



# Harm-reduction Approaches for Alcohol Use: An Update to the Landmark Marlatt & Witkiewitz (2002) and Witkiewitz & Marlatt (2006) Narrative Reviews

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## Abstract

**Purpose of Review** Alcohol harm reduction entails pragmatic, compassionate strategies to reduce alcohol-related harm and improve quality of life, without requiring abstinence. Since the landmark reviews from Marlatt and Witkiewitz in 2002 and 2006, harm-reduction approaches for alcohol have expanded considerably. This narrative review synthesizes more recent evidence across policy-, population-, community-, and individual-level interventions.

**Recent Findings** Policy interventions, including taxation, minimum unit pricing, and outlet density restrictions, consistently reduce alcohol consumption and associated harm. Population-level campaigns improve knowledge and attitudes; however, effects on drinking behaviors are mixed. At the community and individual levels, Housing First programs and harm-reduction treatment for alcohol have garnered empirical support. Managed alcohol programs and meaningful activity interventions show promise in nonrandomized studies.

**Summary** Building on grassroots, user-led efforts in the larger harm-reduction movement, the alcohol harm-reduction field has a growing empirical foundation. Future research should engage communities, expand RCTs, refine outcome measures, and explore technology-driven solutions to expanding the reach of harm reduction.

**Keywords** Alcohol use · Harm reduction · Alcohol use disorder · Alcohol policy · Alcohol treatment · Community-based intervention

## Introduction

In their landmark papers, Witkiewitz and Marlatt [1] and Marlatt and Witkiewitz [2] reviewed a wide range of policy, community, and individual-level alcohol interventions that were positioned to reduce harm. These foundational papers sparked ongoing conversations about alcohol harm reduction in addiction research, policy, and practice.

Over the past two decades, the evidence base for alcohol harm reduction has grown due to advances in policy, clinical practice, and community-based participatory research. In

this article, we provide an updated narrative review of this empirical support. For clarity and structure, this review is organized by intervention level: policy, population, community, and individual. Within each level, we review the findings and prioritize meta-analyses, systematic reviews, and randomized controlled trials, respectively and as available. To further contextualize these findings, we also share definitions to help differentiate harm reduction from other empirically supported approaches, describe current approaches to measuring alcohol-related harm, and outline priorities for future research and practice.

## Defining Harm Reduction in the Context of Alcohol Use

As applied to alcohol use, *harm reduction* refers to pragmatic and -- particularly in community and individual-level applications -- compassionate and user-centered strategies,

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that aim to minimize alcohol-related harm and enhance quality of life for people who use alcohol and their communities, without requiring abstinence or even use reduction [3]. In understanding harm reduction, it is also important to acknowledge its grassroots, user-led origins and ongoing contributions [4], including in the field of alcohol harm reduction [5], more specifically.

Ultimately, harm reduction expands the spectrum of intervention options to engage and help people not optimally served by the abstinence-centered policies (e.g., prohibition), population-based messaging (e.g., “Just say no”), treatments (e.g., relapse prevention), behavioral interventions (e.g., contingency management), systemic approaches (e.g., drug court), and mutual help systems (e.g., Alcoholics Anonymous) that have dominated the alcohol intervention landscape for decades. This important step forward also aligns with the recent expansion of federal definitions of *recovery* beyond abstinence alone to include ameliorating AUD symptoms, biopsychosocial functioning, and quality of life [6, 7].

As it has become more mainstream, however, there has been some confusion about and a flattening of the term *harm reduction*. It has sometimes been conflated with other evidence-based yet distinct approaches through well-intended “conceptual stretching” [8]. In this review, we thus also strive to clarify what distinguishes harm reduction as a field and orientation with its own strategies and history and to summarize the literature on the efficacy of harm-reduction interventions that have the primary intention of reducing the impact of alcohol-related harm versus simply stopping or reducing use [3, 9].

It is also of note that we write this review from our perspective as US-based researchers, clinicians, and administrators. While we contribute to the evidence base for alcohol harm reduction, we remain mindful of concerns about governmental, public health, and academic appropriation of harm reduction. Our work has been grounded in long-term collaborations with community members and agencies to share resources, co-learn, co-create, implement, evaluate, and disseminate. Still, this review views alcohol harm reduction through the lens of Western scientific, evidence-based scholarship, and should be understood within that context and its limitations.

## Harm Reduction Interventions According to Level

### Policy-level Interventions Represent some of the Strongest Evidence-Based Approaches to Alcohol Harm Reduction with Far-reaching Impacts

Policy-level interventions entail shifting environments in ways that reduce population-level harms without requiring prohibition of alcohol or individual-level alcohol abstinence. Over the past two decades, robust evidence for harm-reduction alcohol policy has continued to emerge, including minimum unit pricing and taxation for high alcohol by volume (ABV) products, marketing and labeling restrictions, availability controls, and drinking-and-driving countermeasures

Alcohol taxation is one of the most effective and cost-efficient harm-reduction policies. Systematic reviews and meta-analyses show that raising excise taxes consistently reduces alcohol consumption, heavy drinking, and alcohol-related harm, with the largest benefits among people who are younger, consume alcohol more heavily, and are from lower socioeconomic strata (SES) [10, 11].

By setting a floor price per unit of alcohol, minimum unit pricing raises the cost of inexpensive, high-ABV products most associated with harm (e.g., blackouts), which are often specifically marketed and targeted towards minoritized and socioeconomically marginalized communities [12–14]. Systematic reviews and large scale trials have indicated that minimum unit pricing is linked to reductions in alcohol use, alcohol-specific deaths, and alcohol-related hospitalizations, with the strongest effects in lower SES communities [15, 16].

Additional regulations, including laws restricting outlet density, place of sales and trading hours, are associated with reductions in alcohol use, alcohol-related violence and hospitalizations [17, 18], as well as youth use [19]. Drinking-and-driving laws continue to help reduce the prevalence of this offense and alcohol-related fatalities; however, systematic reviews have not been able to pinpoint optimal blood alcohol concentration (BAC) limits or enforcement requirements, in part due to variations in local laws and enforcement options [20].

Additional policy-level interventions have mixed or inconclusive results in reducing harm. Systematic reviews have indicated that few people pay attention to alcohol warning labels [21], but when they do [22], labeling about cancer risks has been associated with increased knowledge and reduced alcohol sales [23, 24]. Although a systematic reviews of reviews indicated alcohol marketing is associated with increased use and harm, especially among youth [25], the field is largely inconclusive about whether alcohol marketing bans can help reduce alcohol use [26].

## Population-level Harm Reduction Interventions Show Mixed Efficacy in Reducing Alcohol-related Harm

Population-level interventions seek to influence knowledge, attitudes, and behaviors across broad audiences – not only those currently impacted by alcohol use – and often through communication strategies that shape social norms and raise awareness of alcohol-related risks. Over the past couple of decades, research on population-level harm reduction has continued to prioritize mass media campaigns [27, 28] but has more recently expanded to include newer social media strategies [29].

Systematic reviews of alcohol-focused mass media campaigns show they reliably improve knowledge, awareness, and intentions; however, evidence for reductions in drinking is limited and inconsistent [27, 28, 30]. A more recent systematic review also included social media campaigns. The authors noted the studies were mostly lower quality. Findings indicated promising albeit mixed evidence, with some studies showing changes in awareness of alcohol risks and a limited number showing significant changes in alcohol use [29].

The literature shows that mass campaigns addressing drinking-and-driving are widely used but remain under-evaluated [31, 32]. Findings indicate that the campaigns alone are associated – albeit inconsistently — with modest reductions in alcohol-related crashes and risky driving behaviors [29, 31]. Their impact is stronger when combined with community-based (e.g., drinking-and-driving education) and policy-based (e.g., legislation prohibiting drinking and driving) interventions [32]; however, one review showed that pairing mass campaigns with increased enforcement did not reduce alcohol-related crashes [31].

Population-based campaigns that emphasize active personal commitment, such as “Dry January,” differ from more passive mass media efforts. These initiatives engage individuals in collective yet individually based behavior change during a discrete time period. A scoping review of early observational studies of such campaigns showed their promise in reducing alcohol-related harm while improving broader measures of health and quality of life. Randomized controlled trials, however, are needed to confirm their efficacy [33].

## Community-based Harm-reduction Approaches Reduce Harm and Publicly Funded Costs

These interventions are planned for members of a specific community—and ideally together with that community—to reduce their alcohol-related harm while also addressing impact on the larger, surrounding community [34]. Many of

these evidence-based interventions prioritize the needs of marginalized communities that are most impacted by alcohol-related harm (e.g., people experiencing homelessness and AUD), which then translates into greater community-level harm due to greater use of publicly funded services, including high-cost emergency department use and contact with the legal, carceral and justice systems. Together, these studies show that community-based, nonabstinence-based approaches can improve stability, reduce harm, and enhance quality of life in marginalized populations.

## Housing first

Housing first. Provides immediate, permanent, low-barrier, nonabstinence-based housing to people experiencing chronic homelessness. In contrast to linear, “treatment-first” approaches, Housing First uses a harm-reduction framework that does not require abstinence or treatment engagement prior to housing attainment. To date, over two decades of controlled trials and systematic reviews have consistently shown that Housing First increases housing stability and reduces high-cost service utilization, including emergency healthcare and jail stays [35–37]. Although the findings resulting from these systematic reviews are not solely focused on people with AUD, at least two older controlled trials have indicated that Housing First is associated with reductions in alcohol use and alcohol-related harm [38, 39]. Qualitative studies have shown that, for people experiencing homelessness and AUD, Housing First, with its integrated harm-reduction programming, has often represented their first experience attaining and maintaining housing and is the “only thing that works” [40, 41]. Emerging evidence points to the promising role of resident-led programming to further decrease alcohol use and alcohol-related harm in Housing First settings [42–44].

There are places for improvement in Housing First programs, including a need to ensure fidelity to core principles, strengthen working alliances between residents and staff, expand opportunities for meaningful activity and social connectedness, and balance the imperative for resident self-determination with timely access to crisis intervention, medical, psychiatric, and substance use treatment [45, 46]. Some more recent studies have begun to explore community-coled, harm-reduction programming that supports resident leadership, meaningful activities and healing activities [42]. These refinements need to be more fully implemented and their effects evaluated to further strengthen Housing First’s well-documented strengths in promoting housing stability, recovery, health, and broader impacts on both individual and community-level harm.

## Managed alcohol programs (MAPs)

Originating in Canada two decades ago, managed alcohol programs (MAPs) provide beverage alcohol in scheduled, medically managed doses within supportive housing, shelters, or community service settings [47]. The aim of these programs is to prevent life-threatening withdrawal, reduce reliance on nonbeverage alcohol, stabilize health, and mitigate secondary harms such as injuries, theft, or repeated justice and emergency service involvement. Nonrandomized evaluations show that MAP participants experience reduced daily consumption, decreased alcohol-related harm, and less costly public service utilization (e.g., such as emergency department visits, hospitalizations, and shelter stays) [48–50]. More recent studies have replicated these earlier findings and expanded them, linking MAPs in both hospital and shelter-based settings to decreased alcohol consumption, improved liver function, as well as reduced ED visits, hospitalization, and mortality [51, 52].

In addition to quantitative evaluations, mixed-methods and qualitative studies have shed light on how MAPs work in practice, particularly from participants' perspectives. These studies highlight the relational and cultural dimensions of MAPs — including feelings of dignity, safety, and reconnection — and underscore their role as supportive environments and potential spaces of healing [41]. A recent scoping review further highlighted these improvements in perceived well-being, self-efficacy, connection to community, health-related quality of life and reductions in justice system involvement. However, this review also emphasized the lack of randomized controlled trials to test the efficacy of this approach and its long-term effects most rigorously [53].

## Exploratory and Emerging Community-level Approaches

Beyond Housing First and MAPs, communities are also developing a broader spectrum of nonabstinence-based and harm-reduction interventions that are relevant to locally impacted populations [54, 55]. Such interventions have included harm-reduction shelters and drop-in centers that explicitly allow people who are intoxicated and provide supervised support [56] and culturally aligned programs led by Indigenous communities that embed ceremony, Elder participation, and local governance in alcohol harm-reduction efforts [57]. These innovations are promising; however, they currently lack strong outcome data from controlled trials. Future research stands to expand and test these growing priority areas.

## Individual-level Harm Reduction Interventions Show Strong Evidence for Reducing Alcohol-related Harm Across Various Populations

At the individual level, harm reduction for alcohol typically entails behavioral health treatments, which can be combined with pharmacological treatment, and interventions designed to reduce alcohol-related harm and improve quality of life [9, 58, 59]. The clearest differentiation from other alcohol treatments and interventions lies in this explicit therapeutic intention. Whereas most alcohol treatments and interventions implicitly or explicitly promote abstinence or use reduction, harm-reduction treatments and interventions focus on client-defined goals that may include moderation, safer use, or abstinence when chosen [58]. In an individual-level harm-reduction approach, the clinician does not seek to dictate or control a person's use *per se*. Instead, they (a) meet patients and clients where they're at; (b) discuss means of staying safer and healthier, even if patients and clients continue to drink alcohol; and (c) preserve self-determination and personal freedom around alcohol use.

A persistent question in the field is how to distinguish harm reduction treatments and interventions from other approaches. After all, don't all AUD interventions intend to reduce harm? This ambiguity has sometimes led colleagues to naming even eclectic collections of practices—from relapse prevention to acupuncture to dialectical behavior therapy to contingency management—as 'harm reduction.' Although this framing may seem inclusive, it is not clinically accurate and risks that aforementioned conceptual stretching [8] that can render ideas so general that they are no longer useful.

To resolve this confusion, it is helpful to distinguish between 'little hr' and 'big HR.' The former reflects that effective alcohol treatments intend to and often do reduce harm; however, they do so indirectly via abstinence or use reduction (e.g., 'moderation'). In contrast, 'big HR' describes approaches in which harm reduction itself is the explicit therapeutic intention, achieved through strategies that directly target alcohol-related harm — potentially in the context of diverse drinking trajectories.

Several alcohol treatment approaches paved the way for contemporary harm-reduction interventions and treatments. Marlatt and Gordon's [60] Relapse Prevention promoted a more compassionate, collaborative stance toward patients, reframing resumed alcohol use as a common part of a more typical nonlinear recovery process. Motivational interviewing [61–63], initially developed to support engagement in abstinence-based treatment, expanded upon Rogerian principles of empathy, acceptance, and autonomy, and evolved into an empirically supported, patient-centered approach

that has deeply influenced harm-reduction practice in addiction psychology [64, 65] and many other fields as well.

There have been more explicit harm-reduction modalities introduced to the field, and despite the lack of consistent empirical support, these approaches have been vitally important in shaping the field's thinking and the subsequent generations of harm-reduction intervention and treatment. Originating in the 1990s, Guided Self-Change was a ground-breaking cognitive-behavioral treatment that was the first to offer “problem drinkers” a choice of treatment goals, ranging from abstinence to moderation to safer use [66]. Harm-reduction psychotherapy [59, 67] and self-help approaches [5, 68] introduced principles from the grassroots harm-reduction movement into clinical, counseling and substance-use treatment practice. Collectively, these forerunners oriented the addiction treatment field toward harm reduction and laid the groundwork for today's empirically supported harm-reduction treatments.

### **BASICS for College Students and Risky Drinkers**

Among individual-level harm reduction interventions, the most studied is BASICS (i.e., *Brief Alcohol Screening and Intervention for College Students: A Harm Reduction Approach*) [69]. Developed by Marlatt and colleagues [69] in the 1990s, BASICS is a two-session, “skills-based curriculum that aims to reduce harmful consumption and associated problems” (p. 4) It combines structured assessment of symptoms of AUD, use patterns and alcohol-related harm with personalized normative feedback (e.g., normative drinking comparisons, estimated blood alcohol concentration, alcohol-related harm), and discussion of safer-use strategies [69, 70]. Rather than requiring or prioritizing abstinence, BASICS helps students consider means of reducing harm that are aligned with their own personal goals and preferences.

The evidence supporting BASICS is strong and long-standing. A meta-analysis of randomized controlled trials found consistent reductions in both weekly alcohol consumption and alcohol-related harms when comparing participants receiving BASICS with participants in control conditions [71]. A comprehensive review of 30 years of BASICS trials and dissemination efforts highlights its efficacy but also challenges with its scaling and implementation. A key conclusion of this long-standing research is that fidelity to its original in-person, manualized format garners the most consistent effects [72].

### **Harm reduction treatment for alcohol (HaRT-A)**

(HaRT-A) was codeveloped together with community members who had lived experience of homelessness and alcohol

use disorder [73] using a community-based participatory research model [74]. It is a brief, low-barrier, nonabstinence-based treatment delivered pragmatically and compassionately, featuring: (a) collaborative measurement and tracking of alcohol-related harm, (b) elicitation of patients' own goals to reduce alcohol-related harm and improve quality of life [75], and (c) discussion of safer-use strategies [76].

The first RCT of HaRT-A was a two-arm, three-month trial with people experiencing AUD and homelessness. Compared to services-as-usual control participants, HaRT-A participants showed greater reductions in peak alcohol quantity, alcohol-related harm, and AUD symptoms. Although abstinence was not suggested as a goal, HaRT-A participants had fewer positive ethyl glucuronide (EtG) tests compared to controls [77].

It should be noted that medications play a lesser role in AUD treatment overall than in areas such as smoking cessation and opioid use disorder, where medications act directly on the receptors for the target substance [63], and can reduce serious harm in their own right (e.g., reducing overdose risk) [78]. Further, pharmacotherapy for AUD has been FDA-approved for and studied primarily within abstinence-oriented treatment. That said, studies accumulating over the years have shown that these medications can also reduce heavy drinking and alcohol-related harm [79], which has suggested a role for such medications as pharmacological adjuncts when integrated with behavioral harm-reduction treatment.

With this in mind, participants ( $N=308$ ) in an additional RCT were randomized to HaRT-A+extended-release naltrexone, HaRT-A+placebo, HaRT-A alone, or services as usual (control) [80]. Compared to control participants, HaRT-A+extended-release naltrexone participants showed significant improvement across 5 of 6 outcomes (peak alcohol quantity, alcohol frequency, EtG, alcohol-related harm, physical health-related QoL). Participants in HaRT-A+placebo and HaRT-A only arms showed statistically significant improvements on 3 of 6 outcomes. Effect sizes of these statistically significant effects ranged from small ( $d=0.13$ ) to medium-large ( $d=0.68$ ).

Emerging mechanism studies also shed light on how HaRT-A works. Research shows that when clients generate and pursue alcohol-specific harm-reduction goals, they achieve greater reductions in peak drinking, alcohol-related harms, and improvements in physical HRQoL (Fentress et al., 2021). Related work indicates that endorsing and practicing safer-drinking strategies predicts subsequent decreases in alcohol use and harms (Alawadhi et al., 2024). Taken together, these findings demonstrate that HaRT-A, which directly targets harm and quality of life rather than assuming abstinence as the sole pathway to improvement, is acceptable to non-treatment-seeking populations, and can

be delivered effectively by frontline teams in community settings.

### Future directions in individual-level harm reduction

Early-phase research on an intervention featuring harm-reduction behavioral activation shows promise for reducing alcohol use and improving functioning in short-term follow-up [81]. Digital and web-based platforms extend and scale tools that can reduce harm, including personalized normative feedback, protective behavioral strategies, and self-monitoring [82]. Although effect sizes remain modest and durability is uncertain, these digital formats and their potential to be expanded with the use of large-language models and on-demand mHealth technologies deserve further study. Community-codeveloped and culturally aligned treatments can offer alternative frameworks to addressing alcohol-related harm in culturally appropriate ways [83, 84]. Such work (e.g., harm-reduction Talking Circles) shows promise in increasing cultural connection, reducing alcohol use, and ameliorating alcohol-related harm and need more study [85].

### Measurement of Outcomes in Alcohol Harm Reduction

Leading federal research and behavioral health agencies have increasingly embraced outcomes beyond provider-driven, abstinence-oriented benchmarks of decades past [6, 7]. From tracking high-cost service use at the systems level to documenting individuals' harm-reduction goals in brief treatments, the addiction field has broadened what counts as meaningful impact. That said, the limited use of many of these measures outside of research contexts remains a challenge, as dichotomous, abstinence-based outcomes continue to dominate clinical practice and measurement in the field [86].

### Constellations of Use

Although harm reduction focuses on reducing alcohol-related harm and improving quality of life, assessing use patterns remains essential. Quantity-frequency measures remain central to understanding the nature and extent of harms people may experience, with tools like standard drink calculators helping to address BAC estimation challenges [87, 88]. Zinberg's [89] framework of "drug, set, and setting" highlights how the larger context in which alcohol use occurs shapes ensuing harm. More recently, the World Health Organization's *risk drinking levels*, which are based

on average daily alcohol consumption categories, have been recognized as clinically meaningful outcomes [90]

### Alcohol-related Harm

Derived from the longer Drinker Inventory of Consequences (DrInC), the Short Inventory of Problems-Revised (SIP-2R) measures harms across multiple life domains and shows validity even in marginalized groups [91, 92]. For younger populations, the Rutgers Alcohol Problem Index ([RAPI; [93]), the Young Adult Alcohol Problems Screening Test (YAAPST; [94]), and later the Young Adult Alcohol Consequences Questionnaire (YAACQ; [95]) and their subsequently developed, briefer versions, have been validated and long been used to document alcohol-related harm

### Alcohol-related Biomarkers

Biomarkers provide objective indicators of both alcohol use and alcohol-related harm. Validated markers of use include phosphatidylethanol (PEth), carbohydrate-deficient transferrin (CDT), and EtG. Other biomarkers reflecting the physiological impact of heavier alcohol use include measures of liver function and transaminases ( $\gamma$ -glutamyl transferase [GGT], aspartate aminotransferase [AST], alanine aminotransferase [ALT]), as well as bilirubin and blood pressure. In clinical research, biomarkers are often paired with self-report to bioverify use and reductions. They are, however, rarely recommended in routine harm reduction treatment because urine toxicology and breath testing can evoke punitive associations for clients with histories of coercive treatment or justice/legal system involvement [58].

### Quality of Life

Widely used measures such as the SF-12/SF-36 [96], EQ-5D-5 L [97], WHO-BREF [98], and the Patient-Reported Outcomes Measurement Information System (PROMIS; [99]) provide validated assessments of general health-related quality of life and have been used in the context of harm-reduction intervention research [53, 77, 80]. However, alcohol-specific impacts on QoL often require greater sensitivity than generic instruments provide. Recent efforts to develop alcohol-specific QoL measures show promise [100]; however, items sometimes mirror existing measures of alcohol-related harm. More research is needed to further develop and psychometrically test a positive conceptualization of health-related quality of life for people who use alcohol.

## Assessing Alcohol-related Harm at the Systems Level

Because alcohol-related harm reverberates across health-care, legal, and social systems, evaluations increasingly include systems utilization (e.g., emergency medical services, hospitalization, jail, shelter use) and associated costs as outcomes. Such data provide objective evidence of reduced harms at both the individual and societal levels and can be persuasive to policymakers and funders. Reductions in these outcomes reflect not only improvements in individual well-being but also cost offsets for communities and health systems.

## Conclusions

Over the past two decades, alcohol harm reduction has matured from a set of emerging ideas into a diverse body of evidence spanning policy, population, community, and individual levels. At the policy level, taxation, minimum unit pricing, and availability restrictions consistently reduce consumption and related harms, while labeling and marketing reforms remain more equivocal. Population-level campaigns increase knowledge and shift norms but demonstrate stronger effects when paired with policy or community strategies. Community-level interventions—most notably Housing First and MAPs—offer pragmatic, non-abstinence-based supports that improve stability, reduce high-cost service use, and enhance quality of life for marginalized groups. At the individual level, BASICS and HaRT-A stand out as empirically supported, explicitly harm-reduction treatments, with promising new adaptations emerging in digital platforms, culturally aligned models, and integrative pharmacotherapy-behavioral approaches.

Across all levels, the field has also expanded its definitions of success. Beyond abstinence, outcomes now include tracking trajectories of alcohol-related harm, quality of life, and systems-level impacts. This broader constellation of measures better reflects the realities of alcohol use and recovery, and ensures interventions are evaluated on their own terms.

Moving forward, the field must continue to strengthen the empirical foundation for harm-reduction approaches by continuing to test interventions in rigorous trials and exploring mechanisms of change. It is also necessary to explore new means of leveraging social media campaigns and digital technologies. Remotely delivered, technology-driven harm-reduction interventions may offer an unprecedented opportunity to meet people where they're at - literally in the comfort of their own homes and on their own devices - expanding access for the many people for whom

synchronous and in-person treatment engagement is not feasible or acceptable. At the same time, an over-reliance on technology-driven approaches risks widening existing digital divides, further disadvantaging those with limited device access, unreliable connectivity, or lower technological literacy. Key questions remain about whether digital tools can replicate in-person intervention effects, at which levels technology is best deployed, and how to ensure accessibility, privacy, reach and fidelity of technology-driven harm-reduction interventions. Regardless of the modality, partnerships with communities and people most affected by alcohol-related harm should remain central to design, evaluation, and dissemination.

In summary, advances since the landmark reviews of the early 2000s signal that harm reduction is no longer peripheral. It has shown its potential to join with other evidence-based alcohol interventions in creating a more comprehensive and expansive response to alcohol use disorder and alcohol-related harm. As harm reductionists, we must continue to orient towards the future, working with communities and digital technologies to broadening the spectrum of people we can engage and ensuring we continue to meet people where they're at.

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college students (BASICS): a meta-analysis of randomized controlled trials. *Subst Abuse Treat Prev Policy*. 2012;7(1):40. <https://doi.org/10.1186/1747-597X-7-40>.

Meta-analysis confirming BASICS reduces alcohol consumption and alcohol-related harms in college populations; strongest empirical support for a non-abstinence-based harm reduction intervention.

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Comprehensive meta-analysis of AUD pharmacotherapies; strongest support for naltrexone and acamprosate in reducing heavy drinking and related harm, though framed largely in abstinence-oriented contexts.

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