov A, Ogunbajo A, Altice FL, Fraenkel L. Optimizing access to PrEP based on MSM preferences: results of a discrete choice experiment. *AIDS Care*. 2019;31(5):545–553.
- 62 Eisingerich AB, Wheelock A, Gomez GB, Garnett GP, Dybul MR, Piot PK. Attitudes and acceptance of oral and parenteral HIV pre-exposure prophylaxis among potential user groups: a multinational study. *PLoS One*. 2012;7(1):e28238.
- 63 Kuteesa MO, Quaipe M, Biraro S, et al. Acceptability and predictors of uptake of anti-retroviral pre-exposure prophylaxis (PrEP) among fishing communities in Uganda: a cross-sectional discrete choice experiment survey. *AIDS Behav*. 2019;23(10):2674–2686.
- 64 Pines HA, Strathdee SA, Hendrix CW, et al. Oral and vaginal HIV pre-exposure prophylaxis product attribute preferences among female sex workers in the Mexico-US border region. *Int J STD AIDS*. 2019;30(1):45–55.
- 65 Quaipe M, Eakle R, Cabrera Escobar MA, et al. Divergent preferences for HIV prevention: a discrete choice experiment for multipurpose HIV prevention products in South Africa. *Med Decis Making*. 2018;38(1):120–133.
- 66 Salinas-Rodríguez A, Sosa-Rubí SG, Chivardi C, et al. Preferences for conditional economic incentives to improve pre-exposure prophylaxis adherence: a discrete choice experiment among male sex workers in Mexico. *AIDS Behav*. 2021.
- 67 Wheelock A, Eisingerich AB, Ananworanich J, et al. Are Thai MSM willing to take PrEP for HIV prevention? An analysis of attitudes, preferences and acceptance. *PLoS One*. 2013;8(1):e54288.