Harm Reduction Therapy: A Practice-Friendly Review of Research

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Harm reduction is an umbrella term for interventions aiming to reduce the problematic effects of behaviors. Although harm reduction was originally and most frequently associated with substance use, it is increasingly being applied to a multitude of other behavioral disorders. This article reviews the state of empirical research on harm reduction practices including alcohol interventions for youth, college students, and a variety of other adult interventions. We also review nicotine replacement and opioid substitution, as well as needle exchanges and safe injection sites for intravenous drug users. Dozens of peer-reviewed controlled trial publications provide support for the effectiveness of harm reduction for a multitude of clients and disorders without indications of iatrogenic effects. Harm reduction interventions provide additional tools for clinicians working with clients who, for whatever reason, may not be ready, willing, or able to pursue full abstinence as a goal. © 2010 Wiley Periodicals, Inc. J Clin Psychol: In Session 66: 201–214, 2010.

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Harm reduction is an umbrella term for interventions aiming to reduce the problematic effects of behaviors (Marlatt, 1998). Most frequently associated with substance use, harm reduction also applies to any decisions that have negative consequences associated with them. For example, at one end of the spectrum, harm reduction may seek to reduce the risk of HIV transmission by supporting needle exchange programs. Harm reduction techniques may also prioritize less risky drinking habits for underage college students to reduce the risk of alcohol poisoning. Other suggestions may include encouraging safe sex, replacing binge eating with healthier alternatives, providing clean razors for those engaging in cutting/self-harm behaviors, or supporting even 5 minutes of exercise per day.

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At its core, harm reduction supports any steps in the right direction. Critics may contend that harm reduction somehow enables or excuses poor choices. Although abstinence may be the ultimate goal, and is of course the only way to avoid all negative consequences associated with substance abuse, the harm reduction practitioner seeks to meet with the client where he or she is in regards to motivation and ability to change. The practitioner's goals are secondary to what the client wants. This does not imply that the practitioner has no opinion; rather, the practitioner respects the client's decisions both for and against change.

The harm reduction practitioner frequently uses nonjudgmental but directive techniques, including motivational interviewing (MI; Miller & Rollnick, 2002), to allow the client to explore reasons for change. MI entails expressing empathy to build rapport with the client, developing discrepancy between what the client wants and where he or she is currently, rolling with client resistance to build the relationship and move toward change, and supporting self-efficacy in the client to take the necessary steps. Within a cognitive-behavioral framework, the practitioner may also assist in setting reasonable goals, practicing refusal skills, identifying alternative behaviors, and considering relapse prevention.

One major difference between harm reduction and abstinence-based programs is the definition of therapeutic progress. If a client presents after 1 month of treatment and reports consuming five drinks on each of the past three nights, a traditional program would count that as a failure. If abstinence was required for certain services, including housing, that client may be turned away from further treatment. Alternatively, a harm reduction practitioner would first ask how much the client drank at the beginning of therapy. If the client were drinking 10 drinks every day, then the consumption of five drinks a day would be a therapeutic success, or steps in the right direction. If the client's goal were to abstain, then the therapist would continue to work with the client to troubleshoot the problematic areas and develop other coping skills. If the client's goal was to avoid blacking out, and five drinks would keep the blood alcohol level below the risk of blacking out, then treatment would be a success. The therapist might continue to explore with the client any other negative consequences that he or she would prefer to avoid, but ultimately the client's goal has been met.

Harm reduction researchers use those same harm reduction goals when disseminating techniques and research findings. In this review of research, we acknowledge that some techniques may receive more support while others are more controversial. For example, discussing moderate drinking with a 22-year old college senior may raise fewer eyebrows than supporting a safe injection site in your neighborhood. Although our review attempts to be comprehensive for many practices that fall under that harm reduction umbrella, we in no way expect that supporting one technique means accepting them all. Our goal is to meet you where you are and hope that harm reduction can fit as one tool in your practice toolbox.

In this article, we review the results of empirical research on the effectiveness of harm reduction with alcohol and substance abuse in a myriad of settings and with a multitude of client populations. Our review is limited to a selection of clinical trials on the effectiveness of harm reduction published in English-language journals; thus unpublished studies, process investigations, theoretical papers, and articles published in other languages have not been included. For space considerations, we have also notably left out discussions of policy changes and other societal/global considerations to focus on options for individual patients.

Alcohol Harm Reduction

Harm reduction includes techniques ranging from prevention to intervention to maintenance. In this section, we review the research on interventions with school-based programs, college students, and adult populations.

School-Based Programs

The most effective way to reduce harm associated with alcohol use is to prevent initiation and misuse in the first place. Age at initiation is inversely related to later problems with use and most frequently occurs during adolescence (Johnston, O'Malley, Bachman, & Schulenberg, 2007a; Warner & White, 2003). According to recent national surveys, mare than one third of eighth graders report past year alcohol use. This percent rises to over half of 10th graders.

Given the high prevalence in this population, many interventions have been designed and tested. Some abstinence-based programs, such as Project DARE (Drug Abuse Resistance Education), have produced either no effects or potentially harmful effects with this population (Lilienfeld, 2007; Lynam et al., 1999).

Other programs take a tack more consistent with harm reduction and include social skills, resistance skills training, and normative education (Bosworth, 1997). Specifically, two published interventions have explicit harm reduction goals: the Integrated School- and Community-Based Demonstration Intervention Addressing Drug Use among Adolescents (Poulin & Nicholson, 2005) and School Health and Alcohol Harm Reduction Project (McBride, Farringdon, Midford, Meuleners, & Phillips, 2004). Although neither intervention resulted in significant changes in long-term prevalence (Poulin & Nicholson, 2005) or compared with no-treatment control (McBride et al., 2004), both resulted in significant reductions in harmful alcohol use.

For prevention, the research leads us to three interrelated conclusions. First, Project DARE and similar programs are not effective at reducing substance use in the short-term or in the long-term. Second, harm reduction methods result in significant reductions in alcohol use in the short-term but not preventative effects in the long-term. And third, we have a long way to go in developing effective prevention strategies for at-risk youth and alcohol abuse.

College Students

College students are probably the most studied group in terms of alcohol harm reduction programs. Although part of this is likely because of the accessibility and incentive options working with college students, this group has a high prevalence of use and continues to struggle with problematic drinking. National surveys report past year alcohol use of college students at 82% and 30-day prevalence at 65% (Johnston et al., 2007b). Over one third of full-time college students report at least one episode of five or more drinks in the past 2 weeks, with rates ranging from 37% of women to 45% of men (Johnston et al., 2007b). Additionally, although college-bound students tend to engage in less heavy episodic drinking than their noncollege bound peers, they become more likely to engage in heavy drinking during college (Timberlake et al., 2007). Frequent heavy drinkers are at particular risk for meeting DSM-IV criteria for alcohol abuse (13 times increased likelihood) and alcohol dependence (19 times increased likelihood) compared with peers who drink alcohol but not heavily (Knight et al., 2002). Overall, the college age cohort has the

highest prevalence of diagnosable alcohol use disorders (Department of Health and Human Services [DHHS], 2007).

Dozens of studies evaluating college student interventions over the past 2 decades have identified strategies with promising outcomes. The National Institute on Alcohol Abuse and Alcoholism (NIAAA, 2002) has designated Tier 1 interventions that have favorable outcomes with college students in at least two independent studies (NIAAA, 2002). Two harm reduction approaches were provided as specific examples of the general approaches listed as Tier 1 interventions: Alcohol Skills Training Program (ASTP) and Brief Alcohol Screening and Intervention for College Students (BASICS).

ASTP combines cognitive-behavioral skills, norms clarification, and motivational enhancement techniques in a group setting (Miller, Kilmer, Kim, Weingardt, & Marlatt, 2001). Multiple-session ASTP groups have repeatedly demonstrated effectiveness at significantly reducing alcohol intake (decreases of 40%–50%) as well as negative consequences with reductions sustained at 2-year follow-up (Baer et al., 1992; Fromme, Marlatt, Baer, & Kivlahan, 1994; Kivlahan, Marlatt, Fromme, Coppel, & Williams, 1990). Specifically, Kivlahan and colleagues (1990) found postintervention weekly drinking decreased from 14.8 drinks at baseline to 6.6 drinks 12 months later, compared with an alcohol information group reduction of 19.4 drinks at baseline to 12.7 drinks at follow-up, and an assessment only condition increase of 15.6 drinks at baseline to 16.8 drinks at the same follow-up. Most recently, the ASTP has also demonstrated generalizability of effectiveness with multicultural and international college students (Hernandez et al., 2006; Stahlbrandt, Johnsson, & Berglund, 2007).

Individual BASICS feedback interventions incorporate personalized feedback with MI in a brief, one-on-one setting (Dimeff, Baer, Kivlahan, & Marlatt, 1999). Both single-session and two-session BASICS have demonstrated similar effectiveness in reducing drinking amounts and consequences for extensive follow-up periods (e.g., Baer, Kivlahan, Blume, McKnight, & Marlatt, 2001; Borsari & Carey, 2000; Larimer et al., 2001; Larimer & Cronce, 2002; Marlatt et al., 1998; Murphy et al., 2001).

In addition to these in-person interventions, harm reduction therapy is also being implemented via Web-based or computer-mediated forms. Web- or computer-based interventions have been developed for a variety of problematic behaviors, including alcohol use, tobacco use, physical activity, nutrition and weight loss, eating disorders, and violence. Multiple Web-based controlled trials with alcohol or substance abuse have been conducted and published (e.g., Chiauzzi, Green, Lord, Thum, & Goldstein, 2005; Kypri & McAnally, 2005; Kypri et al., 2004; Neighbors, Larimer, & Lewis, 2004; Neighbors, Larimer, Lostutter, & Woods, 2006; Walters et al., 2007). The findings of these studies are consistently promising and include reductions in alcohol use (Kypri et al., 2004; Lewis & Neighbors, 2007; Neighbors et al., 2004, 2006; Walters, Vader, & Harris, 2007) and alcohol-related problems (Kypri et al., 2004; Neighbors et al., 2004; Walters et al., 2007) relative to controls, and prevention of escalating use in adolescent samples.

Why is harm reduction so important for college students? Most students attend college during a developmental stage referred to as emerging adulthood (Arnett, 2000, 2001) This unique developmental stage between adolescence and adulthood allows for increased responsibility and independence while still retaining some reliance and interdependence characterized in adolescence. Students in emerging adulthood tend to identify themselves as more independent (Arnett, 2000; Hornsey & Jetten, 2005; Markus, Mullally, & Kitayama, 1997), although they do not see

themselves as having reached adulthood. This developmental period is critical to the development of an identity that is separate from parents as well as peers.

Effective interventions for college student drinking are, therefore, different than some designed for adults. As many students do not view their alcohol use as a problem (Vik, Culbertson, & Sellers, 2000), an abstinence-based program may seem too extreme and not match social norms of the environment. Education-only programs provide students with information, but these emerging adults are more likely to test this alcohol-related information rather than internalize it based on the word of an adult (Crundall, 1995; Neighbors, Larimer, Lostutter, & Woods, 2006). When discrepancies are found between the provided information and actual experiences, students tends to discount the previous information as either being incorrect or inapplicable. In addition, even when students learn the educational material, it does not necessarily lead to behavior change (Larimer et al., 1998; Larimer & Cronce, 2007). Further, college student interventions also occur during a unique developmental phase of drinking behaviors, as most students have initiated use only within the previous few years, and most are on the ascending limb of their drinking trajectory (Johnston et al., 2007b; Nelson, Heath, & Kessler, 1998; O'Malley & Johnston, 2002).

Thus, we can safely conclude from dozens of controlled trials with alcohol-using college students that harm reduction has long-term benefits for this unique population. The pragmatic goals and nonjudgmental attitude offered by harm reduction therapy work with college students.

Other Adult Populations

We will review here the research on harm reduction interventions that are specifically designed to meet adult populations where they are, both figuratively and literally. Below, we track the effectiveness of harm reduction designed for workplace interventions, brief interventions in trauma centers, cooccurring disorder treatments, and finally homeless alcoholics. These populations are typically less responsive to traditional methods, or may be less likely to seek treatment for problematic use.

Workplace programs. National surveys have estimated that over 70% of heavy drinkers and drug users are employed full-time (Substance Abuse and Mental Health Services Administration [SAMHSA], 1999), frequently in workplace cultures that support alcohol and drug use (Ames, Grube, & Moore, 2000). This problematic use has substantial costs to worker health and productivity, as well as financial increases in health care plans (Trudeau, Deitz, & Cook, 2002). One harm reduction intervention in the workplace is an interactive Web site called CopingMatters (Matano et al., 2000). This pilot project has found significant reductions in heavy drinking episodes for over 3 months following the intervention (Matano et al., 2007).

Osilla and colleagues (2008) found that adding a brief intervention to an employee assistance program's treatment as usual (TAU) produced decreases in drinking and associated consequences at 3-month follow-up. Specifically, the intervention participants reported decreases of 7.56 peak drinks per occasion at baseline to 4.78 peak drinks at follow-up (TAU participants decreased from 6.27 drinks to 6.07 drinks). These decreases were associated with a decrease in blood alcohol level from 0.10 at baseline to 0.05 at follow-up for the intervention group, and an increase from 0.07 to 0.08 in the TAU condition.

Other workplace programs have taken a health promotion approach (Cook, Back, & Trudeau, 1996), including stress management (Kline & Snow, 1994), health

counseling (Heirich & Sieck, 2000), worksite wellness (Deitz, Cook, & Hersch, 2005), and Workplace Managed Care (Galvin, 2000). Although these latter studies have often lacked rigorous designs, had low statistical power and participation rates, and used nonstandardized outcome measures (Cook & Schlenger, 2002), they were all shown to reduce substance use and improve attitudes toward changing use.

Trauma centers. Alcohol and drug abuse was associated with over 1.7 million trauma center and emergency room visits in the United States in 2006 (SAMHSA, 2008). Further, at the time of admission, almost one quarter of trauma patients screened positive for substance-related risky behaviors, abuse, or dependence (Madras et al., 2009). These patients are not likely to recognize a substance use problem or be motivated to change their behavior and may not have sought treatment in the past (Daeppen et al., 2007). Identifying these times of crisis as an opportunity for patients to acknowledge consequences and risky behavior (O'Toole et al., 2008), the World Health Organization developed screening measures and recommendations for interventions in health settings (Babor & Higgins-Biddle, 2001). Outcomes reflected that these brief interventions resulted in significant reductions in use and other problematic consequences (Gentilello et al., 1999; Schermer, Moyers, Miller, & Bloomfield, 2006), and further recommendations and guides have been created to assist health care providers (e.g., Rollnick, Miller, & Butler, 2007).

Cooccurring disorders. Substance abuse is prevalent among individuals with serious mental health conditions, affecting over half of those with cooccurring disorders (Drake et al., 2005). Many practitioners require that these individuals abstain from substances before they will treat the dual psychological diagnosis. Harm reduction recognizes that, although abstinence may reduce some of the harms experienced by the individual, often these diagnoses are intertwined and cannot be simply pulled apart and treated in a vacuum (Denning, 2000). Harm reduction psychotherapy (Denning, 2000; Tatarsky, 2002) includes additional assessment and treatment approaches than traditional substance use or psychiatric treatment, including not requiring abstinence to access treatment.

Several treatments consistent with this harm reduction approach have shown optimistic findings for dual diagnoses. Seeking Safety (Najavits, 2002) was effective at reducing substance use and symptoms of posttraumatic stress disorder and in improving family and social functioning (Najavits, Schmitz, Gotthardt, & Weiss, 2005). Mindfulness-based relapse prevention (Bowen, Chawla, & Marlatt, 2008) has been successful in decreasing substance use, craving, and related problems in clients with cooccurring psychiatric conditions (Bowen et al., 2008).

Homeless alcoholics. Perhaps one of the most at-risk and treatment-resistant populations include homeless individuals with alcohol use disorders and cooccurring psychiatric and/or substance use conditions. These "chronic public inebriates" incur public expenses estimated over $80,000 per person, per year (Larimer et al., 2009). Most treatment programs and traditional housing opportunities require the maintenance of abstinence and require eviction in the case of relapse (Tsemberis, Gulcur, & Nakae, 2004). Harm reduction protocols, on the other hand, seek to offer housing and services without contingencies. Although one study found no difference in contingent versus noncontingent housing in changes in substance use or symptoms, there was a decrease in time spent homeless and an increase in stable housing maintenance for the noncontingent group (Tsemberis, Gulcur, & Nakae,

2004). Further exploring the outcomes associated with noncontingent housing, the Housing First study found that, compared with a wait-list control, individuals in housing reported not only less drinking and less intoxication, but also saved an average of $2,449 per person monthly in medical and social service expenses (Larimer et al., 2009).

Substance Use Harm Reduction

Most of our research review thus far has focused on alcohol-related prevention and intervention, although some of the programs have addressed other substances. At this point, we turn our focus to harm reduction programs targeting primarily substance use, including nicotine replacement, opioid substitution, needle exchange programs, and safe injection sites.

Nicotine Replacement

The well-documented deleterious health effects of smoking cigarettes, combined with the legal status of nicotine, has led to the creation and testing of multiple alternatives designed to lower health problems and risks associated with nicotine. Consumers have multiple options, both over-the-counter and by prescription, including patches, lozenges, gum, spray, inhaler, and tablets. Dozens of studies on nicotine replacement have shown an increase in cessation rates by 1.5 to 2 times compared with placebo or no additional aid (e.g., McMurray, 2006; Shiffman, 2007; Sweeny, Fant, Fagerstrom, McGovern, & Henningfield, 2001; West et al., 2001) and can improve moderation attempts as well (Etter, Laszlo, Zellweger, Perrot, & Perneger, 2002; Rose, Behm, Westman, & Kukovich, 2006). These findings are independent of other factors typically associated with cessation success, such as social support, although it is most effective when combined with a behavioral intervention (Molyneux, 2004). Further, nicotine replacement can also increase cessation and moderation with traditionally difficult-to-treat individuals including homeless (Okuyemi et al., 2006) and inpatient populations (Saxon, McGuffin, & Walker, 1997).

Opioid Substitution

Similar to nicotine replacement, opioid substitution therapies have been developed for drugs such as heroin, oxycodone, oxycontin, and morphine. The therapies (agonist pharmacotherapy and methadone maintenance) were identified to provide a less harmful opioid (e.g., methadone) or an opioid-receptor agonist (e.g., buprenorphine) under medical supervision in both specialty and outpatient clinics (Krantz & Mehler, 2004; Merrill et al., 2005; World Health Organization [WHO], 2004). Several reviews have identified opioid substitution therapy as effective in reducing illicit opioid use, HIV risk behaviors, criminal activity, and opioid-related death (Connock et al., 2007; WHO, 2004). Yet, they remain controversial and under strict government regulation, which limits accessibility (Kleber, 2008).

Needle Exchange Programs and Safe Injection Sites

Needle and syringe exchange programs were developed to reduce the spread of blood-borne diseases (e.g., HIV and hepatitis) among injection drug users. These programs have been around since the mid 1980s, often include drug treatment referrals, peer education, and HIV prevention, and were implemented in Amsterdam, Australia, Canada, United States, and many parts of Europe.

Regarding their effectiveness, a thorough review of 45 studies from 1989 to 2002 concluded that these programs are effective, safe, and cost effective (Wodak & Cooney, 2006) with no evidence of deleterious effects (Strathdee & Vlahov, 2001). Although there has been a ban in the United States on federal funding for these programs since 1988 (Strathdee & Pollini, 2007), a recent House of Representative vote for the 2010 Labor Health and Human Services Education appropriations bill included language to lift that ban.

Furthering the intent of the needle exchange programs, there are several governments that provide safe injection sites. In these countries—Spain, Norway, Germany, Switzerland, the Netherlands, Luxembourg, Canada, and Australia, among them—injection drug users can inject their own drugs using clean equipment in the presence of medically trained personnel (Elliot, 2002). Over 25 studies have been published documenting significant reductions in needle sharing and reuse, overdoses, injecting/discarding needles in public places (Strathdee & Pollini, 2007), reduced fatalities due to overdose (Kerr, Tyndall, Lai, Montaner, & Wood, 2006), and increased enrollment in detoxification and other addition treatments (Wood, Tyndall, Zhang, Montaner, & Kerr, 2007). Although controversial, the research supports the reduced harms to both individuals and communities associated with needle exchange programs and safe injection sites.

Research Summary and Clinical Practices

We have reviewed, to the best of our ability, the research on harm reduction treatments most relevant to clinical practitioners. As described, harm reduction interventions are demonstrably effective for alcohol and substance abuse in many settings and with many populations. They are also effective in recruiting a larger proportion of afflicted clients and in reaching several populations (e.g., worksite, homeless) that conventional treatment programs rarely reach. As the use of harm reduction progresses from substance use to mental health more broadly, we will witness further research in these emerging areas as well.

As a practitioner, is harm reduction right for you and your clients? That depends on where your clients are when they come to you for help. And that depends on your beliefs regarding the acceptability of working with less than complete success or abstinence.

If someone arrives with clear motivation and a goal of abstinence, then as a practitioner, we should do all we can to support that decision. The harm reduction approach relevant in that situation would be identical to abstinence models. If, however, a client is ambivalent toward or, in fact, resistant to change, then harm reduction gives us an opportunity to build rapport and help our client make steps in the right direction. Ideally, the client will make the choice to stop the problematic behavior. However, in the absence of a commitment to abstinence, a clinical success is any client improvement and reduction in harm.

The clinician's belief in the effectiveness and the acceptability of harm reduction is a crucial determinant of its use in clinical practice. Our research review was intended to address the question of effectiveness, but the question of acceptability rests within each clinician. Can you meet your clients where they are? Can you work with half a loaf if that is all your clients desire or can afford at this time? Many psychotherapists originally trained in abstinence-only treatments are gradually shifting their practices to recognize the clinical utility of harm reduction. Just as we suggest with ambivalent clients, harm reduction is not an all-or-nothing practice. There are occasions where

harm reduction may not be the best or only option, and we rely on your clinical judgment to identify those situations. What we offer is a beginning point, or an alternative, when abstinence-only methods are not effective or realistic for a specific client.

Consideration of harm reduction therapy does not mean a therapist doesn't see any consequences or potential problems with a client's decisions and use of a substance. Harm reduction means a therapist can see the client's situation in more than black and white, all-or-nothing terms. A reduction in harm may or may not be sufficient for a client, but at least it's a starting point to build rapport, encourage change, and support efficacy. Harm reduction therapy means not withholding services when a client can't, or won't, meet our treatment outcome ideals. Harm reduction therapy means we meet the client where they are and help them along for as far as they will let us.

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