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A Practical Framework for Evaluating a Culturally Tailored Adolescent Substance Abuse Treatment Programme in Molokai, Hawaii

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Objective. Successful substance abuse treatment requires many changes in behavior, attitude and skills. Culturally tailored approaches to substance abuse treatment have shown initial success, but are not yet accepted as best practice models. In order to document programme effectiveness of a new culturally tailored substance abuse treatment programme on the rural island of Molokai, Hawaii, the authors worked to develop a multi-level evaluation plan to measure behavior changes occurring after participation in activities targeting identified causes of substance abuse in the population of interest.

Methods. The authors compiled interview results to develop a map of identified causes of substance abuse in the community studied. Strategic planning then identified the specific activities aimed at impacting identified root causes. A literature review was performed to document the effectiveness of such activities. An evaluation plan was developed to measure programme impact on antecedent conditions contributing to substance use in this community.

Results. Prioritized causes of substance abuse in the target group included low self esteem, lack of self identity and life plan, and limited communication and conflict resolution skills. Activities targeting these conditions included cultural activities, group counseling, and individual counseling. Literature to support the benefit of addressing

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these factors was uncovered, and evaluation methodology was developed to measure changes in behaviors, attitudes, and practices, as a measure of programme success.

Discussion. *While programme evaluation data is still being collected, the authors have demonstrated a sound foundation for programme activities, and designed methodology for collecting meaningful data to measure programme effectiveness at changing important root causes of substance abuse in a rural Native Hawaiian community.*

Keywords: Substance Abuse Treatment; Cultural Tailoring; Evaluation; Root Cause Analysis

Introduction

Substance use is one of the most dangerous challenges facing adolescents in the US today. It is associated with high suicide rates (Yuen *et al.* 1996), increased risk of violence (Austin 2004), child abuse (Bays 1990), unemployment (Siegal *et al.* 1996), school truancy (Hallfors *et al.* 2002), as well as medical conditions, such as addiction, heart disease and stroke (National Institute of Drug Abuse 2005). When surveyed about illicit drug usage, 51.1% of 12th graders in the US admit to having used an illicit substance in their lifetime, and 4% of students nationwide admit to having used crystal methamphetamine or 'ice' (Johnston *et al.* 2004).

In the State of Hawaii, the overall data are similar, with 46.9% of 12th graders having used an illicit substance in their lifetime, and 4.2% having used methamphetamine (Substance Abuse and Mental Health Services Administration 2002). However, students of Native Hawaiian ethnicity have higher rates of drug usage, with 60% of students having used an illicit drug, and 5.6% having used crystal methamphetamine by 12th grade (Pearson 2003). Due to the increased rates of substance use in this group, curricula have been developed based on and addressing Native Hawaiian spiritual principles in the hope that it will be more effective than standard treatment.

Native Hawaiians, like the Maori, Alaska Natives, and many other cultures worldwide, are an indigenous population that experienced forced assimilation by foreign conquerors, and are still recovering from the subsequent suppression of cultural and spiritual practices. The violation of selfhood experienced by disenfranchised populations has been related to poor health and social development (Aboriginal Corrections Policy Unit 2002). Brave Heart (2003) describes how the 'historical trauma' of disenfranchised populations is related to many self-destructive and emotional problems, and may increase substance abuse. Waitzfelder *et al.* (1998) describe cultural alienation as one of the factors contributing to substance abuse in Hawaii.

Research has shown that cultural factors are considered by many to impact recovery. Hurawai *et al.* (2000) found that cultural identity and pride were felt to be important factors in the recovery/healing process for Maori substance abusers in

New Zealand. Native Americans described factors important in substance abuse recovery as: feeling cared for, spiritual experience, insight, making a commitment, empowerment/self-esteem, releasing emotional pain, remorse, reconnecting to traditional values, forgiveness, relief, safety and gratitude (Edwards 2003). Foulks and Pena (1995) studied the literature on ethnicity and psychotherapy in African American populations, and concluded that a culturally responsive psychotherapeutic approach needs to include ethnic consciousness and self esteem building. Resnicow *et al.* (2000) describe the need to incorporate not just cultural, but social, historical, environmental and psychological forces in tailoring substance abuse treatment to a particular group.

Existing culturally tailored substance abuse programmes have demonstrated benefits to patients. Williams *et al.* (2006) describe increased rates of attracting and maintaining clients with a holistic community integrated programme for Aboriginal residents of Southern Australia. Fisher *et al.* (1996) found that the implementation of a culturally sensitive approach to substance abuse increased the time that incarcerated Alaska Native residents stayed in treatment. Gossage *et al.* (2003) studied the impact of sweat lodge ceremonies for incarcerated Native American alcohol abusers, and found that participants decreased their average alcohol intake from 6.7 to 5.3 drinks per drinking session, with a pre and post intervention design. Cervantes (2003) found that a culturally focused substance abuse treatment programme increased drug knowledge and decreased mean past 30-day substance use in Hispanic women.

General strategies adapted for culturally specific use have also demonstrated benefits. Gil *et al.* (2004) measured the short term impact of a brief motivational cognitive behavioral intervention and guided self-change on Latino and African American juvenile offenders, and found that US-born Hispanics with higher ethnic pride and ethnic orientation had better short term post treatment (average 10.9 weeks) results for number of alcohol drinks consumed. Maharajh and Bhugra (1993) found that family therapy decreased alcohol use in Caribbean men at one year after treatment. Williams *et al.* (2006) describe the 'Way Out' Programme that has had success through community partnerships, holistic view of treatment, and multi-faceted treatment interventions, including opioid substitution in indigenous individuals in Southern Australia. Cultural approaches, therefore, show success in decreasing substance use and warrant further study.

In Hawaii, a group of concerned citizens—recovered substance users and healthcare workers on the rural Island of Moloka'i—created a culturally tailored substance abuse prevention curriculum to assist in decreasing the use of illicit substances. The curriculum is based on 21 Hawaiian spiritual and cultural values, including communication, co-operation, conflict resolution, honesty, purity, patience, encouragement, generosity and retribution, as presented in Figure 1.

The curriculum has been used as the basis for prevention training in local schools for more than a decade with preliminary positive findings of preventing substance abuse (Kim 2005), and is the basis for a three-week residential adolescent substance

1. Working with the core staff to identify the antecedent conditions responsible for high substance abuse rates in the area, and match programme activities with underlying rationale.
2. Conducting a literature review to determine whether past research demonstrates an impact of the proposed activity on the target condition.
3. Designing an evaluation programme to measure programme impact on the antecedent conditions identified through this process.

Methods

Subjects

Face to face interviews were performed with a convenience sampling of 13 invested community members: the director of the Kahua Ola Hou programme; two recovered drug users from the community who are now counselors at the programme; two healthcare providers; two community members; and five high school students (two of whom admit to using crystal methamphetamine). Each interview lasted approximately 30 minutes. Each interview began with the question, 'Why do kids use drugs?' The information was solicited via sequential discovery, with the individual pressed to continue the answer through a single thought stream for each reason until no additional explanation could be offered. The endpoint in the inquiry was reached when the subject could no longer offer additional reasons within that thought stream. Once the endpoint was reached, the interviewer returned to a condition one step closer to the antecedent condition statement (Why do kids use drugs?) and again asked, 'why' until there were no additional reasons forthcoming (Renger *et al.* 2002). Concordance of answers was reached after 13 interviews, at which time the primary author combined like answers to create a map representing all of the explanations offered.

Subsequently, a one-day strategic planning session was held for all eight members of the staff of the Kahua Ola Hou Substance Abuse Treatment programme, facilitated by the primary author. This group included the three programme creators, two of whom are actively involved in running the programme and the five part and full time programme counselors. Historic recounting and imaging activities were used with the group to develop the mission and vision statements for the programme. Subsequently, the logic model interview compilation map described previously was reviewed by the group. The group was asked to comment on the accuracy of relationships between causes and whether other important causes were missing from the map that was compiled. Refinement and additional combining of causes was performed through group consensus. In addition, the group was tasked with identifying the causes (or boxes) that could most likely be impacted by the Kahua Ola Hou Programme.

The participants of the strategic planning session then identified and clearly described the activities employed in the programme, and how the activities related to

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165 the underlying rationale of the programme. Finally, the group then brainstormed
feasible methods for programme evaluation that would target the specific activities
represented in the logic model map. During the strategic planning session, the
programme staff reviewed existing evaluation measures and generated ideas for
programme evaluation, targeting the specific conditions of intended impact. These
170 were summarized by the facilitator and sent to the group for revision and approval.

Finally, to build an evidence-based framework for the activities employed in the
Kahua Ola Hou programme, five literature databases were searched for English
language peer-reviewed articles that included the terms ‘substance abuse and
treatment and cultur*’ and ‘substance abuse and treatment and adolescent and
evaluation’. The databases searched were: Academic Search Premier, Cumulative
175 Index to Nursing and Allied Health Literature, Health Source Nursing/Academic
Edition, PubMed MEDLINE and Social Sciences Citation Index. There were no date
restrictions applied. Terms excluded were: ‘prevention’, ‘HIV’, ‘tobacco’, ‘screening’,
and ‘suicide’. Articles found in the medical literature that described the impact of
activities similar to those employed by the Ka Ola Hou programme were identified to
180 create a table of activities employed and literature-based support for these activities
(Table 1).

Results

185 The results of interviews conducted and the one-day strategic planning session
resulted in the graphic representation of the factors impacting substance abuse on the
Island of Molokai (Figure 2), with the shaded boxes representing the causes
prioritized for programme impact. These areas included lack of: direction, self
identity, self confidence, self worth, understanding of real causes of their actions,
rules and structure, a cultural and spiritual base and communication and conflict
190 resolution skills.

The primary programme activities utilized to impact patients included providing a
safe structured environment for group counseling and team activities; living the 21
programme principles at the rate of one a day to increase self confidence, cultural
pride, and understanding of spiritual and cultural principles; providing individual
195 counseling to examine causes of actions and build healthy plans for the future;
teaching communication and conflict resolution skills to rebuild the family and
community relationship; and learning the risks of substance use (not identified as a
root cause, but felt to be important by programme staff).

200 The literature review demonstrated support for specific Kahua Ola Hou activities,
and this is represented next to the appropriate activities in Table 1. In addition to the
articles described in the introduction, addressing culturally tailored programme
effectiveness, the following additional articles were found that describe the
effectiveness of activities relevant to the Kahua Ola Hou programme. Waldron and
Kaminer (2004) demonstrated evidence for the efficacy of group therapy for
205 adolescent substance abuse treatment. Fiorentine and Anglin (1996) found that

Table 1 Evidence Based Support for the Rationale Behind Specific Activities

Authors	Kahua Ola Hou Activity	Antecedent condition	What evidence demonstrates
Fiorentine and Anglin (1996); Waldron and Kaminer (2004)	Provide safe structured environment for group counseling and activities	Lack of rules, structure, and role models	Group counseling is beneficial
Foulks and Pena (1995); Fisher <i>et al.</i> (1996); Nielsen <i>et al.</i> (1996); Lawendowski (1998); Czuchry and Dansereau (2000); Hurawai <i>et al.</i> (2000); Cervantes (2003); Edwards (2003); Gossage <i>et al.</i> (2003)	Teach participants 21 cultural principles: cultural pride, self esteem	Lack of self worth, self identify, cultural values, spiritual grounding, self confidence, communication and conflict resolution skills	Self esteem increases programme success; cultural knowledge and identity improve success
Fiorentine and Anglin (1996); Gil <i>et al.</i> (2004)	Participants will make a plan for healthy living through individual counseling	Lack of direction	One-on-one counseling and life skills training is beneficial
Freidemann (1994); Nielsen <i>et al.</i> (1996); Gil <i>et al.</i> (2004)	Teach communication and conflict resolution skills to rebuild family relationship and community functioning	Lack of communication and conflict resolution skills	Life skills and family relations improve outcomes

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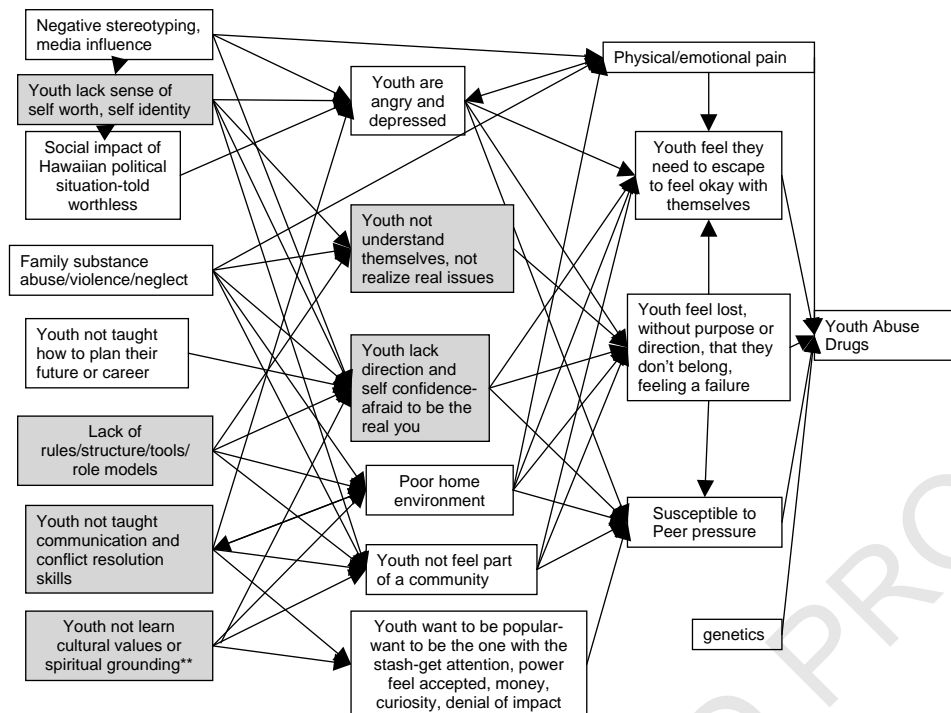


Figure 2 Logic model map of root causes of substance use developed by the Kahua Ola Hou Substance Abuse Treatment Programme on Molokai, Hawaii. (Shaded areas represent conditions targeted by Kahua Ola Hou Programme)

increasing the opportunity for group and individual counseling increases client participation in counseling, and elevates the overall effectiveness of outpatient drug treatment. Lawendowski (1998) found that motivational psychology and client-centered therapy improved recovery from addiction. Czuchry and Dansereau (2000) found that raising self esteem resulted in improved outcomes for treatment. Nielson *et al.* (1996) describe the effectiveness of a therapeutic community and work release programme that included self esteem building, self concept building, social skills, and vocational skills. Friedemann (1994) examined the congruence model for treatment of indigent substance abusers (the relationship of control and spirituality in family therapy setting), and found few relapses two to three months after treatment, and better family functioning after one month. Table 1 was created by pairing the methods found to be effective in the literature with Kahua Ola Hou activities.

During the strategic planning session, the programme staff generated ideas for programme evaluation, targeting the specific conditions of intended impact (shaded in Figure 2). Existing evaluation measures were included, as were new evaluation tools, to produce a picture of a thorough assessment of behavioral change, as judged by programme graduates, their family, their employers and their community. This evaluation includes completion rates, number of rules broken by week of programme,

Table 2 Evaluation by Programme Activity

Activity	Evaluation during programme	Post-programme evaluation	Data source
Provide safe structured environment for group counseling and activities	Documented change in number of rules broken from first week to third week of programme	Does graduate have stable living environment? Do they have a curfew? If so, do they comply? Does graduate attend school or work? Has graduate been arrested? Does s/he feel safe in her living environment?	Graduate survey; family survey
Teach participants 21 cultural principles: cultural pride, self esteem	Record of 21 principles in reflection journal	How many of the 21 principles can graduate name? Parent/boss: Does graduate utilize 21 principles?	Graduate survey; parent survey; employer survey
Participants will make a plan for healthy living through individual counseling	Development of wellness plan. Documentation of community service activities	School/work attendance and performance? Feedback from family/friends/community Compliance with wellness plan	
Teach communication and conflict resolution skills to rebuild family relationship and community functioning	Each graduate must lead at least one conflict resolution session	How does graduate deal with conflict? Does graduate have legal difficulties? How does graduate get along with family and community?	Graduate survey
Educate students about risks of substance use	Pre and post test of knowledge of risks	Attitude toward drug use	Graduate survey

Table 2 (Continued)

Activity	Evaluation during programme	Post-programme evaluation	Data source
General evaluation	Programme completion rates Completion of programme components Willingness to participate and communicate	Interviews described above will focus on these questions: Programme graduate interview: Drug use, success in school/work, attitude toward prayer, practicing ho'o pono pono, attitude toward drugs Community service, problems with the law, future plans Case manager interview: attitude, compliance with care plan, drug free community involvement Parent interview: attitude, communication skills, violence, attitude toward prayer, gratitude, community involvement, humility, sincerity, greeting parents, talking to parents, attendance at drug free events, drug rallies and youth groups Random drug testing	Graduate survey; parent survey; case worker feedback; drug testing (if available)
General community factors	Referrals from clients and families	High school graduation rates Crime rates Arrests for drugs or violence Attendance and change in participation in after care programmes	Statewide statistics; graduate survey; parent survey

change in attitude and communication skills, knowledge of drug risks (pre and post test), skills at conflict resolution, development of a wellness plan, and knowledge of the 21 principles, as represented by personal reflections written in journals. Interviews with graduates are to be performed at six weeks, six months, and annually for five years to determine use of illicit substances, work/school attendance, attitude toward drug use, and communication skills. Interviews will be conducted with the graduates' families and community case managers at six weeks and at six months to validate changes seen in programme graduates. If funding is available, random drug testing will be conducted, however, with the evaluation protocol developed, more attention will be given to measuring the change in behavior leading to substance abuse as an indicator of programme success.

Discussion

The treatment of substance abuse is multifactorial and includes behavior modification, emotional preparedness, life planning skills and personal acceptance of the need for change, as well as biological factors. Due to the high rates of substance abuse in indigenous populations, and the increased understanding of individual needs afforded through cultural awareness, the authors propose that cultural tailoring of programmes can increase success of treatment. However, in order to measure effectiveness in such a setting, appropriate programme evaluation should include measures of behavior change, attitude change, improved coping skills, and the ability to plan for the future to determine effectiveness.

The Kahua Ola Hou programme uses Native Hawaiian cultural and spiritual values in an attempt to increase self esteem, teach coping mechanisms, and help participants develop a healthy plan for living. While the initial evaluation of this programme was very positive, it only included self report of use of crystal methamphetamine. Counselors interviewing graduates also received reports by parents of Kahua Ola Hou patients describing the changed personalities of their children, their newfound ability to talk with them, and the graduates' willingness to help others. Furthermore, Kahua Ola Hou counselors found that programme graduates expressed a new-found shame if they used illicit drugs. Although these are important programme findings and indicate programme success, due to the lack of evaluation infrastructure, there was no mechanism for documenting the change in behavior of participants after programme completion. However, with the revised evaluation procedures, the extent of change in behavior will be monitored as an indicator of programme impact (Table 2).

Study limitations include the small number of subjects and the isolated unique population studied. The causes of substance abuse examined and the methods for evaluation in this study may not be generalizable to other populations; however, the researchers hope that the methods for developing evaluation tools may be helpful to other treatment programmes. It must also be kept in mind that the evaluation structure developed will have to remain flexible in order to adjust to the changing socio-political climate. Another limitation of the current study is that the researchers

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265 limited their area of influence to behavioral factors that programme planners felt
could be impacted. Thus, while genetics was identified as a cause of youth using
drugs, due to the process of prioritization, this was not addressed by programme
activities. Therefore, the programme evaluation described in this article is limited to
270 behavioral aspects of disease, and a separate evaluation methodology would be
appropriate for researchers studying the biological and genetic causes of substance
abuse.

By working with the counselors, community members and local graduates of
recovery programmes, the authors were able to identify and prioritize the causes of
substance abuse particular to the dominant culture of a rural area. By identifying the
275 programme activities utilized to impact the prioritized causes and assessing the
evidence supporting specific programme activities, the authors were able to develop
an evaluation framework and a plan for evaluation that measures factors that
represent steps along the way to abstinence. The evaluation described in this paper
will provide a broad assessment of the effectiveness of this culturally tailored
280 substance abuse treatment programme in a stepwise process by documenting
behavior change in participants that are predictive of lower future substance use.
The authors hope that this work will help expand the knowledge of cultural tailoring
of programmes, and allow its application in other health care and substance abuse
treatment settings.

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Note

- 290 [1] Illustration created by Abbie Napeahi, Anita Arce and Mona Dabilla for substance abuse
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References

- Aboriginal Corrections Policy Unit (2002) 'Mapping the healing journey: final report of a first
nation research project on healing Aboriginal communities', *Solicitor General of Canada and
the Aboriginal Healing Foundation*, Canadian Government Document.
- 295 Austin, A. A. (2004) 'Alcohol, tobacco, other drug use, and violent behavior among Native
Hawaiians: ethnic pride and resilience', *Substance Use and Misuse*, vol. 39, no. 5, pp. 721–746.
- Bays, J. (1990) 'Substance abuse and child abuse. Impact of addiction on the child', *Pediatric Clinics
of North America*, vol. 37, no. 4, pp. 881–904.
- Brave Heart, M. Y. (2003) 'The historical trauma response among natives and its relationship with
substance abuse: a Lakota illustration', *Journal of Psychoactive Drugs*, vol. 35, no. 1, pp. 7–13.
- 300 Cervantes, R. C. (2003) 'Culturally focused HIV prevention and substance abuse treatment for
Hispanic Women', *Addictive Disorders and Their Treatment*, vol. 2, no. 3, pp. 69–77.

- Czuchry, M. & Dansereau, D. F. (2000) 'Drug abuse treatment in criminal justice settings: enhancing community engagement and helpfulness', *American Journal of Drug and Alcohol Abuse*, vol. 26, no. 4, pp. 537–552.
- Edwards, Y. (2003) 'Cultural connection and transformation: substance abuse treatment at Friendship House', *Journal of Psychoactive Drugs*, vol. 35, no. 1, pp. 53–58.
- Fiorentine, R. & Anglin, M. D. (1996) 'More is better: counseling participation and the effectiveness of outpatient drug treatment', *Journal of Substance Abuse Treatment*, vol. 13, no. 4, pp. 341–348.
- Fisher, D. G., Lankford, B. A. & Galea, R. P. (1996) 'Therapeutic community retention among Alaska natives: Akeela House', *Journal of Substance Abuse Treatment*, vol. 13, no. 3, pp. 265–271.
- Foulks, E. F. & Pena, J. M. (1995) 'Ethnicity and psychotherapy. A component in the treatment of cocaine addiction in African Americans', *Psychiatric Clinics of North America*, vol. 18, no. 3, pp. 607–620.
- Friedemann, M. L. (1994) 'Evaluation of the Congruence Model with rehabilitating substance abusers', *International Journal of Nursing Studies*, vol. 31, no. 1, pp. 97–108.
- Gil, A. G., Wagner, E. F. & Tubman, J. G. (2004) 'Culturally sensitive substance abuse intervention for Hispanic and African American adolescents: empirical examples from the Alcohol Treatment Targeting Adolescents in Need (ATTAIN) Project', *Addiction*, vol. 99, no. 2, pp. 140–150.
- Gossage, J. P., Barton, L., Foster, L., Etsitty, L., LoneTree, C., Leonard, C. & May, P. A. (2003) 'Sweat lodge ceremonies for jail-based treatment', *Journal of Psychoactive Drugs*, vol. 35, no. 1, pp. 33–42.
- Hallfors, D., Vevea, J. L., Iritani, B., Cho, H., Khatapoush, S. & Saxe, L. (2002) 'Truancy, grade point average, and sexual activity: a meta-analysis of risk indicators for youth substance abuse', *Journal of School Health*, vol. 72, no. 5, pp. 205–211.
- Hurawai, T., Sellman, J. D., Sullivan, P. & Potiki, T. L. (2000) 'Optimal treatment for Maori with alcohol and drug-use-related problems: an investigation of cultural factors in treatment', *Substance Use and Misuse*, vol. 35, no. 3, pp. 281–300.
- Johnston, L. D., O'Malley, P. M., Bachman, J. G. & Schulenberg, J. E. (2004) *Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings* (NIH Publication No. 05-5726), National Institute on Drug Abuse, Bethesda, MD.
- Kim, R. & Gomes, F. (2005) 'Pono pre-post findings'. Unpublished data from PowerPoint presentation given by The Catalyst Group, LLC presented to the Bay Clinic Palama I 'Opipo'o Hawaii Project on 29 August.
- Lawendowski, L. A. (1998) 'A motivational intervention for adolescent smokers', *Preventive Medicine*, vol. 27, no. 5–2, pp. A39–46.
- Maharajh, H. D. & Bhugra, D. (1993) 'Brief family-therapy with alcohol-dependant men in Trinidad and Tabago', *Acta Psychiatrica Scandinavica*, vol. 87, no. 6, pp. 422–426.
- National Institute on Drug Abuse (2005) 'Drug abuse and addiction: one of America's most challenging public health problems'. US Dept of Health and Human Services. Available at: <http://www.nida.nih.gov/about/welcome/aboutdrugabuse/magnitude/>
- Nielsen, A. L., Scarpitti, F. R. & Inciardi, J. A. (1996) 'Integrating the therapeutic community and work release for drug-involved offenders. The CREST program', *Journal of Substance Abuse Treatment*, vol. 13, no. 4, pp. 349–358.
- Pearson, R. S. (2003) 'The 2003 Hawaii student alcohol, tobacco, and other drug use study. Adolescent prevention and treatment needs assessment. Native Hawaiian student results'. Available at: <http://www.hawaii.gov/health/substance-abuse/prevention-treatment/survey/report2003/ethnicreports/2003hawaiianstudents.pdf>
- Renger, R. & Titcomb, A. (2002) 'A three-step approach to teaching logic models', *American Journal of Evaluation*, vol. 23, no. 4, pp. 493–503.

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- 355 Rensnicow, K., Soler, R., Braithwaite, R. L., Ahluwalia, J. S. & Butler, J. (2000) 'Cultural sensitivity in substance use prevention. Bridging the gap between research and practice in community-based substance abuse prevention', *Journal of Community Psychology*, vol. 28, no. 3, pp. 271–290.
- 360 Siegal, H. A., Fisher, J. H., Rapp, R. C., Kelliher, C. W., Wagner, J. H., O'Brien, W. F. & Cole, P. A. (1996) 'Enhancing substance abuse treatment with case management. Its impact on employment', *Journal of Substance Abuse Treatment*, vol. 13, no. 2, pp. 93–98.
- Substance Abuse and Mental Health Services Administration (2002) 'Substance abuse prevention and treatment state data'. US Dept. of Health and Human Services. Available at: <http://www.nationaloutcomemeasures.samhsa.gov/.index.asp?id=3>
- 365 Waitzfelder, B. E., Engel, C. C. & Gilbert, F. I. (1998) 'Substance abuse in Hawaii: perspectives of key local human service organizations', *Substance Abuse*, vol. 19, no. 1, pp. 7–22.
- Waldron, H. B. & Kaminer, Y. (2004) 'On the learning curve: the emerging evidence supporting cognitive-behavioral therapies for adolescent substance abuse', *Addiction*, vol. 99, suppl. 2, pp. 93–105.
- 370 Williams, N., Nasir, R., Smither, G. & Troon, S. (2006) 'Providing opioid substitution treatment to Indigenous heroin users with a community health service setting in Adelaide', *Drug and Alcohol Review*, vol. 25, no. 3, pp. 227–232.
- Yuen, N., Andrade, N., Nahulu, L., Makini, G., McDermott, J. F., Danko, G., Johnson, R. & Waldron, J. (1996) 'The rate and characteristics of suicide attempters in the native Hawaiian adolescent population', *Suicide & Life Threatening Behavior*, vol. 26, no. 1, pp. 27–36.