

Table 1. Reviews examining HIV prevention interventions among men who have sex with men, published between 2021–2025

Author & year of publication	Evidence synthesis focus	Year of last search	Location of included studies*	Key findings related to interventions and/or services among MSM	Rating of overall confidence in the results of the review appraised with AMSTAR 2‡ (95)
Phillips II <i>et al.</i> , 2021 (25)	To assess the status of structural interventions for HIV prevention among Black and Latinx MSM	2019	n=2 U.S. (n=2)	<ul style="list-style-type: none">• A widespread lack of HIV-focused structural interventions for Black and Latinx MSM in the U.S. exists• There is evidence supporting population-specific approaches to HIV prevention, including structural level interventions for MSM, such as multilevel, interdisciplinary direct service approaches for Black MSM, or high-level policy and organizational processes (coalition-based community mobilization efforts)• Interventions that target and seek to ameliorate or eliminate structural stigma have the potential to lead to improvements in HIV outcomes among Black and Latinx MSM	Critically low
Kudrati <i>et al.</i> , 2021 (57)	To identify literature that presents or evaluates the use of social media and/or communications campaigns to increase PrEP awareness among young Black and Latinx MSM and women	2020	n=8 U.S. (n=8)	<ul style="list-style-type: none">• Social media platforms can be leveraged to share and disseminate information about PrEP in ways that are appropriate and engaging to specific audiences	Critically low
Garrison <i>et al.</i> , 2021 (62)	To review effective interventions aimed at improving PrEP adherence in the U.S.	2020	n=20 U.S. (n=20)	<ul style="list-style-type: none">• Nine studies focused on MSM• Strategies to include PrEP adherence included behaviour-change interventions, technology-based interventions, and alternative delivery strategies (e.g. pharmacy-based PrEP)• Generally, the quality of evidence for PrEP adherence interventions is low	Critically low
Wang <i>et al.</i> , 2022 (56)	The objective of this systematic review is to synthesize and evaluate interventions aimed to improve PrEP uptake and adherence among MSM in the U.S.	2021	n=47 U.S. (n=47)	<ul style="list-style-type: none">• Compared to venue-based interventions, technologically delivered PrEP interventions are convenient, cost-effective, and may overcome system-level barriers to PrEP care• App-based interventions include extensive information on PrEP to improve participants' awareness of PrEP and build behavioral skills to use PrEP• Text-message interventions have the potential to impact retention in PrEP care• Use of peers in PrEP interventions for MSM of colour was highlighted as an important strategy, reducing PrEP-related stigma and facilitating trust in PrEP care• Few interventions at the structural level exist	Critically low
Melendez-Torres <i>et al.</i> , 2022 (14)	To review the evidence for the effectiveness of eHealth interventions in addressing HIV/STIs, sexual risk behaviour, substance use, and mental health among MSM	2020	n=16, including: U.S. (n=12) Sweden (n=1) The Netherlands (n=1)	<ul style="list-style-type: none">• The meta-analysis of six studies, with 3 months to 1 year of follow-up, suggested eHealth interventions can have a significant impact on reducing sexual risk behaviours; however, the overall quality of evidence was poor	High
Sewell <i>et al.</i> , 2022 (1)	To identify and describe recent studies evaluating the effectiveness of HIV prevention interventions for MSM	2021	n=39, including: U.S. (n=30) UK (n=2) Canada (n=1) Multi-country (n=4)	<ul style="list-style-type: none">• Included studies assessed at least one of these four outcomes: HIV incidence, STI incidence, condomless anal intercourse, and number of partners• Five intervention types were identified: one-to-one counselling, group interventions, online interventions, contingency management interventions for substance abuse, and HIV PrEP interventions• There is some evidence that one-to-one counselling, group interventions, and online interventions (individual) could reduce HIV risk behaviours• PrEP was the only intervention consistently effective at reducing HIV incidence	Low
Portillo <i>et al.</i> , 2023 (53)	To evaluate the strengths and limitations of avatar technology as a tool for HIV prevention among MSM	2022	n=11, including: U.S. (n=9)	<ul style="list-style-type: none">• Avatars may promote the dissemination of health information to populations at high risk of HIV acquisition• Avatars may provide a medium for participants to reflect on and disclose their sexual behaviours	Critically low
Kamitani <i>et al.</i> , 2023 (63)	To identify types, evidence, and study gaps of alternative HIV PrEP care delivery models	2022	n=16, including: U.S. (n=12) Canada (n=1) Australia (n=1)	<ul style="list-style-type: none">• PrEP access, care, and delivery could be increased by expanding PrEP care providers (e.g. pharmacists), settings of PrEP care (e.g. telehealth), and laboratory screening (e.g. mail-in testing)	Moderate

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Guimarães <i>et al.</i> , 2023 (55)	To identify demand creation strategies and retention strategies to improve PrEP persistence	2022	n=46, including: U.S. (n=16) England (n=2) Switzerland (n=1) Multi-country (n=4)	<ul style="list-style-type: none">Offering PrEP through online demand creation and retention strategies can reach and retain a high number of men who have sex with men and transgender women	Low
Lee <i>et al.</i> , 2023 (61)	To examine current digital interventions addressing stigma to improve PrEP-related outcomes	No search strategy or year reported	n=5, including: U.S. (n=4)	<ul style="list-style-type: none">There was variability in the forms of stigma addressed by digital interventionsA lack of standardized stigma measures limits the ability to make conclusions about how stigma reduction can facilitate PrEP use in digital interventions	Critically low
Demeke <i>et al.</i> , 2024 (15)	To identify interventions relevant to the HIV prevention and care continuum for Black MSM in Canada	2020	n=19 Canada (n=19)	<ul style="list-style-type: none">There are few targeted interventions for Black MSMThere is limited research on intervention strategies to increase access to prevention interventions for Black MSMNo PrEP delivery strategies that target Black MSM existWhile Black community-based initiatives exist, they are limited by a lack of research to support scale-up to examine effectiveness	Critically low
Luo <i>et al.</i> , 2024 (13)	To summarize and evaluate research on the effectiveness of gamification on the HIV prevention and care continuum	2024	n=26, including: U.S. (n=19) Spain (n=1)	<ul style="list-style-type: none">Gamified digital interventions have been applied to various HIV outcomes including testing, condomless anal intercourse, PrEP uptake and adherence, PEP uptake, and ART adherenceGamification may reduce the number of condomless anal intercourse acts and may improve PrEP adherence among MSM, but evidence is limited	Low
Escarfuller <i>et al.</i> , 2024 (17)	To describe what HIV prevention intervention-related research has been conducted in the U.S. among sexual minority Hispanic men	2022	n=15 U.S. (n=15)	<ul style="list-style-type: none">Two studies reported on PrEP outcomes: one intervention improved PrEP adherence, the other improved PrEP screening and referral ratesFour studies reported on condom use outcomes; results were mixedFew studies incorporated common values present in Hispanic cultureHIV prevention interventions should be bolstered by integration of cultural factors	Critically low
Kamitani <i>et al.</i> , 2024 (60)	To summarize the characteristics of best practices for increasing PrEP use and persistence in the U.S.	2023	n=26 U.S. (n=26)	<ul style="list-style-type: none">Bi-directional messaging for digital-based PrEP interventions may help participants feel better supportedLonger intervention periods may allow more time for intervention exposure and thus facilitate behavioural changeResults for culturally tailored interventions to improve PrEP initiation/uptake for Black MSM are mixed	Critically low
Kamitani <i>et al.</i> , 2024 (58)	To identify digital health interventions with PrEP adherence outcomes	2023	n=9, including: U.S. (n=8) The Netherlands (n=1)	<ul style="list-style-type: none">All studies showed improved PrEP adherenceOne study reported improvement in PrEP care retentionThree studies identified a reduction in sexual risk behavioursDigital strategies can offer counselling and behavioural risk reduction support between in-person PrEP care visits	Low
Jaramillo <i>et al.</i> , 2025 (16)	To map existing evidence on peer-led interventions to increase the reach of HIV testing, treatment, and PrEP among Latino/x/e MSM	2022	n=23, including: U.S. (n=19)	<ul style="list-style-type: none">Of the 17 unique interventions, only 7 had some level of tailoring specifically for Latino/x/e MSMTwo types of cultural tailoring were identified: surface-level (culturally appropriate language, images, symbols, examples) and deep-level (modifying content, strategies, or delivery methods to align with the cultural context and values of the target population)Most interventions were at the individual level	Critically low

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Brisson <i>et al.</i> , 2025 (59)	To evaluate the effect of digital communication tools on improving PrEP adherence	2025	n=10, including: U.S. (n=8)	<ul style="list-style-type: none">• The meta-analysis of eight RCTs had a modest improvement on PrEP adherence 12 weeks post-intervention• Digital communication tools (mobile applications, text messaging, mobile games) appear to have a limited impact on improving PrEP adherence• Interventions tailored to individual needs that offer direct feedback in real-time may be necessary for improving PrEP adherence	Critically low
Du <i>et al.</i> , 2025 (54)	To evaluate the effectiveness of digital health interventions in enhancing the PrEP care continuum among MSM	2024	n=12, including: U.S. (n=10)	<ul style="list-style-type: none">• Digital health interventions (mobile applications, text messaging, and social media platforms) appear to be feasible and acceptable, but challenges persist in real-world implementation such as low user engagement and variability in effectiveness• Few studies demonstrated statistically significant increases in PrEP use and adherence• Digital health interventions should be culturally sensitive, personalized, and prioritize privacy protection	High

ART: Antiretroviral therapy

MSM: Men who have sex with men

PrEP: Pre-exposure prophylaxis

RCT: Randomized controlled trial

*Only high-income jurisdictions listed

‡Rating overall confidence in the results of the review (95):

High: No or one non-critical weakness: the systematic review provides an accurate and comprehensive summary of the results of the available studies that address the question of interest.

Moderate: More than one non-critical weakness: the systematic review has more than one weakness but no critical flaws. It may provide an accurate summary of the results of the available studies that were included in the review.

Low: One critical flaw with or without non-critical weaknesses: the review has a critical flaw and may not provide an accurate and comprehensive summary of the available studies that address the question of interest.

Critically low: More than one critical flaw with or without non-critical weaknesses: the review has more than one critical flaw and should not be relied on to provide an accurate and comprehensive summary of the available studies.