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Volume 2 of *Substance Abuse Library and Information Studies* serves as the eProceedings of the 37th Annual Conference, entitled *Linking Worlds of Knowledge: SALIS, an International Pathway,* organized by the Substance Abuse Librarians and Information Specialists (SALIS) and hosted by the Silver Gate Group in San Diego, CA, April 28 – May 1, 2015.

SALIS is an international association of individuals and organizations with special interests in the exchange and dissemination of alcohol, tobacco, and other drug (ATOD) information (salis.org).
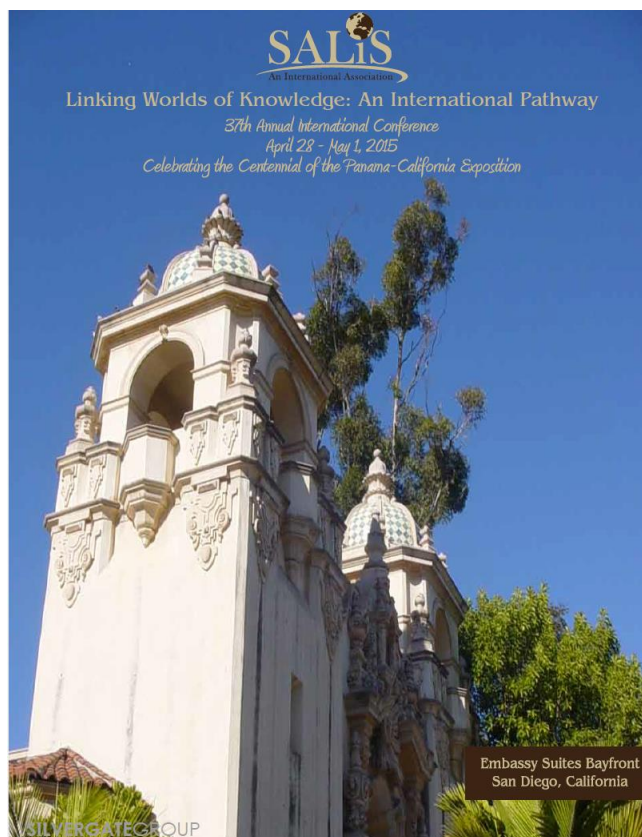
Information is power

Presenting Substance Abuse Libraries and Information Studies (SALIS), V. 2

Judit H. Ward

Center of Alcohol Studies
Rutgers, The State University of New Jersey

William Bejarano

Center of Alcohol Studies
Rutgers, The State University of New Jersey

Introduction

Welcome to the second volume of *Substance Abuse Libraries and Information Studies* (a.k.a. the SALIS Conference eProceedings). In compiling the Proceedings of the 37th Annual Conference of the Substance Abuse Librarians and Information Specialists (SALIS), hosted by the Silver Gate Group in San Diego, CA, the editors have become intimately familiar with the topics first presented April 28 through May 1, 2015. We are strong advocates of content dictating format, reflected by the organization of this volume.

SALIS members have two distinct interests, represented by the two common conference threads. We are specialists in information, and we are connected in some direct or indirect way to the problems associated with substance use. While these similarities inextricably tie us to one another, there is a wide and diverse range of ways that these two topics are expressed in our professional and academic careers.

Information is a powerful tool. This is the underlying message emerging from this collection of excellent papers after a thorough reading, reviewing, editing, re-reading, and final publication of each of them, with the help of our peer-review and copy-editing teams. As the information specialists in a field dedicated to a specific societal problem, we have a responsibility to serve as the arbiters

of its evaluation, organization, and ultimately presentation to our narrow scholarly and professional communities and to the broader public.

Because information is presented in various ways, this volume represents the diverse and vibrant styles and formats of the conference presentations by separating them into four distinct sections. These four sections allow us to group each piece by its central focus, although these categories are by no means mutually exclusive. Consider these sections a loose association of common threads ultimately pointing to the SALIS mission: namely, the "dissemination of knowledge and objective, accurate information about the use and consequences of alcohol, tobacco, and other drugs" (About SALIS, n. d.).

Addiction Information

The first section comprises seven articles written directly about addiction through an information professional's lens. The first of these articles is Barbara Seitz de Martinez's "Risk and protective factors for adolescent mental health and substance abuse problems: Adolescent suicide in Indiana and the US – Why Hispanic girls are particularly at risk." Martinez's paper on this important issue sets the tone of the volume, displaying in great detail how data can be used as a way of better understanding a phenomenon with the ultimate goal of reducing risk. Next are two articles generated from a panel on systematic searching in the addiction field, written by Karen Heskett, Sheila Lacroix, and Karen Palmer, which offer practical advice not only for librarians but for anyone who wants to fully review a topic in this discipline. The section concludes with four articles from our "Language matters" panel, Judit Ward, William Bejarano, Christine Goodair, and David Man, analyzing the use and understanding of terminology from linguistic, historical, medical, scientific, and international perspectives.

Information Science

The second section is dedicated to emerging themes with the potential of linking worlds of knowledge. It starts with an overview written by William Bejarano and Judit Ward on displaying scholarly reputation in visually pleasing and meaningful ways in order to turn these large, complex data sets into something more digestible and understandable to the general public. The latter theme continues in "Short attention span theater: Instructional design for optimal learning" by Meg Brunner, Nancy Sutherland, and Jennifer Velotta, which addresses the relevance of cognitive demands in developing effective training materials and programs. Next, Christine Goodair's "Facilitating the sharing of pools and seas of knowledge through channelling information more effectively" focuses on issues related to sharing knowledge and expertise across multidisciplinary projects. Rounding out the section is Judit Ward, William Bejarano, and William Haggis' article "Open during renovation: Open Science and libraries," which reviews the principles and ramifications of Open Science as well as the evolving roles for librarians that this movement entails.

Reports

Each SALIS Conference provides an opportunity to discuss current topics in the field as well as new advancements and updates on SALIS projects. This section begins with a report on the exciting marijuana panel titled "Marijuana: Exploring the next steps in marijuana control," written by Sheila Lacroix and based on the contributions of Thomas Babor, James Lange, and John Minan. Following that is a four-part report by Andrea Mitchell, Sheila Lacroix, Nancy Sutherland, and Christine Goodair on the major SALIS digitization project entitled "The SALIS collection unveiled: Building an ATOD digital archive."

Poster session

Following the success of the previous SALIS Conference, poster sessions were supported by 3-5 minute "ignite sessions" in which the presenters had the opportunity to avoid redundant conversation points during the observation period by giving a brief explanation of their posters to the entire group. There were five posters in total written up for the Proceedings, coming from the Alcohol & Drug Abuse Institute, University of Washington ("Finding substance abuse resources for your community" and "The retention toolkit") and the Rutgers Center of Alcohol Studies ("Scholarly selfies in addiction," "Bunky's scholarly selfie," and "Books that get to you").

The Power of Information

As a collective, SALIS members make up the information and documentation arm of an emerging academic field. As illustrated by the broad range of topics offered in this year's volume, this responsibility presents itself in increasingly diverse and specialized ways. It is difficult to pin down a substance abuse information professional's job, but as a general rule, we all deal with the organization, processing, evaluation, and presentation of information related to the use and misuse of substances. Sometimes that information can be found in the interpretation of data about a narrow societal issue at a crucial point in time. Other times, the scope is expanded to a wider historical or systematic review of a subject relevant to those in the field. These respective projects are presented annually during a few days in the spring to the relatively small group of members able to attend. For SALIS members who have not been able to attend, the members only section of the SALIS website has been helpfully offering presentation slides of each conference dating back to 2002. *SALIS News,* our quarterly newsletter, has been instrumental in providing a sense of community among SALIS members and a forum for keeping up with their latest activities as well as those of their respective organizations. Complementing these member-focused resources, *Substance Abuse Libraries and Information Studies* aims to expand access of this powerful information to the general public, hopefully inspiring fellow librarians to make their own contributions to the field by organizing and presenting on their own projects. Preservation of this information is important. We owe a great debt to our predecessors, and have a great respect for the past, and as such we feel obligated to preserve and disseminate this content for all to see.

References

About SALIS. (n.d.). Retrieved from
    http://salis.org/about/about.html

Risk and protective factors for adolescent mental health and substance abuse problems Adolescent suicide in Indiana and the US – Why Hispanic girls are particularly at risk

Barbara Seitz de Martinez

Indiana Prevention Resource Center (IPRC)

Adolescence is a challenging time for young people during which they are transitioning from childhood to adulthood and seeking to establish their personal identity, independence and self-management in the context of a developing body and a complex world. Depression (mood disorders) and substance abuse (alone or in combination with mood disorder) place people, including adolescents, at increased risk for suicide. In fact, almost all persons who die by suicide suffer at the time of the event from mental illness, substance abuse, or both (NAMI, 2007). This paper discusses risk and protective factors related to adolescent suicide, looking broadly at the United States, more specifically at Indiana, and then focusing on the case of Hispanic female high school students and reasons why they are at particularly high risk. This paper points out many useful resources and statistics of interest to Substance Abuse Library and Information Specialists (SALIS) members serving related research fields and the public.

Keywords

Substance abuse, Suicide, Latinos/Latinas, Adolescents, Mental health

Risk and protective factors for suicide

Risk Factors

Risk factors are conditions that increase the likelihood of a person becoming involved in drug use, delinquency, dropping out of school and/or violence – unhealthy behaviors. A risk factor precedes the problem behavior and is associated with a higher likelihood of problem outcomes. According to the Centers for Disease Control and Prevention (CDC), leading risk factors for

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suicide include: a family history of suicide and/or child maltreatment; previous suicide attempts; a history of mental disorder, especially of clinical depression; a history of alcohol and other substance abuse; feelings of hopelessness; impulsive or aggressive tendencies; cultural or religious beliefs that suicide is a noble way to resolve a personal dilemma; local epidemics of suicide; isolation or feelings of being cut off from others; obstacles to mental health treatment access; loss related to a relationship, social life, work or finance; physical illness; ready access to firearms or other lethal methods; and a refusal to seek help because of stigma associated with mental health disorders, substance abuse or with having suicidal thoughts (CDC, 2013b).

According to the Suicide Prevention Resource Center (SPRC), risk factors that are particularly significant for Hispanic people as a culture group include: alcohol abuse; the lack of access and use of mental health services, alienation, the stresses of acculturation and family conflict; feelings of hopelessness and a tendency to fatalism; and perceived discrimination (SPRC, 2013b). These affect both adults and adolescents. Later in this session we will examine these and other risk factors affecting adolescents.

Protective factors

Protective factors are conditions that buffer a person from exposure to risk by either reducing the impact of the risks or changing the way the person responds to risks. These are the characteristics at the individual, family, school, community or cultural level that are associated with lower likelihood of problem outcomes and an increased likelihood of healthy, positive attitudes and behaviors. Protective factors named by the CDC include: receiving effective clinical care for mental, physical or substance abuse disorders; having ready access to several options for clinical intervention, along with a support system for doing so; being connected to family and community; receiving support from established physical

and mental health care givers; being skilled at problem-solving and conflict resolution; being able to use environmental methods of dealing with disputes; and having cultural beliefs that affirm the natural instinct for self-preservation and discourage suicide as an optional strategy (CDC, 2013b). (Image source: dreamstime.com)

Protective factors that are particularly significant for Hispanics as a culture group include strong family ties and support (*familismo*), religiosity, and moral objections to suicide; particularly significant for Latina adolescents are ethnic affiliation and caring from teachers (SPRC, 2013b). An additional protective factor is cultural pride, which enhances a positive self-image and supports resiliency (SAMSHA, 2013a).

Shared risk and protective factors for substance abuse and mental health

Some risk and protective factors are shared for both substance abuse and suicide. Shared risk factors include health challenges, adverse childhood experiences, parental/family problems, exposure to violence, and the experience of prejudice or perceived prejudice. Shared protective factors against both substance abuse and suicide include healthy self-esteem, access to mental health services, parent/family support, social support, and cultural pride (Stout, 2015). Later in this piece we will explore several of these in more detail.

Incidence and prevalence

According to the CDC, 41,149 persons died by suicide in the US in 2013 (CDC, 2013a). In Indiana from 2006 to 2010, 19,719 died from injuries, of which 21% or 4,115 were by suicide (ISDH, 2013).

Suicide as of 2012 is the 10th leading cause of death in the U.S with 12.6 deaths per 100,000 persons (CDC, 2014a); it was the 11th leading cause of death in Indiana with 13.1 deaths per 100,000 (ISDH, 2013). Indiana's suicide rates are higher than those

of both the nation as a whole and the Midwest.

Age	US*	IN**
10-14	3rd	3rd
15-24	2nd	2nd
25-34	2nd	2nd
35-44	4th	4th
45-54	5th	4th
55-65	8th	9th
Total Pop.	10th	11th

Table 1. Suicide among top causes of death in U.S. and IN Source:*CDC, 10 Leading Causes of Death by Age Group, United States – 2013 (2013), http://www.cdc.gov/injury/wisqars/pdf/leading_causes_of_death_by_age_group_2013-a.pdf; **ISDH, Suicide in Indiana Report 2006-2011 (Sept 2013)

Suicide Warning Signs

Most people who die by suicide exhibit signs of their intention to self-harm. Suicide warning behaviors include showing signs of depression, anxiety and/or low self-esteem. The person may be feeling that there is no reason to live. S/he may be focusing his/her thoughts on death and suicide directly by talking or writing about these topics or indirectly by talking about going away or by making preparations, such as giving away personal treasures or obtaining a lethal weapon. Changes in behavior may be dramatic, like sharply dropping grades, suddenly taking risks, violent acts, or mood reversals. Use of alcohol, tobacco, or other drugs may increase. A potential or recent severe loss can trigger thoughts of suicide. Unwillingness to accept help from others is also a cause for concern (DoD, 2013).

Age

Nationally as of 2011, the highest rates (prevalence) of suicide occurred among middle-aged adults ages 45 to 54 (19.8/100,000), followed by the elderly aged

85 and older (16.9/100,000). Children and adolescents are influenced by the behaviors of the adults in their environment. From 2006-2010, the greatest number of suicides (incidence) both nationally and in Indiana occurred among 45-54 year-olds, followed by ages 35-44 (ISDH, 2013).

For adolescents and young adults between 15 and 24, though the rates are lower (9.7 – 11.0/100,000), suicide was nonetheless the second leading cause of death in 2011, outnumbering homicides (AAS, 2014a). For the years 2006-2010, suicide was the third leading cause of death nationally, after homicides, for ages 15-24, while in Indiana suicide was the second leading cause of death for this age group, outnumbering homicides (ISDH, 2013). (Indiana state data was not included in the national CDC 2013 Youth Risk Behavior Survey (YRBS) report due to insufficient participation in the survey by Indiana schools.)

10-14	28
15-19	192
20-24	295
25-34	647
35-44	795
45-54	973
55-64	581
65+	585

Table 2. Suicide by age group, IN, 2006-2010
Source: ISDH, Suicide in Indiana Report 2006-2011 (Sept 2013)

Findings from the 2014 Indiana Youth Survey (INYS) conducted by the Indiana Prevention Resource Center (IPRC) of the IU School of Public Health – Bloomington show that, compared to high school students nationally, Indiana students reported lower rates of mental health conditions related to suicide as follows: 9th-12th graders reported lower rates than the nation for "feeling sad or

hopeless," as did 11th-12th graders for "considering attempting suicide," 10th-12th graders for "planning to attempt suicide," and 11th-12th graders for "attempted suicide" (Gassman, et al, 2014).

College students in Indiana who took the Indiana College Substance Abuse Survey conducted by the IPRC responded to questions related to mental health status and suicide. Asked how many days in the past month they experienced poor mental health in the form of stress, depression or problems with emotions, the response was an average of 5.9 days, with females reporting 6.5 days compared to 4.6 days for males. For those under 21, the average was higher at 6.1. In response to other questions, 14.3%, or one in seven students, had thought during the past two weeks that he/she would be "better off dead" or had thought of "hurting themselves in some way." More female students (15.2% versus 12.9% of males), and more students of either gender under age 21 (15.9% compared to 12.6% of older students) had thoughts of harming themselves or of suicide (King & Jun, 2013).

Method

Methods by which people die from suicide vary by gender, with firearms most common among males and poisoning most common among females. Overall in Indiana from 2006-2010, 53.6% of suicides were by firearms, 18.6% by poisoning, compared to 50.6% and 16.6% respectively for the U.S. (ISDH, 2013). The age-adjusted rate of drug poisoning deaths, which include suicide deaths and multiple other causes, doubled from 1999-2012; those involving opioid analgesics increased more than threefold, and those involving heroin by 35% just from 2011 through 2012 (CDC, 2015d). The same source indicates includes a map from the NVSS, Mortality File, showing that Indiana is among the states with a rate of age-adjusted drug-poisoning deaths in 2012 that was significantly higher than the overall U.S. rate. (CDC, 2015d)
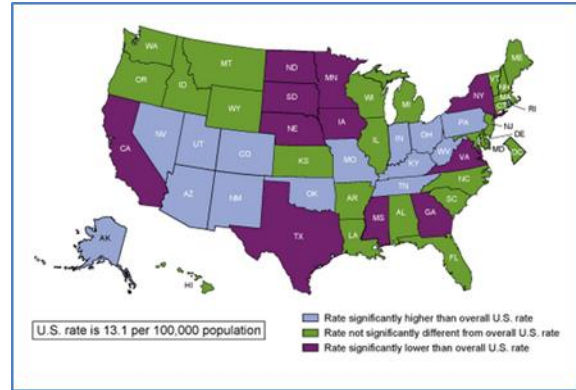

Figure 1

Method	US	IN
Firearms	50.6%	53.6%
Suffocation	25%	23.0%
Poisoning	16.6%	18.4%
Other	7%	14.9%

Table 3. Method used in deaths by suicide

Source: ISDH, Suicide in Indiana Report 2006-2011 (Sept 2013)

Race	Rate per 100,000
White Non-Hispanic	13
Black Non-Hispanic	5.7

Table 4. Use of firearms, suicide deaths, IN

Source: ISDH Suicide in Indiana Report 2006-2011 (Sept 2013)

Gender	Rate per 100,000
Male	11.2
Female	1.5

Table 5. Use of firearms, suicide deaths, US

Source: ISDH, Suicide in Indiana Report 2006-2011 (Sept 2013)

Race/ethnicity and gender

Nationally suicide rates among males are at least four times higher than among females. For the U.S. in 2011, males died by suicide at a rate of 20.2 per 100,000

compared to 5.4 for females. Females are three times more likely to attempt suicide than males (AAS, 2014a, 2014b). Indiana's rates mirror the nation's, with males between four and five times more likely to die by suicide (ISDH, 2013). Though behavior patterns can differ by age group and young adults may not behave the same as high school students, it is still of interest to note that based on the National Vital Statistics System (NVSS) from 2009-2013, for Hispanic young adults ages 18-24 death by suffocation was the most common suicide method, with firearms second (CDC, 2015c).

In Indiana in 2010, suicide rates for Whites (14.1/100,000) exceeded the rates for American Indian/Alaska Natives (11.0), Asian/Pacific Islanders (6.2), and Black/African Americans (5.1). Whites accounted for 90.4% of total suicides (ISDH, 2013).

Both nationally and in Indiana, white males have the highest rates of suicide, and Whites account for 90.5% of Indiana's suicide deaths (ISDH, 2013). Among white males in Indiana, rates are highest in the 45-54 age group, followed by seniors 65 and older and then by those ages 35-44 (ISDH, 2013).

Gender/Race	White	Black
Males	22.3	8.8
Females	5.3	1.9

Table 6. Suicide rates by race and sex, IN, 2006-2010
Source: ISDH, Suicide in Indiana Report 2006-2011 (Sept 2013)

Race	Rate
White	13.5
Black	5.1
Asian	5.2
American Indian	2.7

Table 7. Suicide Rates by Race, Indiana, 2006-2010
Source: ISDH, Suicide in Indiana Report 2006-2011 (Sept 2013)

Adolescents and young adults

Although American Indian/Alaskan Native, Non-Hispanic Blacks and Hispanics all have lower rates of suicide than Whites as of 2010, this does not hold true for youth. The suicide rate for American Indian/Alaska Native adolescents and young adults ages 15-34, at 31 per 100,000, is 2.5 times higher than the national average for that age group (12.2) (CDC, 2012b). The percentage of Indiana Non-Hispanic Black high school students who reported on the YRBS in 2011 having attempted suicide that resulted in injury, poisoning or overdose needing treatment by a doctor or nurse was nearly two times higher than that of the general high school population (7.6% vs. 3.9%) (CDC, 2015b).

While Non-Hispanic Blacks and Hispanics of any gender have lower rates of suicide than Non-Hispanic Whites, Non-Hispanic Black and Hispanic youth are affected at a disproportionately higher rate than are Non-Hispanic Black and Hispanic adults (SPRC, 2013a, 2013b). Suicide is the 3rd leading cause of death for Non-Hispanic Blacks ages 15-24 and for Hispanics ages 15-34, while for Non-Hispanic Blacks the average age of death by suicide (32) is a decade younger than for Non-Hispanic Whites (44) (SPRC, 2013a, 2013b). Suicide is the second leading cause of death for American Indians/Alaska Natives ages 15-34 (CDC, 2012b).

In the 2013 YRBS, comparing US Hispanic high school students of any gender to Black and White Non-Hispanic students, Hispanics as a group were statistically more likely (based on t-test analysis, p<0.05) than either Non-Hispanic Blacks or Non-Hispanic Whites to exhibit four of the five criteria associated with suicide in the YRBS survey: having considered suicide, having made a plan for how to die by suicide, having attempted suicide, and having attempted suicide resulting in an injury that required medical attention (CDC, 2015b). For feeling sad or hopeless during the past two weeks, Hispanics were statistically more likely (based on t-test analysis, p<0.05) than Non-

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Hispanic Whites but not more so than Non-Hispanic Blacks.

	Feeling sad or hopeless in last 2 wks.	Considered/thoughts of suicide	Made a plan	Attempted	Attempted with injury resulting in seeking medical attention
U.S.	29.9	17	13.6	10.6	2.7
Hispanics	**36.8**	**18.9**	**15.7**	**15.6**	**4.1**
Whites	27.3	16.2	12.8	8.5	2
Blacks	27.5	14.5	10.4	8.8	2.7

Table 8. Percent of high school students reporting suicide-related behaviors, 2013. Source: CDC, 2013 YRBS, 2014

For three of these behaviors reported in the table above, the greater likelihood for Hispanics than Non-Hispanic Whites was statistically significant such that the result has a p-value of 0.00: feelings of sadness or hopelessness, having attempted suicide, and having attempted suicide resulting in an injury that required medical attention (CDC, 2015b).

In the 2013 YRBS Hispanic female high school students were more likely than their Non-Hispanic white female peers and the nation as a whole to report all five behaviors associated with suicide. The difference carried a p-value of 0.00 for feeling sad and hopeless (47.8 vs 35.7) and for having attempted suicide (15.6 vs. 8.5) (CDC, 2015b).

	All	Female	Male
U.S.	8	10.6	5.4
Hispanic	**11.3**	**15.6**	**6.9**
White Non-Hispanic	6.3	8.5	4.2

Table 9. Percent of High School Students reporting having attempted to die by suicide in the past year by race, 2013. Source: CDC, 2013 YRBS, 2015

The difference carried a p-value of 0.01 for having seriously considered suicide (26.0 vs. 21.1) and for reporting having attempted suicide that resulted in injury, poisoning or overdose needing treatment by a doctor or nurse (5.4 vs. 2.8) (CDC, 2015b).

	All	Female	Male
U.S.	29.9	39.1	20.8
Hispanic	**36.8**	**47.8**	**25.4**
White Non-Hispanic	27.3	35.7	19.1

Percent of high school students reporting feeling sad or hopelessness in the past two weeks by race, 2013. Source: CDC, 2013 YRBS, 2015

	All	Female	Male
U.S.	17.0	22.4	11.6
Hispanic	**18.9**	**26**	11.5
White Non-Hispanic	16.2	21.1	11.4

Table 10. Percent of high school students reporting seriously considered suicide in the past year by race, 2013. Source: CDC, 2013 YRBS, 2015

	All	Female	Male
U.S.	2.7	3.6	1.8
Hispanic	**4.1**	**5.4**	**2.8**
White Non-Hispanic	2	2.8	1.1

Table 11. Percent of high school students reporting attempted suicide that resulted in an injury, poisoning or overdose that had to be treated by a doctor or nurse in the past year by race, 2013.
Source: CDC, 2013 YRBS, 2015

Hispanic female high school students were also more likely than their white female peers to have made a plan for dying by suicide (10.1 vs. 15.6), with a p-value of 0.02 (CDC, 2015b).

	All	Female	Male
U.S.	13.6	16.9	10.3
Hispanic	**15.7**	**20.1**	**11.2**
White Non-Hispanic	12.8	15.6	10.1

Table 12. Percent of High School Students reporting having made a plan for dying by suicide in the past year by race, 2013. Source: CDC, 2013 YRBS, 2015

For the most recent year of YRBS data available, 2011, Hispanic females reported higher rates for having seriously considered attempting suicide, making a plan, attempting suicide and for attempts that resulted in injury or harm than any other gender and ethnicity (CDC, 2012). Indiana Non-Hispanic Black females reported the highest rates of having felt sad or hopeless at 43.1%, slightly higher than Hispanics at 36.5% (CDC, 2012). The same data shows that Hispanic females were statistically significantly more likely than White females to have seriously considered suicide (30.2% vs. 19.5%) and to have made a plan (27.2% vs. 12.4%), both carrying a p-value of 0.00.

For having made a suicide attempt (15.6% vs. 9.2%) a p-value was not available, and for having made an attempt with injury resulting in seeking medical attention (5.2% vs. 3.5%), the p-value was 0.34.

	Seriously considered suicide	Made a plan
Hispanics	**30.2**	**27.2**
Whites Non-Hispanic	19.5	12.4

Table 13. Percent of Indiana female high school students reporting selected suicide-related behaviors with statistically significantly greater likelihood of Hispanic females compared to White females.
Source: CDC, 2011 YRBS, 2012

Populations at high risk

Military personnel and veterans are at high risk. From 2009 to 2012, according to the Department of Veterans Affairs *Suicide Data Report*, approximately 22.2% of deaths by suicide were of military veterans (Kemp and Bossarte, 2012). Deaths by suicide in this population reached an all-time high in 2012 (Burns, 2013). Salient risk factors for military personnel include sexual assault in adulthood (Preidt, 2013) and problems and stresses related to relationships, legal and financial matters (DOD, 2013).

One in 15 high school students nationally has either made a suicide gesture or attempted suicide in the past year (SAMHSA, 2012). For high school students the association between substance abuse and suicide is clear. A study based on data from the CDC Youth Risk Behavior Survey (YRBS) looked at the association between each of ten substances and suicide on different levels (suicidal ideation, plan, attempt and serious attempt). Researchers found the use of any of the ten substances was associated with increased risk of suicide. The strongest association was found for heroin use, followed by steroids and methamphetamine. By contrast, high academic performance is inversely associated with suicide (higher grades – lower risk) (Wong, et al, 2013).

Adolescents who have suffered *adverse childhood experiences* are at higher risk. Research shows that adverse childhood experience is a shared risk factor for substance abuse and mental health disorders

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(SAMHSA, n. d.) and that clinical depression and substance abuse are risk factors for suicide (CDC, 2013b; SPRC, 2014b). It is consequently a matter of grave concern that the 2009 YRBS survey found that 17.3% of Indiana's 9th to 12th grade girls report having suffered forced intercourse, compared to 10.5% nationally in 2010 (CDC, 2010c; Cierniak, et al, 2012). The following year Indiana again ranked second with 14.5% of girls reporting ever having experienced forced intercourse, compared to 11.8% nationally (CDC, 2012c:69). Adding to the seriousness of the situation is the fact that only a fraction of victims report sexual assault to authorities. One report estimates that nationally 60% of rapes are not reported to the police (RAINN, 2009). A survey of Indiana women age 18 and over in Indiana found that only 15% of those suffering sexual assault short of rape and only 12.5% of those suffering rape reported it to the police (Cierniak, et al, 2012).

LGBTQ youth are disproportionately victims of bullying, harassment and discrimination and are at especially high risk of suicide (Stout, 2014; CDC, 2014d). Risk of suicidal ideation, attempts and suicide are elevated, with more than twice as many LGBT youth attempting suicide as their heterosexual counterparts (CDC, 2014d).

A survey of young gay and bisexual Latino youth found that they report the highest number of rejecting behaviors by parents or caregivers, and they were found to be at higher risk than Latino females or Whites to report having attempted to die by suicide (Haas, 2011). This rejection by parents or caregivers places the youth at a risk of attempting suicide eight times greater than average (Haas, 2011; Ryan, 2009). Ryan, et al, found that Latino men reported "the highest number of negative family reactions to their sexual orientation in adolescence" (Ryan, et al, 2009).

As has been highlighted earlier in this paper, adolescent Hispanic females are at elevated risk for depression and suicide-related behaviors. The reasons for their

elevated risk will be the focus of the rest of this piece.

The case of Hispanic girls, nationally and in Indiana

Brief background on Hispanic culture

Latinos make up 17.6% of the U.S. population and 6.7% of Indiana's population. Of the about 55.7 million Latinos in the U.S. in 2014, Indiana is home to an estimated 443,500 persons with direct or generational ties to over two dozen nations of Latin America, including Mexico, Cuba, Jamaica, Haiti, and the Dominican Republic. Indiana's Latinos trace their heritage to Latin American countries, each of which has its own history, legends, heroes, dances and culture. Another aspect of the diversity of Latino Americans and Latino Hoosiers is the number of years or generations that they have been in the U.S.

Language is an extremely important element of culture because it is one primary way people make possible the transmission of values and concepts. Spanish is the primary language spoken in Latin America, although others, including many indigenous languages, are also spoken.

A large percentage of Latin Americans are of European and indigenous (*mestizo*), African and indigenous, or African and European ancestry. Mestizos are the majority in over half of the countries of Latin America. Several million Latin Americans are of Asian descent. An estimated 40 million people in Latin America belong to nearly 600 indigenous groups. Cultural identity is made up of many components. For Latinos ethnicity is a much more important characteristic than race; Latinos are proud of their ethnic heritage and want to be recognized, for example, as Mexican American, Cuban American, or Guatemalan American.

Culture is dynamic, shared, ever-changing, and always rooted in the past. At any given moment culture is the sum total of life patterns (linguistic, social, economic, institutional, artistic, culinary, etc.) passed from generation to generation in a given

community. Deep culture includes the thoughts, concepts, and understandings of a group. Deep culture includes concepts about fairness, gender roles, and non-verbal communication. Latinos tend to conceive of the family more broadly, often encompassing several generations. In U.S. culture (individualistic) one's first obligation is to oneself; in Latino culture (collectivistic) it is to the family or society. Latin American society is diversified by, among other things, educational attainment, occupation, socio-economic status, urban and rural lifestyles, and gender roles associated with the many subcultures (Seitz de Martinez, 2014a).

Acculturation refers to "a dynamic and multidimensional process of adaptation that occurs when distinct cultures come into sustained contact" (Organista, et al, 2010). For new immigrants, especially first and second generation immigrants, the experience of acculturation is sufficiently recent to be palpable. Acculturation can affect people's physical and mental health and is associated with risk and protective factors related to substance abuse and other health-related behaviors, including suicide. For the Latino immigrant the process of acculturation begins with the context of exit from the country of origin. Trauma is a risk factor for mental health and substance abuse. Adverse childhood experiences have long-term influences as risk factors for both substance abuse and physical and mental illness throughout the lifespan (Seitz de Martinez, 2014b).

Depression

Research has established that depression and other mood disorders like anxiety are the leading risk factor for suicide, followed by substance abuse (SPRC, 2014; SAMSHA, 2009, 2014; White House, 2013; ONDCP, 2013). The CDC estimates the percentage of the U.S. population with depression in any 2-week period at 8% (CDC, 2015a).

Certain ethnicities report higher depression rates than non-Hispanic Whites. Hispanics, along with Non-Hispanic Blacks and Non-Hispanic Others, were more likely to report depressive symptoms than non-Hispanic Whites (CDC, 2010a). A national sample of over 16,000 persons ages 18 and over measured depressive symptoms in the past week and found that 27% of Hispanics of either gender met a cut-point indicating they should be referred to a mental health professional for clinical evaluation (Wassertheil, et al, 2014)

According to Faris, women in the US and worldwide are two times more likely than men to suffer depression, and Hispanics are more likely to be depressed than non-Hispanic Whites (Faris, 2012).

Several studies have found Latina women to be at higher risk of depression than other groups, including Latino men, White or African American women. (NAMI, 2009a). Their rate of depression is about twice that of Latinos (Hispanic males) and higher than those of Whites or African American women (NAMI, 2009b).

Latina adolescents have been found to be at especially high risk for depression (Guiao, 2004; Balis and Postoloche, 2008), Cespedes and Huey, 2008). Furthermore, studies have shown that both depression and anxiety are positively correlated with increased rates of suicidal behavior, and adolescents who are depressed are 35–50% more likely to attempt suicide ([Dopheid, 2006](#)).

Gender roles, gender discrepancy, *marianismo* and *machismo* are discussed by Cespedes and Huey (2008). Other risk factors associated with depression for Latino adolescents are: the stressors of immigration and acculturation; the adverse experiences of exposure to violence and traumatic events, often associated with migration; and discrimination (Potochnick and Perreira, 2010).

Substance abuse

For the general population of adolescents substance abuse is the second greatest risk factor for suicide after depression and related mood disorders and is often found in combination with mental illness (White

House, SPRC, Harding, Cash, et al, 2009). Substance abuse contributes especially to suicide among older adolescents with co-occurring mental health problems (Cash et al, 2009, Brent, et al, 1999). Youth ages 13 or younger were found to be 2.6 times more likely to report a suicide attempt than their peers who did not report heavy episodic drinking. Youth ages 18 or older were found to be 1.2 times more likely to report a suicide attempt than their peers who did not report heavy episodic drinking (Cash et al, 2009; Aseltine, et al, 2009). The combination of alcohol consumption plus depression in the form of "feeling down" was found to result in a tripling in the risk of reported suicide attempts (Cash, et al, 2009; Shilling, et al, 2009).

Research based on the Indiana Youth Survey has found Hispanic females at greater risk for alcohol use, binge drinking, and other drug abuse problems. The 2013 YRBS found Hispanic high school students were more likely (based on t-test analysis, p < 0.05) than Blacks or Whites to have ridden with a driver who had been drinking alcohol (29.1% of Hispanics compared to 21.9% of Blacks and 19.7% of Whites) in the month before the survey (CDC, 2014c). Certain risk factors that affect both sexes appear to affect females more. Suggested reasons for this were increased physical vulnerability of females to the effects of alcohol (by volume consumed), females' socialization with older male peers who would tend to drink more than the females' same-age peers, and gender role discrepancy and its associated acculturation dissonance (Vaughan, et al, 2015).

Acculturation stress

Stresses associated with acculturation place Hispanic immigrants at higher risk of depression and anxiety (Forster, et al, 2013), and consequently risk of suicide (Potochnick and Perreira, 2010). Stressors include having to learn a new language, having to adjust to different social norms and dynamics in the family, and encountering discrimination. Research finds positive association of acculturation stress with such internalizing behaviors as low self-esteem, depression and increased incidence of suicidal alienation (Potochnick and Perreira, 2010). Protective factors that help buffer Latino youth against these risk factors include family bonding and social support from family, caring teachers, and the broader Hispanic community (Forster, et al, 2013). Also, a longer time in the U.S. tends to reduce stresses associated with immigration and acculturation (Potochnick and Perreira, 2010).

Gender role discrepancy

In an article titled "Why Do So Many Latina Teens Attempt Suicide," Zayas et al. propose a model to describe how certain factors are more likely to be close antecedents to a suicide attempt by a Hispanic adolescent female. Zayas et al. offer a model whereby culture and cultural traditions, adolescent development, and family functioning comprise the family sociocultural environment. The character of this environment impacts the emotional vulnerabilities and psychosocial functioning of the adolescent, which in turn affects the adolescent's subjective experience of a family crisis, and this subjective experience of family crisis affects the adolescent's likelihood to attempt suicide (Zayas et al., 2005). This model is relevant to the following discussion of gender discrepancy as a risk factor for suicide for Hispanic female adolescents.

Related to cultural traditions and acculturation stress, gender discrepancy can affect multiple generations, though the greatest impact would be expected among new immigrants and first generation children. More than their male peers, Latina adolescents suffer from differences in gender role beliefs and expectations for behaviors. Cultural differences in gender role expectations between traditional culture of origin and U.S. culture tend to be greater for females than males. Differences in beliefs between youth and parents regarding appropriate female gender roles, particularly among recent immigrants between girls and

their mothers, has been found to be a source of stress for Latino adolescents. Gender role discrepancy issues are associated with greater likelihood of depression. This risk was found to be mediated by the degree of family dysfunction. In addition, female, more than male, gender role discrepancy was associated with family dysfunction. For youth of either gender, this research indicates that cultural discrepancy can contribute to youth depression (Céspedes and Huey, 2008; Balis and Postolache, 2008).

There are strong cultural traditions that support different gender roles for Latino boys and girls. Girls were found to perceive significantly more divergence from parents than do boys, and to suffer more family and mental health consequences than boys (Céspedes and Huey, 2008). Girls tend to acculturate to the new culture at a rate much faster than that of their mothers. (Sanchez, 2013)

Marianismo is a term used to describe gender ideals for females – rooted in traditional Latino society and Catholicism and associated with the Virgin Mary – that calls upon women to exhibit self-denial and patience, particularly with the males in her life. It suggests women should remain true to tradition, adhere to a higher moral standard, prioritize the needs of others and make sacrifices, be strong, and not ask for help or discuss problems outside the household (Jezzini, et al, 2008; Vasquez and Gil, 2014; Cofresi, 2002).

Machismo is a term for male gender ideals that encompasses strength, courage, respect, dignity, honor (especially with regard to the family, e.g. honoring your mother), and the responsibility to provide for and protect the family. The term also has negative connotations associated with dominance and sexuality (Encyclopedia of Immigrant Health, 2012).

Documentation status

Hispanic adolescents who are undocumented are at increased risk of depression and anxiety compared to their documented peers. These risks extend to documented family members whose siblings or parents lack documentation, i.e. children in families with mixed status (Potochnick and Perreira, 2010).

Fear

Fear can stem from many sources, such as fear related to documentation status, fear of police, fear for personal safety or the safety of loved ones, fear of disappointing parents and family, and fear stemming from past experiences of violence and traumatic events. The 2013 YRBS found that Hispanics were statistically more likely than Non-Hispanic Whites (based on t-test analysis, $p<0.05$) to report not having gone to school because they felt unsafe at school or on their way to or from school (9.8% compared to 7.9% of Non-Hispanic Blacks and 5.6% of Non-Hispanic Whites). Though fewer Hispanics reported having carried a gun (4.6% compared to 5.3% of Blacks and 6.2% of Whites), they were statistically (based on t-test analysis, $p<0.05$) more likely than Non-Hispanic Whites to have been threatened or injured with a weapon on school property (8.5% compared to 8.4% of Non-Hispanic Blacks and 5.8% of Non-Hispanic Whites). Hispanics were also found to be statistically more likely than White students (based on t-test analysis, $p<0.05$) to have been injured in a physical fight (4.7% compared to 4.4% of Non-Hispanic Blacks and 2.1% of Non-Hispanic Whites), including physical fights on school property. They were more likely than Non-Hispanic Whites (based on t-test analysis, $p<0.05$) to ever have been forced to have sexual intercourse (8.7% compared to 8.4% of Non-Hispanic Blacks and 6.1% of Non-Hispanic Whites). Also, more Hispanics reported having experienced physical dating violence (10.4% compared to 10.3% of Non-Hispanic Blacks and 9.7% of Non-Hispanic Whites) and sexual dating violence (11.5% compared to 8.9% of Non-Hispanic Blacks and 9.8% of Non-Hispanic Whites) (CDC, 2014c). Though these dating figures are not statistically significant, the

pattern of having the highest percentage in so many instances is notable.

Exposure to violence and traumatic events

For first generation Latino youth, aspects of the migration experience can contribute to psychological manifestations of depression, increasing risk of suicide. These youth may experience exposure to violence and trauma prior to migration, in the course of migration, and post-migration. These experiences can also be related to documentation status or discrimination. Other examples of traumatic circumstances include separation from family members and negative impact on social status. The negative impact could be due to events or circumstances that preceded or followed migration (Potochnick and Perreira, 2010).

Shame and stigma

Shame and stigma associated with mental illness or addiction are related to cultural beliefs. Stigma is culture-bound, reflecting learned behaviors and beliefs informed by our culture and influenced by cultural norms (Abdullah and Brown, 2011). In Hispanic culture mental illness can sometimes be considered a weakness and inadequacy that runs counter to the cultural expectation of resiliency. Mental illness and seeking assistance for it interfere with a person's ability to realize the values associated with *marianismo* (women enduring suffering with dignity) and *machismo* (men being strong, providing for and protecting the family) and *personalismo*. The latter refers to the high value associated with having lasting durable, informal interpersonal relationships, whereas the person suffering from mental illness often has difficulties with interpersonal relationships. For Latinos, both internalized self-stigma and public stigma are concerns (Abdullah and Brown, 2011).

Lower utilization of mental health services among Hispanics may also be attributable to the social consequences of seeking services. Research has suggested that Hispanics/Latinos are reluctant to seek services because of fear of deportation, distrust of service providers, and fear of law enforcement (Lewis et al., 2005). Other studies have suggested that individuals fear bringing shame to the family for seeking professional mental health services. Because the family and extended family act as a tight-knit unit, Hispanics view mental health problems as matters that are private and ought not to be shared with others outside the family (NFI, nd).

Perceived discrimination

Perceived discrimination is a risk factor for depression and consequently for suicide, and immigrants are at increased risk (Chou, 2012; Tummula-Narra, Pratyusha, and Claudius, 2013; Seaton, et al, 2008). New immigrants experience greater perception of discrimination than more established immigrants, and this risk can be moderated by social support from family and neighborhood (Chou, 2012). Adolescent Hispanics experience discrimination in the school setting, such as bullying, which puts them at increased risk for depressive symptoms (Tummala-Narra and Claudius, 2013). Acculturation stress linked to an increased sense of isolation and anxiety contribute to greater substance use and aggressive behavior, whereas these risks are mediated by family cohesion in the form of strong emotional bonds and support from family members. Bullying mediates the associations between both risk and protective factors, acculturation stress and depression, and between family cohesion (generally protective) and depression (Forster, et al, 2013).

Role reversal

Role reversal happens when first- or second-generation children take on adult roles, assisting their parents or other family members who are less able to speak English or to navigate the new culture (APA, 2013). Role reversal is a threat to the character of the traditional Latino family, which is a key

protective factor for Hispanics. In the context of acculturation, the child adapts more quickly, learns English more quickly and how to navigate the systems in the new culture. Also called "power inversion," this circumstance often disrupts generational boundaries, confusing family members' roles, and creates stress for the child. In order to address this problem the dominant role of adult family members must be re-established (Garrison, et al, 1999; Frabutt, James M., 2013).

Health disparity in access to mental health services

Along with African-Americans, Hispanic populations have less access to adequate treatment for depression, such as psychotherapy and anti-depressant medication. Furthermore, care disparities exist between Hispanic and other non-Hispanic youth. Even when "in care," Hispanic youth receive fewer therapeutic services and remain in care for longer periods of time than other non-Hispanic youth groups (Acosta, 2008).

A shortage of bilingual, bicultural mental health professionals and lack of culturally competent services result in poor access for Hispanics to mental health services (Sanchez, 2013; Acosta, 2014). Relative to their percent of the total U.S. population, Hispanics make up a small portion of the healthcare workforce with less than 3% of physicians as of 2009, 1% of clinical psychologists as of 2006, 4.3% of social workers as of 2006 and 1.7% of registered nurses as of 2004 (Acosta, 2015). Acosta lists the following reasons for disparities in access to care for Hispanics: lack of insurance coverage, lack of regular source of care, lack of financial resources, legal barriers, structural barriers, the health care financing system, scarcity of providers, linguistic barriers, health literacy, lack of diversity in the health care workforce, and age. He also names three reasons for disparities in quality of health care: problems with patient-provider communication,

provider discrimination, and lack of preventive care (Acosta, 2015).

Hispanics, compared to non-Hispanic Whites, are less likely to use mental health services and are also less likely to be compliant with recommendations received while under care. They are instead more likely to take guidance from informal sources such as their family members. Of adults who reported thoughts about suicide or attempts, Hispanics were much less likely to have sought or received mental health psychiatric services. They were also less likely to have sought or received such services during the year preceding the thoughts or attempts or to have called a crisis line during a suicidal crisis (SPRC, 2014).

Prevention responses

Many efforts are underway to reduce the risk factors and fortify the protective factors for suicide in order to reduce the number of suicide deaths and attempts. The *2012 National Strategy for Suicide Prevention* (HHS, 2012) established a series of goals and objectives under four general approach categories: healthy and empowered individuals, families and communities; clinical and community prevention services; treatment and support services; and surveillance, research, and evaluation.

Healthy People 2020 has likewise established targeted goals and recommendations, and is promoting school-based, evidence-based and SAMHSA certified suicide prevention programs such as Signs of Suicide (SOS). Goals of SOS include helping teenagers to recognize the association between undiagnosed, untreated mental illness and suicide, and empowering teen peers to take actions to help (Belardo, 2013; Healthy People 2020, *Who's Leading the Leading Health Indicators*? 2013).

The Suicide Prevention Resource Center has developed many resources and is promoting evidence-based prevention programs like the *Kognito At-Risk for High School Educators* program, which was featured in the SPRC presentation at the 2014

National Prevention Network conference. SRSC also promotes its companion programs for At-Risk College Students and *Kognito Family of Heroes* for military personnel recently returned from combat zones (SRSC, 2014a). All three of these prevention programs are included on the SAMHSA NREPP registry of evidence-based programs. Another resource from the Suicide Prevention Resource Center is intended to help schools recover after a suicide, *After a Suicide Toolkit for Schools* (SPRC, 2011).

Research is producing new insights about the links between suicide and trauma, substance abuse, and mental health. The Defense Department's Center for Excellence has taken steps to address stigma and to provide mental health support treatment for stress and depression. SAMHSA has created resources on a variety of related themes and for a variety of audiences. An online print document, *Suicide Prevention Dialogue with Consumers and Survivors: From Pain to Promise*, explores the needs and recommendations of survivors and family members of victims (SAMHSA, 2011). A second online print resource is *Preventing Suicide*, a toolkit for high schools, which provides extensive information and resources to help high schools plan and implement appropriate protocols and programs (SAMHSA, 2012). Another is a Youtube production, "*Everyone Plays a Role in Suicide Prevention: Turning Strategy into Action.*" (SAMHSA, Youtube, 2013).

SAMHSA has targeted suicide prevention in two of its six main initiatives for 2015-2018. Initiative 1 is to prevent substance abuse and mental illness. While promoting wellness by focusing on the links between substance abuse and mental illness, part 1.1 of Goal 1 will promote the protective factors of emotional health and wellness. Part 1.3 of Goal 1 explicitly aims to reduce attempted suicides in high risk groups such as young adults and middle age men. SAMHSA proposes use of integrated approaches, braiding funding from substance abuse and mental health sources; targeting at-risk youth and adults, promoting a zero suicide goal

(recognizing that in follow-ups on suicide attempts a substance is usually found in the person's system); and increasing public awareness and knowledge (Fran Harding, 2014).

Conclusion

In summary, protective factors that are particularly salient for Hispanic female adolescents include strong family bonds; having a strong, functional, cohesive and supportive family; the collectivistic culture which emphasizes solidarity within the community group; and having a supportive teacher (school environment). Depression and related mood disorders and substance abuse are significant risk factors across all adolescent and adult populations. Risk factors that are particularly salient for Hispanic female adolescents include depression, substance abuse, and gender role discrepancy when associated with family dysfunction. Acculturation-stress-related risk factors include gender discrepancy, documentation status, exposure to violence and traumatic events during or after migration, role reversal, and depression. Risk factors related to Hispanic culture include gender role discrepancy and shame and stigma. Other risk factors associated with living in the U.S. include discrimination and bullying, and health disparities in access to mental health and/or substance abuse services.

Clearly, there is much work to be done to assist adolescents, and particularly Hispanic female girls, to enhance their protective factors and reduce risk factors for suicide. For Hispanics, it may be useful to collect data on the number of years of residence in the U.S., language spoken at home, country of origin, documentation status, and circumstances of migration. These data would be extremely helpful to prevention and treatment professionals for assessment and identification of appropriate strategies for addressing and ameliorating risk factors association with suicide, as well as enhancing protective factors.

References

Abdullah, Tahirah and Tamara L. Brown. (2011). Mental Illness Stigma and Ethnocultural Beliefs, Values, and Norms: An Integrative Review, *Clinical Psychology Review* 31/1 (Aug):934-948. Retrieved from http://www.sciencedirect.com/science/article/pii/S0272735811000985

Acosta, Henry. (2008). *Do's and Don'ts When Working with Hispanics in Mental Health*. NRCHMH. Retrieved from http://www.nrchmh.org/attachments/DoAndDont.pdf

Acosta, Henry. (2014). *Improving Behavioral Health Service Delivery to Latinos*. Multicultural Health and Behavioral Health Solutions. Retrieved from http://www.magellanofpa.com/media/775049/henry_acosta_march_2014.pdf

American Association of Suicidology (AAS). (2014a). *Suicide in the USA: Based on 2011 Data*. http://www.suicidology.org/Portals/14/docs/Resources/FactSheets/2011/SuicideUSA2014.pdf

American Association of Suicidology (AAS). (2014b). *Suicide in the USA Fact Sheet Based on 2012 Data*. Retrieved from http://www.suicidology.org/Portals/14/docs/Resources/FactSheets/USA2012.pdf

APA Presidential Task Force on Immigration. (2013). *Working with Immigrant-Origin Clients: An Update for Mental Health Professionals*. American Psychological Association (APA). Retrieved from http://www.apa.org/topics/immigration/immigration-report-professionals.pdf

Aseltine, RH Jr., EA Schilling, A. James, JL Glanovsky, and D. Jacobs. (2009). Age Variability in the Association between Heavy Episodic Drinking and Adolescent Suicide Attempts: Findings from a Large-Scale, School-Based Screening Program. *Journal of the American Academy of Child & Adolescent Psychiatry*. 48/3:262-70. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/19182691/

Balis, Theodora and Teodor T. Postoloche (2008). Ethnic Differences in Adolescent Suicide in the U.S. *International Journal of Child Health and Human Development* 1/1 (Jan):281-296. Retrieved from

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2845977/ Accessed 8/2/15.

Belardo, Jose, CAPT Region VII. [2013]. *Signs of Suicide: Results Promising School-Based Suicide Prevention Program*. Part of a Healthy People 2020: Who's Leading the Leading Health Indicators? Webinar. Retrieved from http://www.healthypeople.gov/2020/learn/LHIMH042612.pdf

Burns, Robert (2013). "2012 Military Suicides Hit Record High," *ArmyTimes*, Jan 14. Retrieved from http://www.armytimes.com/article/20130114/NEWS/301140310/2012-military-suicides-hit-record-high-349

Cash, Scottye J., and Jeffrey A. Bridge. (2009) Epidemiology of Youth Suicide and Suicidal Behavior, *Current Opinion Pediatrics* 21/5 (Oct):613-619. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2885157/

Centers for the Application of Prevention Technologies (CAPT). (2009). *Risk and Protective Factors Shared by Substance Abuse and Mental Health: Preliminary Findings.* Retrieved from http://captus.samhsa.gov/access-resources/risk-and-protective-factors-shared-substance-abuse-and-mental-health-preliminary-fi

Centers for Disease Control and Prevention. (2010). Current Depression Among Adults – United States, 2006 and 2008. *Morbidity and Mortality Weekly Report*, 59/38:1229-1235. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5938a2.htm

Centers for Disease Control and Prevention. (2010). Youth risk behavior surveillance - United States, 2009. *Morbidity and Mortality Weekly Report*, 59/SS-5. Retrieved from http://www.cdc.gov/mmwr/pdf/ss/ss5905.pdf

Centers for Disease Control and Prevention. (2010). *Understanding Suicide Fact Sheet 2010*. Retrieved from http://www.drugs.indiana.edu/repository/Suicide-FactSheet-a.pdf

Centers for Disease Control and Prevention. (2012a). *Sexual Violence.* Retrieved from

http://www.cdc.gov/violenceprevention/pdf/sv-datasheet-a.pdf

Centers for Disease Control and Prevention. (2012b). *Suicide: Facts at a Glance.* Retrieved from http://www.cdc.gov/violenceprevention/pdf/suicide-datasheet-a.pdf

Centers for Disease Control and Prevention. (2012c). Youth risk behavior surveillance - United States, 2011. *Morbidity and Mortality Weekly Report*, 61/SS-4 (June). Retrieved from http://www.cdc.gov/mmwr/pdf/ss/ss6104.pdf

Centers for Disease Control and Prevention. (2013a). *FastFacts: Suicide and Self-Injury.* (Deaths: Final Data for 2013, table 18) Retrieved from http://www.cdc.gov/nchs/fastats/suicide.htm

Centers for Disease Control and Prevention. (2013b). *Suicide: Risk and Protective Factors*. Retrieved from http://www.cdc.gov/violenceprevention/suicide/riskprotectivefactors.html

Centers for Disease Control and Prevention. (2014a). QuickStats: Age-Adjusted Suicide Rates, by State – United States 2012, *Morbidity and Mortality Weekly Report* 63/45 (Nov 14): 1041-1041. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6345a10.htm

Centers for Disease Control and Prevention. (2014b). Youth risk behavior surveillance - United States, 2013. *Morbidity and Mortality Weekly Report*, 63/SS-4 (June 13, 2014) Retrieved from http://www.cdc.gov/mmwr/pdf/ss/ss6304.pdf?utm_source=rss&utm_medium=rss&utm_campaign=youth-risk-behavior-surveillance-united-states-2013-pdf

Centers for Disease Control and Prevention. (2014c). *YRBSS Results*. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/results.htm.

Centers for Disease Control and Prevention. (2014d). *Lesbian, Gay, Bisexual, and Transgender Health.* Retrieved from http://www.cdc.gov/lgbthealth/

Centers for Disease Control and Prevention. (2015a). *FastStats: Depression.* Retrieved from http://www.cdc.gov/nchs/fastats/depression.htm Accessed 7/26/2015 (p. 8 under section on Hispanics – Depression)

Centers for Disease Control and Prevention. (2015b). *Youth Risk Behavior Survey, 2011*.

Retrieved from http://nccd.cdc.gov/YouthOnline/

Centers for Disease Control and Prevention, National Center for Health Statistics. (2015c). Racial and Gender Disparities in Suicide Among Young Adults Aged 18-24: United States, 2009-2013, Health E-Stats, September. Retrieved from http://www.cdc.gov/nchs/data/hestat/suicide/racial_and_gender_2009_2013.pdf

Centers for Disease Control and Prevention, National Center for Health Statistics. (2015d). "Trends in Drug-poisoning Deaths Involving Opioid Analgesics and Heroin: United States, 1999-2012, Health E-Stats, November. Retrieved from http://www.cdc.gov/nchs/data/hestat/drug_poisoning/drug_poisoning.htm

Céspedes, Yolanda M. and Stanley J Huey, Jr. (2008). Depression in Latino Adolescents. *Cultural Diversity and Ethnic Minority Psychology* 14/2 (Apr):168-172. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2493609/

Chou, K.L. (2012). Perceived discrimination and depression among new migrants to Hong Kong: the moderating role of social support and neighborhood collective efficacy. *Journal of Affective Disorders* 138/1-2 (Apr):63-70. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/22284018

Cierniak, Katie, Julia Heiman, and Jonathan Plucker. (2012). *Sexual Violence Prevention in Indiana: Toward Safer, Healthier Communities.* Center for Evaluation & Education Policy, Indiana University. http://ceep.indiana.edu/projects/PDF/SP_Brief_Sexual_Violence_Prevention_021412.pdf

Cofesi, N.I. (2002). The Influence of Marianismo on Psychoanalytic Work on Latinas: Transference and Countertransference Implications. *The Psychoanalytic Study of the Child*, 57: 435-451.

Dopheide. (2006). Recognizing and Treating Depression in Children and Adolescents, *American Journal of Health-System Pharmacy* (Feb) 63/3:233-243. http://www.ajhp.org/content/63/3/233

Encyclopedia of Immigrant Health. (2012). Loue, Sana and Sajatovic, Martha, eds. Springer Reference. Retrieved from http://www.springer.com/us/book/9781441956552

Faris, Stephanie. (2012). Depression Statistics, *Healthline* (Mar 28). Retrieved from http://www.healthline.com/health/depression/statistics

Frabutt, James M. (2013). Immigrant Youth Mental Health, Acculturation and Adaptation. *Catholic Education: A Journal of Inquiry and Practice* 9/4. http://digitalcommons.lmu.edu/cgi/viewcontent.cgi?article=1329&context=ce

Garrison, Ellen Greenbert, Iliana Roy, and Viviana Azar. (1999). Responding to Mental Health Needs of Latino Children and Families through School-Based Services. *Clinical Psychology Review* 19/2 (Mar): 199-219 http://www.sciencedirect.com/science/article/pii/S0272735898000701

Gassman, R., Jun, M., Samuel, S., Agley, J. D., Lee, J., Boyken, M. K., Boyken, J. R., Halbleib, J. D., Jordan , C. L., Montgomery, J. C., Palmer, A. V., Pardue, S. E., Rudbart, F. J., Smith, J. N., Smith, J. A., Oi, S. E. (2014). *Alcohol, Tobacco, and Other Drug Use by Indiana Children and Adolescents*. Bloomington, IN: Indiana Prevention Resource Center. http://www.drugs.indiana.edu/indiana-youth-survey/indianasurvey

Guiao, IZ and EA Thompson. (2004). Ethnicity and problem behaviors among adolescent females in the United States. *Health Care for Women International* 25/4: 296-310. http://www.ncbi.nlm.nih.gov/pubmed/15199970

Haas, Ann P., et al. (2011). Suicide and Suicide Risk in Lesbian, Gay, Besexual, and Transgender Populations: Review and Recommendations. *Journal of Homosexuality* 58/1 (Jan): 10-51. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3662085/

Harding, Fran, SAMHSA, CSAP. (2014). *Setting the Stage for Prevention's New Opportunities*. Presentation at National Prevention Network 27th Annual Prevention Research Conference, Hartford CT, Sept 2014.

Indiana State Department of Health and the Indiana Family and Social Services Administration, Division of Mental Health and Addiction. [2010]. *Indiana State Suicide Prevention Plan: Journey from Hopelessness to Health*. Indianapolis: ISDH. http://www.in.gov/issp/files/plan.pdf

Indiana Public Media. [2012]. *Shadows of Innocence: Sexual Assaults among Indiana's Youth*. http://indianapublicmedia.org/news/special-features/shadows-of-innocence/video/

Indiana State Department of Health. (2013). *Suicide in Indiana Report 2006-2011*. Indianapolis: Epidemiology Resource Center and Division of Trauma and Injury Prevention. http://www.in.gov/isdh/files/Suicide_Report_2013_final%281%29.pdf

Jezzini, Andreana, Cynthia E. Guzmán, and Lisa Grayshield. (2008). *Examining the Gender Role Concept of Marianismo and its Relation to Acculturation in Mexican-American College Women*. Based on a program presented at the ACA Annual Conference, Honolulu, HI. http://www.counseling.org/docs/default-source/vistas/vistas_2008_jezzini.pdf?sfvrsn=9

Kemp, Janet, and Robert Bossarte. (2012). *Suicide Data Report, 2012*. U.S. Department of Veterans Affairs, Mental Health Services. Retrieved from http://www.va.gov/opa/docs/suicide-data-report-2012-final.pdf

King, R.A., & Jun, M.K. (2013). *Results of the Indiana College Substance Use Survey - 2013*. Bloomington, IN: Indiana Prevention Resource Center, Indiana University. http://www.drugs.indiana.edu/publications/icsus/ICSUS_Survey_2013.pdf

Lewis, M.J., B. West, L. Bautista, A.M. Greenberg and I. Done-Perez. (2005). Perceptions of Service Providers and Community Members on Intimate Partner Violence within a Latino Community. *Health Education Behavior* (Feb): 69-83. http://www.ncbi.nlm.nih.gov/pubmed/15642755 and http://heb.sagepub.com/content/32/1/69.long

Minnesota Nice: A Documentary on Bullying and Suicide in Minnesota. (2013). Youtube. Retrieved from http://www.youtube.com/watch?v=-PwDacqVjQc

National Alliance on Mental Illness (NAMI). (2007). *Teenage Suicide*. Retrieved from http://www2.nami.org/Content/ContentGroups/Helpline1/Teenage_Suicide.htm

National Alliance on Mental Illness (NAMI). (2009a). *Depression and Latinas*. Retrieved from http://www2.nami.org/Template.cfm?Section=Women_and_Depression&Template=/ContentManagement/ContentDisplay.cfm&ContentID=88285

National Alliance on Mental Illness. (NAMI). (2009b). *Latina Women and Depression Fact Sheet.* Retrieved from https://www2.nami.org/Template.cfm?Section=Women_and_Depression&Template=/ContentManagement/ContentDisplay.cfm&ContentID=88887

NKI Center of Excellence in Culturally Competent Mental Health. (nd). Retrieved from http://ssrdqst.rfmh.org/cecc/index.php?q=node/1

Preidt, Robert. (2013). Physical, Sexual Assault May Raise Solders' Suicide Risk. *HealthDay News* (Jan 22). Retrieved from http://www.koaa.com/news/physical-sexual-assault-may-raise-soldiers-suicide-risk/

Rape Abuse & Incest National Network (RAINN). (2009). *Statistics.* Retrieved from https://rainn.org/statistics

Ryan, C.,D. Huebner, and RM Diaz. (2009). Family Rejection As a Predictor of Negative Health Outcomes in White and Latino Lesbian, Gay, and Bisexual Young Adults. *Pediatrics* 123/1 (Jan). Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/19117902

SAMHSA. (2009). Substance Abuse and Suicide Connection: White Paper. *SAMHSA News* 17/1 (Jan/Feb) Retrieved from http://www.samhsa.gov/samhsanewsletter/Volume_17_Number_1/SubstanceAbuseAndSuicide.aspx

SAMHSA. (nd). *Adverse Childhood Experiences.* (Handout from NPN conference, 2012) Retrieved from http://www.drugs.indiana.edu/repository/HO3_ACEs_Final_Jan29.pdf

SAMHSA. (2011). *Suicide Prevention Dialogue with Consumers and Survivors: From Pain to Promise* Retrieved from http://www.drugs.indiana.edu/repository/SMA10-4589.pdf

SAMHSA. (2012). *Preventing Suicide: A Toolkit for High School.* Retrieved from http://www.drugs.indiana.edu/repository/SMA12-4669.pdf

SAMHSA. (2013). *Everyone Plays a Role in Suicide Prevention: Turning Strategy Into Action.* Youtube. Retrieved from http://www.youtube.com/watch?v=tXMFexq43OM&list=UUAkmVsd_pi2eLlfaPJ0iSCA

SAMSHA. (2013). Resilience Annotated Bibliography, SAMHSA's Partners for Recovery Initiative. Retrieved from http://www.samhsa.gov/sites/default/files/resiliency-annotated-bibliography.pdf

SAMHSA. (2014). *Leading Change 2.0: Advancing the Behavioral Health of the Nation, 2015-2018.* HHS Publication No. (PEP) 14-LEADCHANGE2. Rockville, MD: SAMHSA. Retrieved from http://store.samhsa.gov/shin/content//PEP14-LEADCHANGE2/PEP14-LEADCHANGE2.pdf

SAMHSA. (2014). *NREPP: SAMHSA's National Registry of Evidence-Based Programs and Practices.* Retrieved from http://nrepp.samhsa.gov

Sanchez, Erika L. (2013). Suicides Highlight Plight of Hispanic Teens: High depression rates focus attention on problems faced by girls in the US Latino community. *Al Jezeera News* (Jul 21) http://www.aljazeera.com/indepth/features/2013/07/20137217262714490.html

Seitz de Martinez, Barbara. (2014a). *Celebrating Hispanic Heritage Month, Part 1: Getting to Know You* ... Bloomington: Indiana Prevention Resource Center, Indiana University, School of Public Health Bloomington. (Oct 13). Retrieved from http://www.drugs.indiana.edu/drug-info/featured-articles/254-celebrating-hispanic-heritage-month-part-1-getting-to-know-you

Seitz de Martinez, Barbara. (2014b). *Celebrating Hispanic Heritage Month, Part 2: Acculturation and Associated Risk and Protective Factors* (Nov 9). Bloomington: Indiana Prevention Resource Center, Indiana University, School of Public Health Bloomington. Retrieved from http://www.drugs.indiana.edu/drug-info/featured-articles/257-celebrating-hispanic-heritage-month-part-2-acculturation-and-associated-risk-and-protective-factors

Seitz de Martinez, Barbara. (2014c). *Suicide, A National and Local Problem* (Nov 21). Bloomington: Indiana Prevention Resource Center, Indiana University, School of Public Health Bloomington. Retrieved from http://www.drugs.indiana.edu/drug-info/featured-articles/255-suicide-a-national-and-local-problem

Shilling, EA, RH Aseltine Jr, JL Glanovsky, A. James, and D Jacobs. Adolescent Alcohol Use, Suicidal Ideation, and Suicide Attempts. *Journal of Adolescent Health* 44/4 (Apr):335-41. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/19306791/

Seaton, Eleanor, and Cleopatra Caldwell, Robert Sellers, and James Jackson. (2009). The Prevalence of Perceived Discrimination among African American and Caribbean Black Youth. *Developmental Psychology* 44/5 (Sept):1288-1297. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2556985/

Stout, Ellyson, Suicide Prevention Resource Center. (2014). *Substance Abuse Prevention IS Suicide Prevention.* National Prevention Network Annual Conference, Hartford CT, Sept.

Suicide Prevention Resource Center. (2011). *After a Suicide: A Toolkit for Schools.* Retrieved from http://www.sprc.org/library/AfteraSuicideToolkitforSchools.pdf

Suicide Prevention Resource Center. (2014a). *Best Practices Registry.* Retrieved from http://www.sprc.org/bpr/section-i-evidence-based-programs

Suicide Prevention Resource Center. (2014b). *Suicide Prevention Basics.* Education Development Center. Retrieved from http://www.sprc.org/basics/risk-and-protective-factors.

Tummala-Narra, Pratyusha, and Milena Claudius. (2013). Perceived Discrimination and Depressive Symptoms Among Immigrant-Origin Adolescents. *Cultural Diversity and Ethnic Minority Psychology* 1/3:257–269. Retrieved from http://www.apa.org/pubs/journals/releases/cdp-19-3-257.pdf

US Department of Defense. Defense Centers of Excellence for Psychological Health & Traumatic Brain Injury. (2013). *Suicide.* Retrieved from http://www.afterdeployment.org/sites/default/files/pdfs/library/eLibrary_suicide.pdf

U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. (2012). *2012 National Strategy for Suicide Prevention: Goals and Objectives for Action.* Washington, DC: HHS, September. http://www.drugs.indiana.edu/repository/national-strategy-suicide-prevention/full-report.pdf

Vaughan, Ellen L., Ruth Gassman, Mikyoung Jun, and Barbara Seitz de Martinez. (2015). Gender Differences in Risk and Protective Factors for Alcohol Use and Risk for Substance Use Problems among Hispanic Adolescents. *Journal of Child Adolescent Substance Abuse* 24: 243-254 Retrieved from http://www.tandfonline.com/doi/abs/10.1080/1067828X.2013.826609#preview

Vasquez, C. I., and Rosa Maria Gil. (2014). The Maria paradox: How Latinas Can Merge Old World Traditions with New World Self Esteem. Open Road Media. e-book. (Originally published by Gil & Vasquez, 1996, by GP Putnam's Sons)

White House, Office of National Drug Control Policy. (2013). Substance Abuse Prevention Is Suicide Prevention. https://www.whitehouse.gov/blog/2013/09/10/substance-abuse-prevention-suicide-prevention

Wong, Shane Shucheng, and Bo Zhore, Deborah Goebert, and Earl S. Hishinuma. (2013). The Risk of Adolescent Suicide across Patterns of Drug Use: a nationally representative study of high school students in the United States from 1999 to 2009. *Social Psychiatry and Psychiatric Epidemiology* 48/10 (June). Retrieved from http://link.springer.com/article/10.1007%2Fs00127-013-0721-z

Zarrett, Nicole, and Jacquelynne Eccles. (2006). Preparing Youth for the Crossing. *New Directions for Youth Development*, No. 111 Wiley Periodicals, Inc. Published online in Wiley InterScience (www.interscience.wiley.com (DOI: 10:1002/yd.179. Retrieved from http://deepblue.lib.umich.edu/bitstream/handle/2027.42/49326/179_ftp.pdf

Zayas, Luis H, and Lisa R. Fortuna, Rebecca J. Lester, and Leopoldo J. Cabassa. (2005). Why Do So Many Latino Teens Attempt Suicide? A Conceptual Model for Research. *American Journal of Orthopsychiatry* 75/2: 272-287. http://cathexa.com/uploads/Latina_Suicide.pdf

Contact the author

Barbara Seitz de Martinez, PhD
Deputy Director/Head Librarian
Indiana Prevention Resource Center (IPRC)
504 N. Morton St, Room 110
Bloomington, IN 47408
seitzb@indiana.edu

Systematic searching: Overview and guidance for searching addiction-related topics

Karen Heskett

Instruction Librarian; Liaison Librarian to School of Medicine & Global Public Health
University of California, San Diego

Sheila Lacroix

Library Coordinator, CAMH Library
Centre for Addiction and Mental Health

This paper describes the systematic review process, laying the groundwork by providing the essentials for conducting a review. This includes the types of reviews, the sorts of well-formed questions used to start a search, and the process of determining the sources to be searched, in particular those essential to health research. Sources for guides and checklists are provided and the importance of employing best practices in searching and being accountable is emphasized. The core databases for searching ATOD (Alcohol Tobacco and other Drugs) topics include Medline / PubMed and PsycINFO. As these databases are indexed according to different controlled vocabulary terms and have unique features, strengths and limitations, as this article demonstrates, it is essential to develop different search strategies for each database, as well as other databases that are included in the review

Keywords

Literature reviews; Systematic reviews; Literature searching; Alcohol literature; Drug literature; Addiction literature

This paper is based on presentations by the authors on systematic searching at the SALIS 2015 conference. Karen Heskett opened with an overview on systematic searching and Sheila Lacroix focused on good practice in searching topics relating to alcohol, tobacco and other drugs (ATOD). Librarians are increasingly called to play a role in systematic reviews. In fact, some grants for funding systematic reviews now include a requirement that a librarian conduct the literature searches. Overall, there has been an increase in expectations for accountability and rigor in research, publishing, and support for program funding. While not all librarians and information professionals are called to be involved in large complex searches, it is important to strive to employ best practices; to be consistent, accountable, and transparent; and to clearly convey search results. This includes documenting the process to ensure

transparency and reproducibility. It is also essential to keep abreast of important trends and improve competencies in evaluating literature and supporting patrons' research needs. In addition to providing a brief overview on systematic searching, this paper will also provide guidelines for searching ATOD-related topics.

Overview and Laying the Groundwork

The systematic review process sets standards for reviewing the literature. The first step is a well-conducted and thorough search. This is where the librarian's expertise is required. However, knowing the process can be helpful for any search a librarian might perform. Systematic reviews are one type of review found in the literature. The three main types of reviews are:

- Narrative Review: Leads to an expert-prepared overview; may not be comprehensive; used to identify gaps in the literature.
- Scoping Review: Preliminary to the systematic review; often used to determine the quantity of research available; may lead to revising the topic.
- Systematic Review: Clearly planned; searches are fully described; methodological decisions are explained (Boland, Cherry, & Dickson, 2013).

Systematic reviews in health care cover a variety of article types including drug effectiveness reviews, rapid reviews, and technology assessments. Each has its own distinct advantage and particular sort of question to which it can respond. All employ systematic searching as a foundation.

There are obvious challenges in conducting these types of reviews, such as limits to the resources available, difficulty securing access to the various databases, and time constraints. Dealing with large search sets can also present saving and exporting challenges. Sometimes it is necessary to discuss the balance of relevant to irrelevant results with the patron and negotiate changes in the search strategy. It is never possible to

ensure that 100% of studies in a given field have been captured. In some cases, patrons will have two librarians from different institutions conduct their searches to ensure better coverage. Sometimes a peer review of the search strategy (PRESS) is helpful or required (Sampson, McGowan, Lefebvre, Moher, & Grimshaw, 2008). It is the patron or researcher who usually takes on the next steps: filtering the results with established inclusion and exclusion criteria and then analyzing and reporting on the evidence synthesized from the research that meets the criteria.

The Search Strategy

The search strategy describes the methods used to identify the evidence as well as the details of the actual search to retrieve both the published and unpublished relevant literature specific to the topic (Boland et al., 2013). It includes not only how but where the search was conducted. Fortunately, there are standards for conducting reviews such as the well-known Cochrane Collaboration protocols and checklists such as PRISMA (please see the additional resources in the References section). The databases to be searched must be determined, which at a minimum should include Medline/PubMed, Embase, and CINAHL for medical and health topics and PsycINFO as well for ATOD topics. While some overlap exists, each database will contribute unique articles.
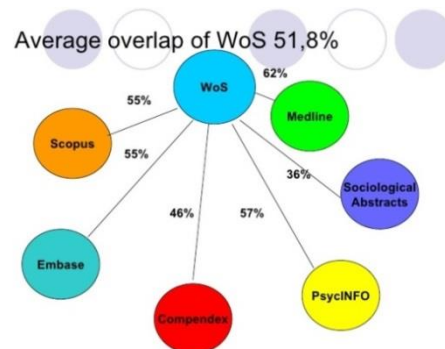
Fig 1. Average overlap of Web of Science (Iselid, 2006)

Sheila Lacroix

A search on the topic 'injury prevention and safety promotion' (IPSP) was used to demonstrate how essential it is to search more than one database, in particular for cross-disciplinary topics. A search of only one database on this topic retrieved 16.7 to 81.5% (median 43.4%) of articles on five key IPSP topics (Lawrence, 2008). When planning the actual database searches, specific features of the databases must be taken into consideration, such as controlled vocabulary, unique searchable fields, and important limitations; other strategies, such as hand searching and searching grey literature sources, and possibly search engines such as Google Scholar, should also be considered. Grey literature can be useful in counteracting the positive results bias that is found in the published scientific literature (Institute of Medicine, 2011).

One of the most important first steps is defining the research questions. This can be challenging for public health and ATOD searches because sometimes there is not an obvious population or a clear-cut intervention. As a rule of thumb, the PICO or PICOT(S) method is used: Patient, Population, Problem; Intervention; Comparison; Outcome(s); Time or Time Frame; and, sometimes, Study Types. Once this is established, one can start building the search terms for the various databases into the PICO structure. PICO is a helpful tool for any type of searching.

Searching ATOD topics: Good Practice

First and foremost, it must be emphasized that many ATOD topics require searching the literature from different disciplines: medicine, allied health, public health, psychology, sociology, and even law. This is why, if available, multidisciplinary databases like Scopus and Web of Science can be very useful in casting a wider net. The downside of Web of Science and Scopus is that there is no controlled vocabulary for indexing, a challenge considering the multiple ways ATOD issues are expressed. Medline /

PubMed, herein referred to as Medline, and PsycINFO are the core databases for ATOD searches.

The focus for this section of the paper is an in-depth look into these two databases which originate from different disciplines and have evolved very differently. For Medline and PsycINFO, strengths, weaknesses and significant differences will be highlighted. Unfortunately, many patrons, in particular in medical institutions, tend to narrow in on Medline and Embase and do not recognize the value of searching PsycINFO. CINAHL is also frequently ignored by physicians and medical students.

The CAMH Library online guide, Literature Searching: Good Practice: an introductory guide for effectively and comprehensively searching for research-based literature on addiction, mental health and related issues (CAMH Library, n.d.) is a good starting point for the basics of planning and conducting a search. It also provides lists of key ATOD and mental health subject headings used in indexing Medline and PsycINFO.

One significant difference between Medline and PsycINFO are the subject headings as reflected both by the terminology and the hierarchical structures within the thesauri. For example, the thesaurus of the American Psychological Association (APA), used to index PsycINFO, places 'substance abuse' within the behavioral disorders tree, whereas in the National Library of Medicine's (NLM) MeSH (Medical Subject Headings), which is used to index Medline, 'substance abuse' is classified under the 'mental disorders'. APA uses headings such as addiction, drug addiction, heroin addiction, drug abuse, and alcohol abuse. MeSH terms are very different, including the broad category of substance-related disorders and narrower terms such as alcohol-related disorders, opioid-related disorders, and cocaine related disorders. APA and NLM introduced the subject heading 'binge drinking' as a narrower term under alcohol-related disorders (Medline) and alcohol abuse (PsycINFO) in 2013 and 2006

respectively. APA has seemed particularly in tune with the growing awareness of the need for a term to capture the concept of 'binge drinking', which can be expressed in many ways, to describe this type of consumption. Medline has subheadings which are very effective in honing in on specific issues. For example, in the substance-related disorders tree, subheadings such as 'rehabilitation', 'prevention and control', or 'nursing' can be used. In fact, more than one subheading can be applied at once. PsycINFO has the terms 'drug rehabilitation' and 'alcohol rehabilitation' to assist in searching for this concept. The above examples demonstrate how the controlled vocabulary used to index databases will impact the search strategy for Medline versus PsycINFO, as well as other databases that might be searched.

Two sample searches may help underscore the importance of searching both PsycINFO and Medline for historical coverage. A search for publications from 1950 to 1970 by Marie Nyswander, who researched treatments for opioid abusers, retrieved 17 articles, without abstracts, from Medline and 5 articles and 1 book from PsycINFO, with abstracts. The lack of abstracts provided by Medline in earlier decades limits the effectiveness of key word / key phrase searching, particularly an issue because there were fewer MeSH headings assigned in earlier decades than are usually applied today. PsycINFO provides better coverage for the *Quarterly Journal of Studies on Alcohol*. Between 1950 and 1959, Medline indexed 97 records and PsycINFO 285.

Journal coverage varies between Medline and PsycINFO. Two popular journals, *Contemporary Drug Problems* and the *Irish Journal of Psychological Medicine* have better coverage with PsycINFO. Both now index the *Harm Reduction Journal*, although NLM was slow to pick this up, only beginning to provide regular indexing in 2012. A search conducted on the relationship between cannabis use and psychosis (2012 publications, journal articles, English only) found an overlap of 40 articles, yet unique publications in both Medline and PsycINFO.
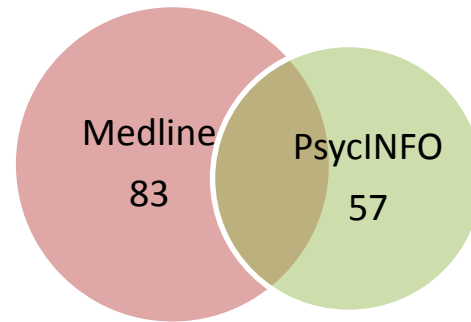
Fig 2. Cannabis & Psychosis

Finally, key journals such as *Addiction* are indexed more slowly in Medline than PsycINFO. The records may be added to the database, but cannot be searched using MeSH, only by key words / key phrases. To search for unindexed literature through Ovid Medline, one must search In Process Medline.

In summary, the above discussion provides arguments for the importance of searching both Medline and PsycINFO for ATOD topics. Both have their strengths. For Medline, strengths include in-depth indexing with MeSH, applying more subject headings than PsycINFO; subheadings for fine-tuning the search strategy; trusted 'limits' provided for randomized controlled trials (RCTs) and meta analyses; and the indexing of Cochrane Reviews. For PsycINFO, strengths include the availability of books, book chapters and dissertations; a searchable Tests and Measures field; in-depth indexing of behavioral therapies; and helpful Classification Codes, such as Forensic Psychology & Legal Issues, which can be searched by their numeric codes.

Conclusion

This article demonstrates the importance of systematic searching, whether for a systematic review or a routine patron request for a literature review. A standard process which is documented and transparent should be followed. This involves determining the best databases and other sources to search, depending on the topic, and translating the

research question using PICO or PICOT(s), the framework for organizing the search concepts and search terms. For comprehensive reviews, it is necessary to search a variety of databases and include grey literature sources. Each database should be searched separately, taking advantage of their unique features and subject headings. Often key words and phrases must also be used to ensure topic coverage and to search for literature published before the introduction and application of specific subject headings. Terminology can be complex, discipline-specific, and affected by politics, geography, and standards. For ATOD searches, Medline and PsycINFO are essential. Some other structured databases recommended, depending on the topic, are Embase, CINAHL, Sociological Abstracts, Gender Studies, Social Work Abstracts, and ERIC. The multidisciplinary databases Scopus and Web of Science should also be considered, particularly to ensure currency. One should also consider special library catalogues and specialized databases such as Guidelines.gov and ClinicalTrials.gov. SALIS provides a list with links (where available) on its website entitled *Alcohol, Tobacco, and Other Drugs Bibliographic Databases and Data Archives*.

References

Conte, M. L., MacEachern, M. P., Mani, N. S., Townsend, W. A., Smith, J. E., Masters, C., & Kelley, C. (2015). Flipping the classroom to teach systematic reviews: The development of a continuing education course for librarians. *Journal of the Medical Library Association,* 103(2), 69–73. doi: [10.3163/1536-5050.103.2.002](#)

Boland, A., Cherry, G., & Dickson, R. (2013). *Doing a systematic review: A student's guide.* London: SAGE Publications.

Institute of Medicine. (2011). *Finding what works in health care: Standards for systematic reviews*. Retrieved from http://www.iom.edu/srstandards

Lawrence, D.W. (2008). What is lost when searching only one literature database for articles relevant to injury prevention and safety promotion. *Injury Prevention*, 14(6), 401-404. doi:10.1136/ip.2008.019430

Sampson, M., McGowan, J., Lefebvre, C., Moher, D., & Grimshaw J. (2008). PRESS: Peer review of electronic search strategies. Ottawa: Canadian Agency for Drugs and Technologies in Health. Retrieved from https://www.cadth.ca/media/pdf/477_PRESS-Peer-Review-Electronic-Search-Strategies_tr_e.pdf

Additional Web Resources

CAMH Library. Literature Searching: Good Practice: an introductory guide for effectively and comprehensively searching for research-based literature on addiction, mental health and related issues. Retrieved from http://guides.hsict.library.utoronto.ca/CAMH/LiteratureSearching_GoodPractice

SALIS. *Alcohol, Tobacco, and Other Drugs Bibliographic Databases and Data Archives*. Retrieved from http://salis.org/resources/database_list.html

Systematic Reviews: Standards and Checklists

Cochrane Collaboration: http://community.cochrane.org/. Multiple resources and publications. The most recent (2011) *Cochrane Handbook* is available, http://handbook.cochrane.org/

The Campbell Collaboration: http://www.campbellcollaboration.org/. See the Resource Centre. Centre for Reviews and Dissemination, University of York, U.K.

Systematic Reviews guidance: https://www.york.ac.uk/media/crd/Systematic_Reviews.pdf

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta Analyses. Retrieved from http://prisma-statement.org/documents/PRISMA%202009%20checklist.pdf

Contact the authors

Karen Heskett, MSI
University of California, San Diego Library
9500 Gilman Dr. 0699
La Jolla, CA 92093-0699
858 534-1235
kheskett@ucsd.edu

Sheila Lacroix, BSc, MLS
Library Coordinator
CAMH Library
33 Russell Street
Toronto, ON Canada M5S 2S1
416 535-8501 x36982
sheila.lacroix@camh.ca

Systematic searching: Reporting the search

Karen Palmer

Records and Information Specialist
Canadian Centre on Substance Abuse

This presentation highlighted the findings from a review of how search strategies and results are documented and reported in the published literature. By investigating a sample of systematic reviews, single studies, Cochrane reviews, and grey literature reports from the tobacco, alcohol and substance use literature, the presenter reviewed how search strategies and results are reported in narrative form (such as in the methodology section of a report), how the detailed search strategy is reported (such as in an appendix to the report), and standards and best practices for reporting the search strategy. It was expected that the audience would gain an increased understanding of the different methods and ways of documenting and reporting search strategies, learn about the importance of standardization for reporting search strategies and discover tools and resources for learning more about documenting the search strategy and methodology.

Keywords

Literature search; Systematic reviews; Standards; Best practices

After providing a brief introduction to the Canadian Centre on Substance Abuse (CCSA) and acknowledging fellow colleague Chad Dubeau who was not present, an overview of the objectives for the session was given. The objectives were modified slightly from those submitted in the original abstract for the presentation and are as follows:

- To understand why it is important to document the literature search.
- To learn about standards for documenting the search.
- To see examples of how the literature search is reported in published studies.

Key aspects of the search function were then highlighted. A literature search that is

conducted for a systematic review or other review articles should be: comprehensive, organized, relevant, and replicable. It is undertaken in support of the research function – which, in turn, may guide or inform program, practice, policy, and decision-making. Results of a literature search may help to identify gaps in the literature, provide justification for further research, and support evidence-based practices. Standardized documentation should be in place for reporting purposes. It is important to remember that the quality of the search affects the validity of the findings. It is critical that relevant literature be identified in a methodical, orderly, and organized manner. As mentioned by Sheila Lacroix in her presentation, librarians play a key role with their expertise in identifying which database to use for a particular search and in understanding the differences in search functionality for each database. Librarians have knowledge of methods for developing and refining a search (e.g., they know when to use automated *vs.* manual searching; they know how/when to apply index terms, keywords, and phrase searching).

Reporting on the search in the published article is important for a number of reasons, which include (but are not limited to): helping to support transparency and validity of research findings; providing clarity as to how the search was conducted (especially for more complex searches), allowing for replication; allowing for consistency if a publication is updated; identifying gaps or limitations (which may be used to support research funding proposals); allowing for evaluation of the quality of the search; serving as a starting point for other searches; and offering a learning tool for librarians.

Guidelines

During the search for this paper, several guidelines of interest to librarians and information professionals were discovered. Key among them are the PRISMA and PRISMA-P guidelines and checklists which have been developed specifically for authors

of systematic review articles. Although developed specifically for systematic reviews, both sets of guidelines contain items that address the literature search and could be used as a standard for all literature searches whether or not they are conducted for systematic reviews.

The PRISMA checklist (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) includes 27 items organized around seven sections that provide a brief description of how they are to be captured in a review article. The guidelines provide more detailed descriptions for each section. Of specific interest to those involved in conducting the literature search are items *7. Information sources* and *8. Search* (both in the 'Methods' section of the checklist).

The PRISMA-P checklist guides authors preparing a protocol for a planned systematic review. It is important for the librarian or information professional conducting the search to be involved during this phase of a systematic review. This checklist contains 17 items which are based on the PRISMA. Items *9. Information sources* and *10. Search strategy* are of specific relevance and require identification of information sources (databases) used, along with dates of coverage and a draft search strategy for at least one of the information sources.

In addition, the PRESS checklist and guidelines, developed by librarians at the Canadian Agency for Drugs and Technology in Health (CADTH), is an open access tool that can be copied and used for non-commercial purposes (with attribution). There are 10 items on the checklist along with a set of guidelines that have been developed for using the checklist. A key benefit of peer reviewing a search strategy is to help ensure that a high quality search of information sources has been conducted. As part of the reporting, it may be a requirement to indicate whether or not a peer review of the search strategy was completed.

Acronym	Description	Source	Hyperlink
PICO	Population – Intervention (or Exposure) – Comparison – Outcomes – method for developing an efficient search strategy – for quantitative research questions in the healthcare field.	Health Evidence and Peel Health	PICO Search Terms Table http://www.healthevidence.org/practice-tools.aspx#PT2
PRESS	Peer Review of Electronic Search Strategies – evidence-based scale for peer review of electronic search strategies.	Canadian Agency for Drugs and Technologies in Health (CADTH)	Report https://www.cadth.ca/sites/default/files/pdf/477_PRESS-Peer-Review-Electronic-Search-Strategies_tr_e.pdf
PRESS EBC	Peer Review of Electronic Search Strategies Evidence Based Checklist - identifies elements to aid in the assessment of electronic database search strategies; recommended for use by librarians undertaking the peer review of search strategies.	Canadian Agency for Drugs and Technologies in Health (CADTH)	Checklist https://www.cadth.ca/sites/default/files/is/Peer_review/CADTH%20Peer%20Review%20Checklist%20for%20Search%20Strategies_e.pdf
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta Analyses – to help authors improve the reporting of systematic reviews and meta-analyses and critical appraisal of published systematic reviews; there is a checklist of 27 items.	PRISMA: Transparent reporting of systematic reviews and meta-analyses	Statement http://www.plosmedicine.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pmed.1000097&representation=PDF Explanation and elaboration http://www.plosmedicine.org/article/fetchObject.action?uri=info:doi/10.1371/journal.pmed.1000100&representation=PDF Checklist http://prisma-statement.org/documents/PRISMA%202009%20checklist.pdf
PRISMA-P	Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocol - guides authors preparing a protocol for a planned systematic review; this is a requirement to register the protocol in the PROSPERO database; includes checklist of 17 items based on the PRISMA.	PRISMA-P Group	Statement http://www.systematicreviewsjournal.com/content/pdf/2046-4053-4-1.pdf Elaboration and explanation http://www.bmj.com/content/bmj/349/bmj.g7647.full.pdf Checklist http://prisma-statement.org/documents/PRISMA-P-checklist.pdf
PROSPERO	International Prospective Register of Systematic Reviews - database of prospectively registered systematic reviews in health and social care	University of York, Centre for Reviews and Dissemination	Database home page http://www.crd.york.ac.uk/prospero/prospero.asp
QUOROM	Quality of Reporting of Meta-analyses – predecessor to the PRISMA guidelines	QUORUM Group	Statement (abstract only) http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(99)04149-5.pdf

Table 1. List of acronyms

What to document

Based on the 18 review articles identified, the components of a search have been placed into the six categories described below. Not all published reviews include each component. Cochrane review articles and Campbell Collaboration review articles tended to have the most comprehensive reporting on the literature search. Each of the six components are described below.

Summary/abstract

This section comprises a very general summary statement about the literature search. An example is a list of databases used to conduct the search, or a general overview of the search methods that were employed. Sometimes, very general search criteria are mentioned.

Methods

The methods section in a published review provides more specific details as to how the search was undertaken including, in narrative form, details about the sources used and the search strategy, how the search strategy was developed, and a general overview of search terms used and how they were adjusted according to each database. The names of the databases used were listed, as well as where the search results were stored (i.e., what software application was used). Often, a reference to an appendix with the detailed search strategy would be referenced. Sometimes, you will see a chart or table of the search strategies or search terms used in this section rather than an appendix.

Also in this section, the search methods that were employed to identify studies are described. Examples include electronic database searching, Internet searching for grey literature, and manual searching (of references, conference proceedings/abstracts or individual journals). The scope of the search outside of electronic databases may include personal communication with experts, authors, other investigators, or organizations – sometimes to identify unpublished or ongoing studies. A list of the web sites searched may also be reported here.

Results

This section indicates the total number of studies identified according to the source. A flow diagram of the search screening process may also be included here. Of interest for the librarian or information professional conducting the search is to review the flow diagram that would indicate the number of studies excluded from a particular set of results, which could potentially be helpful for conducting follow-up or related searches or for other purposes.

Potential biases/limitations related to the search

Although biases and limitations may also be mentioned specifically related to the studies themselves, if there is a specific bias or limitation related to the search (language or date) it would be included here (or in the methods section). Sometimes biases, limitations, gaps, barriers or disclaimers related to the search may also be reported in the Discussion section of an article.

Appendices

An article may or may not include an appendix of the search strategies. The appendix serves to document the detailed search strategy using a flow chart or table according to each searched database, the date searched or date range, and the platform used.

Acknowledgements

Reports on author contributions, name, or position of who conducted the search are mentioned in this section. If a peer review of the search strategy was completed, it may also be mentioned here.

Highlights

The following points were highlighted as key takeaways for librarians and information professionals involved in literature searching:

- It is important to document your search strategy using consistent methods for transparency, replication and reporting purposes. It is also important to determine from the start the reporting requirements of the authors.
- As a standard practice, include a narrative summary of the search strategy along with the search results submitted to the author.

- Use the PRISMA checklist as a guide to help in creating standards for documenting your search.
- Establish consistent recording and reporting practices within your organization and/or team.
- Manage the search results through their life cycle (capture, organize, use, share, dispose). Determine what information you will keep and how long will you keep it for – until the research has been published, or longer?
- Develop standards within your organization (for consistency in documenting and reporting). Continue to learn and improve practice to become an expert searcher.

Works Cited and Further Reading

Campbell, S., & Dorgan, M. (2015). What to do when everyone wants you to collaborate: Managing the demand for library support in systematic review searching. *Journal of the Canadian Health Libraries Association*, *36*(1), 11-19. Retrieved from http://ejournals.library.ualberta.ca/index.php/jchla/article/download/24353/18021

DeLuca, J. B., Mullins, M. M., Lyles, C. M., Crepaz, N., Kay, L., & Thadiparthi, S. (2008). Developing a comprehensive search strategy for evidence based systematic reviews. *Evidence Based Library and Information Practice*, *3*(1), 3-32. Retrieved from https://ejournals.library.ualberta.ca/index.php/EBLIP/article/view/855

Hutton, B., Salanti, G., Chaimani, A., Caldwell, D. M., Schmid, C., Thorlund, K., … & Moher, D. (2014). The quality of reporting methods and results in network meta-analyses: An overview of reviews and suggestions for improvement. *PLOS ONE*, *9*(3). Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3966807/pdf/pone.0092508.pdf

McGowan, J., & Sampson, M. (2005). Systematic reviews need systematic searchers. *Journal of the Medical Library Association*, *93*(1), 74-80. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC545125/pdf/i0025-7338-093-01-0074.pdf

McGowan, J., Sampson, M., & Lefebvre, C. (2010). An evidence-based checklist for the Peer Review of Electronic Search Strategies (PRESS EBC). *Evidence Based Library and Information Practice, 5*(1), 149-154. Retrieved from https://ejournals.library.ualberta.ca/index.php/EBLIP/article/download/7402/6436

Rethlefsen, M. L., Farrell, A. M., Osterhaus Trzasko, L. C., & Brigham, T. J. (2015). Librarian co-authors correlated with higher quality reported search strategies in general internal medicine systematic reviews. *Journal of Clinical Epidemiology*, *68*(6), 617-626.

Rethlefsen, M. L., Murad, M. H., & Livingston, E. H. (2014). Engaging medical librarians to improve the quality of review articles. *Journal of the American Medical Association*, *312*(10), 999-1000. Retrieved from http://www.libraries.rutgers.edu/sites/default/files/smith/pdf/jvp140097.pdf

University of Toronto. (2015). Systematic reviews in the sciences & health sciences: Saving and documenting your search. Retrieved from http://guides.library.utoronto.ca/c.php?g=251026&p=1672783

Yoshii, A., Plaut, D. A., McGraw, K. A., Anderson, M. J., & Wellik, K. E. (2009). Analysis of the reporting of search strategies in Cochrane systematic reviews. *Journal of the Medical Library Association*, *97*(1), 21-29. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2605027/pdf/mlab-97-01-21.pdf

Zhang, L., Sampson, M., & McGowan, J. (2006). Reporting of the role of the expert searcher in Cochrane reviews. *Evidence Based Library and Information Practice*, *1*(4), 3-16. Retrieved from http://ejournals.library.ualberta.ca/index.php/EBLIP/article/download/57/157

Contact the author

Karen Palmer, MLS
Records and Information Specialist
Canadian Centre on Substance Abuse
500-75 Albert St.
Ottawa, Ontario, Canada
K1P 5E7
613-235-4048, ext. 223
kpalmer@ccsa.ca

Language matters: The power of words

Judit H. Ward

Center of Alcohol Studies
Rutgers, The State University of New Jersey

The presentation version of this paper was the first in a series of talks in the panel "Language Matters" at the 2015 conference of the Substance Abuse Librarians and Information Specialists in San Diego California. Born and raised in Hungary, a country plagued with alcoholism, mental illness, and suicide, and with a doctorate in linguistics – a unique combination of background and credentials – the author had the privilege to introduce the topic and set the tone for a panel looking at language matters related to addiction science from many angles.

Keywords

Language, Terminology, Linguistics, Addiction science

There are many urban legends related to language. "Gloomy Sunday," the so-called Hungarian Suicide Song, has gained a reputation for being extremely dangerous for people with depression. Composed by Hungarian pianist and composer [Rezső Seress](#) in 1933, with poet László Jávor adding the lyrics about wanting to commit suicide, this song caused the death of many, including its own composer, Seress. He committed suicide in Budapest in January 1968. Although he survived his first attempt (jumping out of a window), Seress later choked himself to death with a wire in the hospital. Covered by Billie Holiday, Ray Charles, Elvis Costello, Sinead O'Connor, Sarah McLahlan, and Sarah Brightman, the song has become widely known in various subcultures. According to an urban legend, a number of people have committed suicide after listening to this song, regardless of the version or language: Gloomy Sunday - Domingo Triste - Sombre Dimanche – Einsamer Sontag – Bela nedelja - ראשון יום העצוב - грустное воскресенье – Szomorú vasárnap. Various version of the song carry a disclaimer: *If you are depressed or feeling gloomy, you should not listen to this song / watch this video.* An example on YouTube is the recording of composer Rezső Seress singing: https://www.youtube.com/watch?v=8vncAr6BSRE.

Words seem to have a magic power and have been used by writers and laymen as well as in therapy. A recently departed author, Szilárd Borbély (1963-2014), was one of the many talented Hungarian writers who made an attempt to use words as therapy, an attempt in which he failed. His final novel, *The Dispossessed* (2013; US edition expected in 2016 from HarperCollins), "reveals the destructive power of linguistic

powerlessness, of keeping silent at all costs" (Eller, 2015).

Language use related to addiction

Users of a language express elaborate concepts with lexical units, which then get loaded with content, context, and even bias. For new concepts, new words are coined, whether the need is real or perceived. Recent examples include the words of the year according to the Oxford English Dictionary, "selfie" (2013) and "vape" (2014). Many of the forcefully created terms are doomed to attrition after their origin becomes defunct or obsolete, such as the popular term "Stakhanovite" in the 1930s in the Soviet Union, which referred to an extremely productive worker. Perceived needs for a new term often result in the formation of buzzwords, such as "ideate," meaning "come up with ideas."

Content is often misleading without a more specific background. A well-known example is the story of a Hungarian poet who was expelled from university for a poem he published in 1925. According to the administration, someone with homicidal and suicidal thoughts publicly expressed could not be allowed to receive a teacher's degree.

> *Ain't no daddy, ain't no mom,*
> *Ain't no country, ain't no God,*
> *Ain't no crib, or ain't no lover,*
> *Ain't no kisses, ain't no cover.*
> *Attila József: With pure heart (1925)*

Reading out loud the first few lines of the text will immediately illustrate how it plays with rhythm and meter. The poem uses a children's rhyme, as the poet experiments with the clash of content and form – judging by the university's reaction, perhaps too daringly for his time.

The second quote from the same poet presents a few lines displayed in every classroom in Hungarian grade schools during the Communist era. It reads

> Your work should be precise, aiming high,
> As the stars move along in the sky,
> The way it's only worth it.

Little did the students know that the first two lines of the poem were missing. Ellipsis is the omission of one or more words that are obviously understood but that must be supplied to make a construction grammatically (or here, semantically) complete. Although its use is rather rare at the beginning of a sentence, in this case it completely changes the meaning.

> *Don't you rush it,*
> *Although others will profit,*
> *Your work should be precise, aiming high,*
> *As the stars move along in the sky,*
> *The way it's only worth it.*

To this effect, the witness testimony text incorporates the words "the whole truth," and that is how witnessed swear in at court:

> *"You do solemnly state that the testimony you may give in the cause now pending before this court shall be the truth, **the whole truth**, and nothing but the truth, so help you God."*

CRAWLING is acceptable.
PUKING is acceptable.
TEARS are acceptable.
PAIN is acceptable.
QUITTING IS
UNACCEPTABLE.

Figure 1 A motivating fitness quote

A perfectly motivating fitness quote (Figure 1), can become not only an insult, but even a target of a lawsuit, if the context is altered – for example, by adding a background image, such as the lady and the bottle in Figure 2.
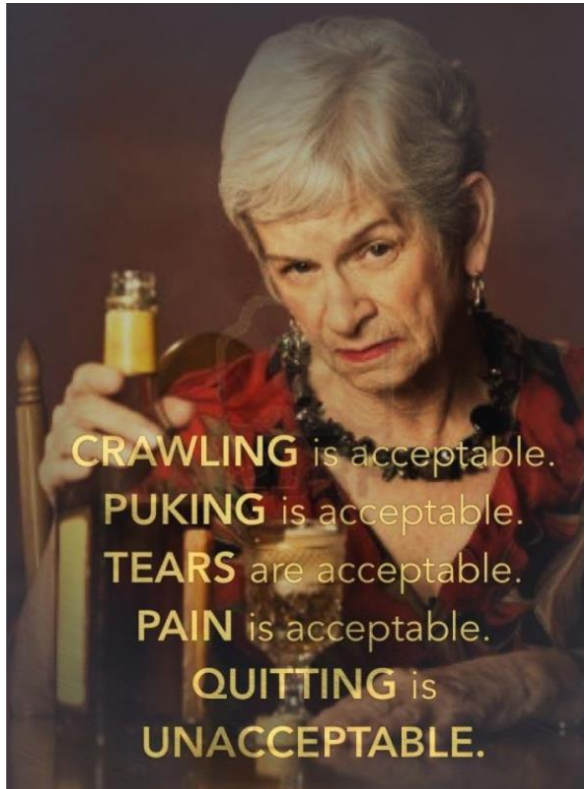
Figure 2 A motivating fitness quote – with an image in the background

Semantic change occurs when a word acquires a new meaning radically different from the original. Types of semantic change include euphemism, retronyms, bowdlerism, mumpsimus, and neologisms, among others.

Euphemism is a widely used strategy for various reasons. Doubletalk is present in the language more than we expect. Reading between the lines has become second nature in certain cultures, which prompts users of particular languages to always look for hidden meanings, unexpressed content, and real intentions. An example for euphemism from the mental health field is the progression of combat-related conditions over time. Expression can be widened and sanitized, such as in the movement from "shell shock" in World War I to "operational exhaustion" Korean War, and "PTSD" in the Post-Vietnam War era.

Retronyms are created in the language as new names for an old meaning to differentiate from a new meaning recently acquired. A watch used to be simply called a watch until digital watches appeared, creating a need to distinguish between an *analog* watch and a digital watch. The same is happening now with cigarettes, with *tobacco* cigarette used for traditional cigarettes as opposed to electronic cigarettes. For librarians and information specialists, the subsequent effect on controlled vocabularies in databases is not negligible.

Bowdlerism, stemming from Thomas Bowdler's nineteenth-century censored edition of Shakespeare, is a way of censoring cursing, religious, explicit, or political content, which seems to be happening these days with tobacco. Cigarettes have been airbrushed from old photos of Winston Churchill and Paul McCartney and even cartoons such as Tom & Jerry as a means of presenting a better example.

Mumpsimus is a certain obstinate misuse of words and expression, referring to language use that has been shown to be unreasonable or incorrect. It goes back to a priest used the nonsense word mumpsimus (instead of Latin sumpsimus) in the Mass. Even when told it was incorrect, he insisted that he had been saying it for 40 years and wouldn't change it. The expression is "quod in ore sumpsimus" ('which we have taken into the mouth'). Earliest documented use: 1530. The most famous mumpsimus in addiction history is E. M. Jellinek's nickname, "BUNKY," which does not (despite claims to the contrary) mean "little radish" in Hungarian.

Neologisms are new words and phrases which emerge as a direct response to a need to refer to new concepts. Marijuana terminology seems to respond quickly to the environmental changes. There is an obvious need for a noun for the marijuana itself, as well as for the ways of growing, storing, distributing, obtaining, smoking, inhaling, sharing, etc., the various equipment used,

amounts, sizes, and mixtures, quality of the marijuana, and the condition of the person using it. The phrases can be global or local, even borrowed from other languages.

Figure 3: Creating new words

There are many ways the language will allow for new contents as the need arises, such as compounding or blending two previously existing words, abbreviating lengthy expressions in acronyms, shifting the use of proper nouns for common use, borrowing from other languages, and including a variety of creative cannibalization of the language (Figure 3).

Figure 4 Use of numbers in addiction terminology

Numbers have a special use in addiction terminology. In addition to the famous 420 (i.e., April 20), a counterculture holiday in North America where people gather to celebrate and consume cannabis, the

doubletalk and secret handshake milieu of drugs includes a lot of units of measurement, as they are used daily. They can refer to measurable quantities, dollar amount equivalents, or a combination, corresponding to the needs of speakers (Figure 4).

Related to alcohol, another controversial term, "the standard drink," demonstrates what a lack of definitive terminology can do: across different fields of science, the legal system, and other areas of society, a standard drink is defined quite differently. Based on the various definitions, a standard drink might mean very different amounts across cultures and groups. Figure 5 shows the NIDA definition in the United States, also promoted by the Dietary Guidelines to Americans (2010 Dietary Guidelines).
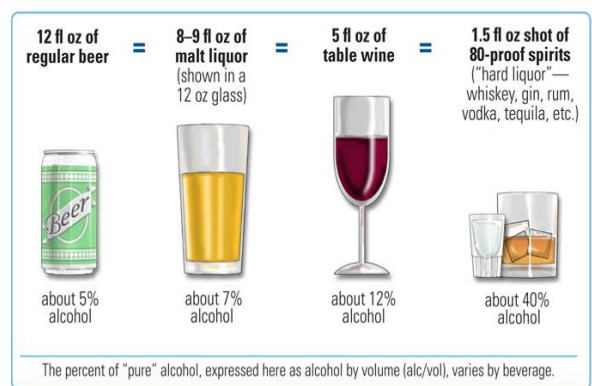
Figure 5: Standard drink

Figure 6 indicates the differences in the interpretation by countries as defined by their governments based on grams of ethanol (ICAP Reports, 1998).
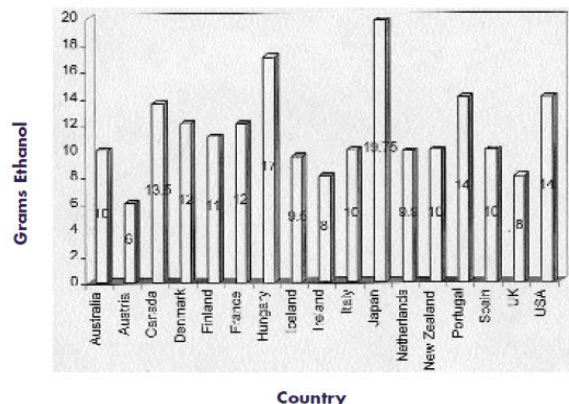
Figure 6 International interpretations of the Standard Drink

With its examples collected from addiction topics, this brief review on some general developments in our language serves merely as a foreword into the next three papers. As the field has been evolving, gradual changes in the language indicate a slow but steady shift in terminology in response to various needs. These needs indicate the efforts to promote a more standardized use of terminology and to reduce stigma with the help of language. Journal policies and publication guidelines have been traditionally valuable, as proven by the scientific literature and the publishing industry. Also discussed is a more official way to establish constructive language use by means of a classification and diagnostic tool called the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), published by the American Psychiatric Association, listing criteria to describe and categorize behavioral disorders.

References

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Virginia: American Psychiatric Association.

Dietary Guidelines to Americans (2010). Retrieved http://health.gov/dietaryguidelines/dga2010/DietaryGuidelines2010.pdf

ICAP Reports 5. What is a "Standard Drink"? (1998). International Center for Alcohol Policies. Washington, DC.

Eller, Carmen (2015). Die Welt. Cited by Szilárd Borbély: The Dispossessed. Retrieved http://www.suhrkamp.de/buecher/the_dispossessed-szilard_borbely_42450.html?d_view=english

Contact the author

Judit H. Ward, PhD, MLIS
Director of Information Services,
Center of Alcohol Studies,
Rutgers, The State University of New Jersey
607 Allison Road
Piscataway, NJ 08854-8001 USA
Phone: 848-445-4442
jhajnal@rci.rutgers.edu

L A N G U A G E   P A N E L

Language matters: Terminology in the scientific alcohol literature

William Bejarano

Center of Alcohol Studies,
Rutgers, The State University of New Jersey

The presentation version of this paper was the second in a series of talks in the panel "Language Matters" at the 2015 conference of the Substance Abuse Librarians and Information Specialists in San Diego California. At present, there is no agreed-upon terminology in the addiction science field. What follows is a brief chronicling of previous attempts to define terminology as found in the body of scholarly literature of alcohol studies, which was later expanded to addiction science.

Keywords

Language, Terminology, Scholarly literature, Scientific communication

The impulse to classify and categorize the various concepts related to alcohol and substance use dates back as far as first-century Rome (Keller, 1976), but for the purposes of this paper, we will restrict our study to the previous two centuries or so. One of the earliest thorough treatments addressing the problem of alcohol in this period is Benjamin Rush's publication *Inquiry into the effects of ardent spirits upon the human body and mind with an account of the means of preventing and of the remedies for curing them*, published in the early 19th century. Rush only refers to terminology in a tangential sense, but nonetheless provides a prophetic vision of more explicit attempts by future scholars to nail down the somewhat tenuous body of words used to describe different concepts in the field. Rush explicitly mentions both acute and chronic effects of alcohol in his *Inquiry,* a farsighted distinction that is still used as a framework in numerous scientific studies. Curiously, Rush equates acute drunkenness to an "odious disease (for by that name it should be called)," but refers to chronic drinking as *causing* other diseases, and does not classify it as a disease in itself (Henderson & Rush, 1934). It is this inexact science of labelling what one means by terms like *acute* or *chronic drunkenness*, as well as related terms such as *inebriety*, *alcoholism*, and *alcoholic*, on which this paper focuses. This is by no means an exhaustive study into the history of addiction terminology in the

scholarly literature, but instead a brief offering into some of the contentious issues and attempts to provide clarity on how information has been expressed and how the words used reflect the understanding of substance-related issues at different periods of time.

"Inebriety"

In 1876, over a half century following the publication of *Inquiry*, the first English-language addiction journal went to print, entitled the *Quarterly Journal of Inebriety* (later renamed the *Journal of Inebriety*). In their brief history of the journal, Barbara Weiner and William White note how it stemmed from the American Association for the Study and Cure of Inebriety (AACI), which held "that inebriety was a disease." This was not a popular stance to take, which was made evident by the "violent," "adverse," "bitter," and "hysterical" reactions to this declaration (Weiner & White, 2007). The title ran for nearly fifty years, ceasing publication in 1914.

In 1884, less than a decade after the launch of the *Journal of Inebriety*, a new publication was launched, entitled *Proceedings of the Society for the Study and Cure of Inebriety*. Table 1, first depicted in Edwards (2006), shows the progression of its various title changes into what is today known as *Addiction*. From a terminology standpoint, the progression from the original 11-word title to the one-word title is interesting, and may reflect the scope and understanding of substance use at these different periods of time. The chief founder of the original society, Dr. Norman Kerr, had a specific aim of investigating inebriety's various causes, and at its outset apparently had the confidence to believe that there was a cure in sight. It is important to note that the alignment of inebriety with disease is established right from the society's inception. Kerr describes inebriety as a "diseased state of the brain," uses the term "irresistible impulse," and in case he wasn't clear, follows that up with the phrase "ungovernable, uncontrollable, overpowering impulse."

Perhaps he ran out of adjectives by the end of the publication, but his point was made clear (Edwards, 2006).

Year	Journal Title
1884	*Proceedings of the Society for the Study and Cure of Inebriety*
1888	*The phrase 'and Cure' was dropped*
1901	*Transactions of the Society*
1902	*British Journal of Inebriety*
1946	*British Journal of Addiction to Alcohol and Other Drugs*
1982	*British Journal of Addiction*
1994	*Addiction*

Table 1: Addiction's name changes (as found in Edwards, 2006)

In 1888, the phrase "and Cure" was unceremoniously dropped from the society and journal's titles, perhaps as a humble nod to the enormity and complexity of the field that they had studied for the previous four years. The other major change is the substitution of the word "addiction" for "inebriety." In a 1942 editorial, former Society president W. McAdam Eccles (1942) defines "inebriety" by deferring to society's understanding of it as equal to "chronic drunkenness" or "chronic alcoholism." Because of the narrowness and stigma of such a term, he suggests a name change to "The Society for the Study of Addictions, including Alcoholism" (p. 3). Five years later, the name of the society is officially changed to the "Society for the Study of Addiction (to Alcohol and other Drugs)" and the journal changed to the *British Journal of Addiction (to Alcohol and other Drugs)*, before becoming simply *Addiction* in 1994.

Curiously, the term "Inebriety" shows up nearly 80 years after Kerr's remarks and approximately 20 years after "Addiction" was used in its stead, in Mark Keller's Dictionary

of words about alcohol. Likely because the term "alcoholism" was tied so closely with disease terminology, using the older terminology seemed a covert way of avoiding this diagnostic approach, while yet implying more than simple drunkenness (Keller & McCormick, 1968). It is worth reflecting on the severe radical semantic change that this word had undergone from the late nineteenth century, in which it was strongly aligned with the concept of a disease, to the mid-twentieth century, in which it was used specifically to avoid such an alignment.

Attempts to define modern terms
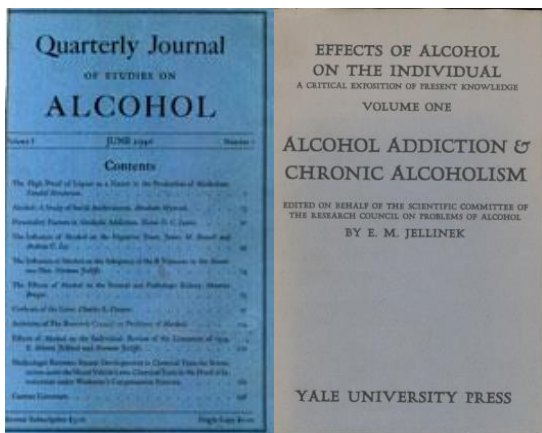
Figures 1 & 2: QJSA and Effects of Alcohol

In the very first volume of the Quarterly Journal of Studies on Alcohol, in 1940, the members of the Research Council on Problems of Alcohol (RCPA) noted the need for a specific definition of three terms—namely, alcoholic, alcoholism, and drunkenness. In their report, the terms alcoholic and alcoholism are inextricably linked to one another. An alcoholic is a "person who cannot or will not control his drinking." Alcoholism is called a "disease," in no uncertain terms. Further, each term includes as a criterion a need for treatment. The term drunkenness is tangentially related, but only by name, as it is "sometimes called acute alcoholism." The authors do not regard the acute effects of drinking as a disease per se, as Benjamin Rush did, but they do allow

for the possibility that it can lead to a chronic condition (Activities, 1940, p. 402-403).

One prominent member of the RCPA, E. M. Jellinek, went one step beyond this classification of terms, offering a more thorough and comprehensive study of troublesome and potentially vague terminology. He wrote an entire book on two specific concepts – alcohol addiction and chronic alcoholism – and in that book provides a literature review of each, doing his best to come up with a consensus among all of the various definitions. What Jellinek found was that the concept of chronic alcoholism is defined in the larger body of literature by some determination of mental or physiological changes following prolonged use of alcohol. This definition allows for "one to recognize by examination any given chronic alcoholic" (Jellinek, 1942, p. 9). The concept of alcohol addiction seems trickier, as he finds far less agreement among the literature that was available to him. The only consensus he could find was that alcohol addiction includes a craving, and an inability to resist that craving. There is much disagreement over the idea of habituation or acquired tolerance. Also unlike the definition of a chronic alcoholic, he states that this definition "does not permit of an immediate diagnosis" (Jellinek, 1942, p. 9).

Formulating a vocabulary

In the late 1950s, a short monograph authored by Mark Keller and John R. Seeley dealt with formulating a vocabulary of the alcohol language. Far from a collaborative work between the two authors, the content of this publication seems to take on the tone of a debate, with two separate articles offering differing perspectives. Keller first makes the argument that attempts to impose language on a populace generally fail, and that any working vocabulary would have to be defined first in accordance with everyday usage, next by an indication of that usage which is generally preferred, and only after these two definitions were established could a recommended usage be provided.
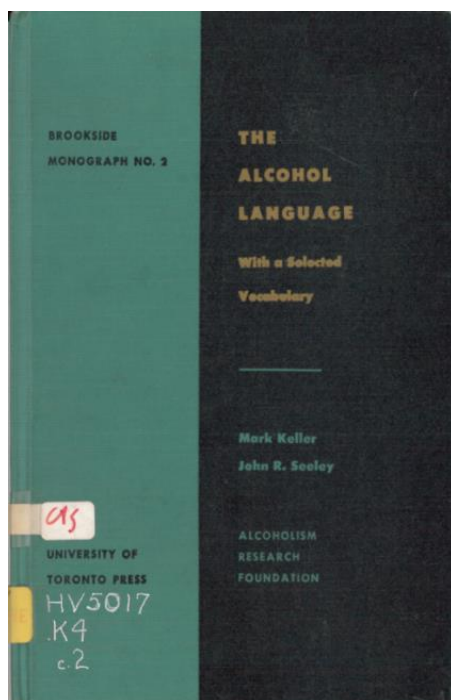
Figure 3: The Alcohol Language

Seeley, while not necessarily in disagreement with Keller's general premise, felt that the alcohol science field was small and interconnected enough at the time of their publication that a vocabulary *could* be imposed. In his piece, he provides a pithy statement regarding the shortfalls of Keller's suggestion of a merely descriptive vocabulary: "That *mere* authority should be resisted is the beginning of responsibility," Seeley declares, following with, "that *all* authority should be rejected is the essence of anarchy" (Keller & Seeley, 1958, p. 30). He agrees with Keller's idea as a stop-gap measure, and considers it certainly more useful than any attempts to that point, but advocates for a revolutionary undertaking as opposed to mere reform.

After Keller and Seeley's monograph was published, Seeley acquired a grant from the National Institute on Mental Health (NIMH) for a study of alcoholism nomenclature and classification, which he handed over to Keller in 1960 following his resignation. Keller developed the language with the help of this continuous NIMH grant through 1966, with the aforementioned book *Dictionary of words about alcohol* as its final result. In deference

to Seeley's previous suggestions, Keller writes in the introduction, "we have been influenced by the counsel of John R. Seeley: to be authoritative though not authoritarian," and later declares his stance on the so-called "crucial words and terms" thusly: "we have inserted explanations, asserted preferences [...] we hope everyone will consider them and that we may influence the disciplined users of language" (Keller & McCormick, 1968, xviii-xix). Despite their differing aims and expectations for such a project, Seeley and Keller were respectful peers who were ultimately able to channel their energies into a shared vision, resulting in a viable product.

The Disease Concept

This all leads to the paradigm-shifting publication, Jellinek's *The disease concept of alcoholism,* a book that William White once called "the most widely cited (and least read) literary artifact of the modern alcoholism movement" (White, 2000, p. 65). This now fifteen-year-old statement has been further supported by the publication's continual citability, currently with more than 2600 citations according to Google Scholar.
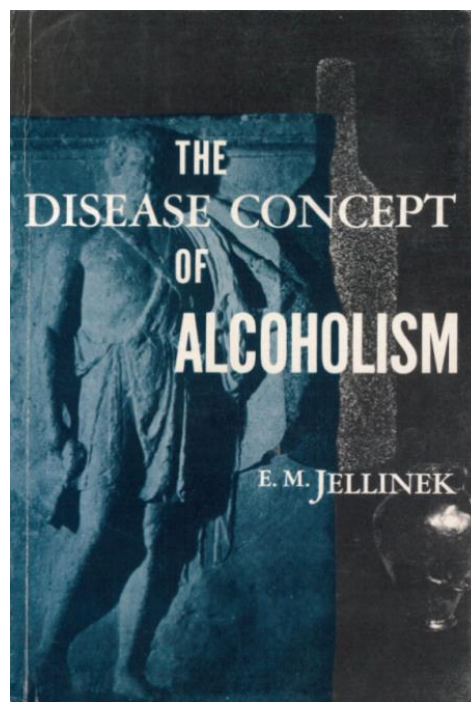
Figure 4: The Disease Concept of Alcoholism

Building on his careful terminological treatment in *Alcohol addiction* and *chronic alcoholism,* Jellinek continues to treat words and definitions specifically and with an exhaustive rendering, to the point where even the publication's title became an issue. According to Jellinek, "Alcoholism is a concept; so is disease. But that alcoholism is a disease is a viewpoint and thus a conception. Nevertheless I have bowed to the prevalent usage" (Jellinek, 1960, p.ix). Some more backstory of this struggle can be found in the paperwork of the CAS archives. In February 1959, Keller wrote in a correspondence to R. Brinkley Smithers that Jellinek "finally agreed to call it 'Concept' in the title." According to Keller, *concept* holds more "punch" than *conception,* which shows that despite his predilection for accuracy, Keller was willing to sacrifice a bit in order to better spread the message (Keller to Smithers, 1959).

Nevertheless, Jellinek's definition of alcoholism in this text is at first shockingly general – far more general than any of the previously mentioned attempts to describe the phenomenon. He defines it as "any use of alcoholic beverages that causes any damage to the individual or society or both" (Jellinek, 1960, p. 35). Reading further, it becomes clear that Jellinek's definition is a deliberate attempt to establish a broad inclusion, which is then broken down further into five distinct *species* of alcoholism. His hope was to create a usable taxonomy of alcoholic types, which unfortunately never took root in the broader culture. In a nutshell, Jellinek defines *Alpha* alcoholics as entirely psychologically addicted; *Betas* as those who have been physically ravaged by alcohol; *Gammas* as those with a physical dependence; *Deltas* as those with an inability to abstain; and *Epsilons* as those who fall into so-called "periodic alcoholism" (Jellinek, 1960).

Despite (or perhaps because of) the nuances of Jellinek's tome being lost on the general public, Keller revisited the concept some 16 years after its publication (and 13 years after Jellinek's death) in an article written for the *Journal of Studies on Alcohol* entitled "The disease concept of alcoholism revisited" (Keller, 1976). He makes a specific point to mention his bafflement as to how the disease's complexity has led to a doubting of its existence, pondering "why the inconsistency or variety of manifestations or symptoms should cast doubt on alcoholism being a disease is difficult to understand" before equating it with pellagra, a universally accepted disease, and listing its diverse and various characteristics (Keller, 1976, p. 1707).

Jellinek's ultimate goal of creating an all-encompassing encyclopedia of alcohol was the project he was working on at the time of his sudden death in 1963. We can only guess now at the potential impact such a project would have had on the field at the time.

Journal policies and guidelines

Keller was such an influential journal editor and scholar that his impact on the language lives on in how these words are used in the scientific literature, even to this day. An interesting impact in modern-day usage can be found in language policies and guidelines that are offered in addiction-focused journals. Starting with the journal of which Keller worked as editor for much of his career, the *Journal of Studies on Alcohol and Drugs*, two specific terms have been singled out for authors to be cognizant of. Regarding the term "abuse," the journal notes a range of phenomena being attributed to the term, and provides the following guidelines to unambiguously regulate its usage:

> *If authors are using the term "abuse" other than in connection with the diagnoses specified in the DSM or other published systems, we ask that they change their terminology. For alcohol, alternative terms might include "alcohol misuse" or "heavy" or "problem use" of alcohol. For illegal substances, authors might refer to "illicit substance use" or "use of illicit drugs." On a final note, the journal strongly encourages authors to carefully distinguish between the terms "abuse" and "dependence" (as defined in the DSM or other major published*

nomenclature) in their papers ("Information on…," 2016).

The other term that the journal has noticed being used in a variety of ways is "binge" or "binge drinking," which they concretely establish should only be used to describe, "an extended period of time (usually two or more days) during which a person repeatedly administers alcohol or another substance to the point of intoxication, and gives up his/her usual activities and obligations in order to use the substance" ("Guidance for authors…," 2016). Alternative phrases such as "heavy episodic drinking" are suggested for similar phenomena that nevertheless do not fit this definition.

Journal terminology policies and guidelines extend beyond scholarly clarification, and have also been introduced in order to avoid using words that may be taken pejoratively. One example includes the journal *Substance Abuse*, in a 2014 editorial, providing guidelines to authors to use "people-first" language, focus on the medical nature of substance use disorders, and promote the recovery process (Broyles et al, 2014). Another comes from the official publication of NAADAC, The Association for Addiction Professionals, called *Advances in Addiction & Recovery,* which requests that its authors avoid terms like "addict," "abuser," or "alcoholic," and instead suggests terminology referring to patients' or clients' disorders ("Publication guidelines," 2013).

Databases and future directions

Finally, worth mentioning are the tools so integral to the daily work of addiction librarians – namely, professionally indexed databases. These databases are strongly reliant on strict controlled vocabularies which are then used to classify and organize all of the works held within them. A comprehensive study of the addiction terminology used in these distinct vocabularies is outside of the scope of this

paper (though a potentially fruitful future project!), but there must be an understanding that definitions of some of the aforementioned terms can vary based on the databases used, and this may be the area in which the impact of language is most directly felt. For example, those searching databases that use the National Library of Medicine's Medical Subject Headings (MeSH), such as MEDLINE, would find the heading "Alcohol-Related Disorders" listed hierarchically below "Substance-Related Disorders," which is itself listed below "Mental Disorders." On the other hand, the Library of Congress terminology, used in databases such as Academic Search Premier, uses the term "Alcoholism," which falls under the broader term "Substance Abuse." This narrow example simply adds to the complexity and confusion of language and terminology in the field of alcohol and addiction science, and speaks to the need for a dedicated field-specific database. Such a database would need to be equipped with a clearly defined set of terms, such as that advocated by Babor and Hall (2007). A potential starting point for such a venture might be the Code Dictionary of the Classified Abstract Archive of the Alcohol Literature, first devised by E. M. Jellinek for the initial 1939 review of existing knowledge on the effects of alcohol on the individual (Keller, Efron, & Jellinek, 1965), which essentially gave birth to the field as we know it. Given the continuous expansion and multidisciplinary nature of the addiction field since the time of its inception, such a venture would be a welcome unifying force and could make great strides toward a much-needed centralization.

References

Activities of the Research Council on Problems of Alcohol. (1940). *Quarterly Journal of Studies on Alcohol, 1,* 402-403.

Advances in Addiction & Recovery publication guidelines. (2013). Retrieved from http://www.naadac.org/advancesinaddictionrecovery#Publication_Guidelines

Babor, T. F., & Hall, W. (2007). Standardizing terminology in addiction science: To achieve the impossible dream. *Addiction*, *102*(7), 1015-1018.

Broyles, L. M., Binswanger, I. A., Jenkins, J. A., Finnell, D. S., Faseru, B., Cavaiola, A., ... & Gordon, A. J. (2014). Confronting inadvertent stigma and pejorative language in addiction scholarship: A recognition and response. *Substance Abuse*, *35*(3), 217-221.

Eccles, W. M. (1942). The Society for the Study of Inebriety. Its past and present: What of its future? *British Journal of Inebriety, 40*(1), 1-10.

Edwards, G. (2006). Addiction: A journal and its invisible college. *Addiction, 101,* 629–637. doi: 10.1111/j.1360-0443.2006.01410.x

Guidance for authors on the policy of the Journal of Studies on Alcohol and Drugs regarding the appropriate use of the term "binge". (2016). http://www.jsad.com/page/instructions/binge

Henderson, Y., & Rush, B. (1934). *A new deal in liquor, a plea for dilution*. New York, NY: Doubleday, Doran & Company, Inc.

Information on the policy of the Journal of Studies on Alcohol and Drugs regarding the appropriate use of the term "abuse." (2016). Retrieved from http://www.jsad.com/page/instructions/abuse

Jellinek, E. M. (1960). *The disease concept of alcoholism*. New Haven, CT: Hillhouse Press.

Jellinek, E. M. (Ed.). (1942). *Alcohol addiction and chronic alcoholism*. New Haven, CT: Yale University Press.

Keller, M. (1959, February 25). [Letter to R. Brinkley Smithers]. Keller Files. Center of Alcohol Studies Archives (in process), Rutgers, The State University of New Jersey, Piscataway, NJ.

Keller, M. (1976). The disease concept of alcoholism revisited. *Journal of Studies on Alcohol*, *37*(11), 1694-1717.

Keller, M., Efron, V., & Jellinek, E. M. (1965). *CAAAL Manual: A guide to the use of the Classified Abstract Archive of the Alcohol Literature*. New Brunswick, NJ: Journal of Studies on Alcohol, Inc.

Keller, M., & McCormick, M. (1968). *A dictionary of words about alcohol.* New Brunswick, NJ: Journal of Studies on Alcohol, Inc.

Keller, M., & Seeley, J. R. (1958). *The alcohol language, with a selected vocabulary*. Toronto, ON: University of Toronto Press.

Weiner, B., & White, W. (2007). The Journal of Inebriety (1876-1914): History, topical analysis, and photographic images. *Addiction, 102,* 15-23.

White, W. (2000). The rebirth of the disease concept of alcoholism in the 20th century. *Counselor, 1*(2), 62-66.

Contact the author

William Bejarano, MLIS, MLER
Senior Information Specialist,
Rutgers Center of Alcohol Studies
607 Allison Rd.
Piscataway, NJ 08854 USA
Phone: 848-445-4442
bejarano@rutgers.edu

Language matters: A discussion of international differences in terminology and implications for indexing and tagging

Christine Goodair

Programmes Manager (Substance Misuse)
St George's University of London

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Keywords

Language, Terminology, Etymology, Taxonomies

Use of words, differing meanings

"Lunch on your own": what does this mean? I first came across this phrase at my first SALIS Conference in 2003, and being English understood it literally (to have lunch on your own without any company), but then of course I realised that in the context of North America it means you have to pay for your own lunch! This demonstrates that although we share the same language there can be tremendous differences and misunderstandings.

Etymology and emerging concepts of addictions

For this panel I looked at the etymology of addiction – from the Latin verb "addicere" – to give or bind a person to one thing or another. The online Etymology Dictionary (http://www.etymonline.com/index.php?term=addiction) states "noun 1600, "tendency," of habits, pursuits, etc.; 1640s as "state of being self-addicted," from Latin addictionem (nominative addictio) "an awarding, a devoting," noun of action from past participle

stem of addicere (see addict (v.)). The earliest sense was less severe: "inclination, penchant," but this has become obsolete. In main modern sense it is first attested 1906, in reference to opium (there is an isolated instance from 1779, with reference to tobacco). Addiction is used ambiguously with arbitrary meanings and alongside other ill -defined terms such as habituation and drug dependence or drug abuse. Jenkins (1999) in "Synthetic Panics: the Symbolic Politics of Designer Drugs," argues that there are two issues with the term "drug abuse." He explores the issue that what constitutes a "drug" is debatable. An example of this is gamma-Hydroxybutyric acid, a naturally occurring substance in the central nervous system that is considered a drug, and is illegal in many countries, while nicotine is not officially considered a drug in most countries. The word "abuse" suggests a recognized standard of use for any substance. Drinking an occasional glass or a few of wine is considered acceptable in most Western countries, while drinking a bottle is seen as an abuse, and three or more large glasses in one session can be described as "binge drinking."

In the field of addictions there are differing approaches to the language we use, and the sector comprises medical, social, and psychological disciplines, which is demonstrated in its terminology. Berridge et al. (2014) explore the language of addiction and policy responses for two key periods, 1860-1930 and the 1950s and 1906s, and conclude that the language of addiction has been varied and non-standard.

Stigma associated with language

In the UK the term "substance misuse" is used more than "substance abuse," as the latter is considered to be more pejorative. Until recently, in the US the term substance abuse was more common. The *Diagnostic and Statistical Manual of Mental Disorders*, DSM-5, (2013), no longer uses the terms "substance abuse" and "substance dependence," but instead uses "substance use disorders,"

terminology which is considered to be less stigmatising.

A 2008 publication by the US non-profit organization National Alliance of Advocates for Buprenorphine Treatment entitled "The Words We Use Matter. Reducing Stigma through Language" states that "stigma remains the biggest barrier to addiction treatment faced by patients." The terminology used to describe addiction has contributed to the stigma. Many derogatory, stigmatizing terms were championed throughout the "War on Drugs" in an effort to dissuade people from misusing substances. Education took a backseat, mainly because little was known about the science of addiction. That has changed, and the language of addiction medicine should be changed to reflect today's greater understanding. By choosing language that is not stigmatizing, we can begin to dismantle the negative stereotype associated with "addiction," as is shown by this excerpt from a 2014 blog post by Yngvild Olsen:

"I just want her to be clean," her mother said as I looked across the table at her daughter, the person who I had treated for opioid use disorder for the last year. That person, head hung low, was clutching her bag until her knuckles blanched.

It sounded funny, coming from an educated, relatively affluent woman – clean. It made it sound as if her daughter hadn't showered recently or was wearing dirty clothes. That didn't seem to be the case to me. I wondered what the mother really thought of her daughter and vice versa and what kind of relationship they really had. I wondered how I would feel if my mother said the same about me. "If I'm not clean, mom, then I must be dirty, and who wants to love or help a dirty person?" (Olsen, 2014)

The need to standardize?

Standardizing language and terminology in addiction is a matter that is highly relevant not only to addiction professionals, but also to those of us who work as information

professionals in the field. We have the task of using language effectively when indexing for information retrieval, thus ensuring that researchers and practitioners can find literature and resources easily and quickly. We need to be aware that language changes with new words coming in and others falling into disuse, or re-emerging. For example, the term "legal highs" is very much in use currently but has been around since the late seventies or early eighties and is a term now used to describe novel or new psychoactive substances or stimulants, along with others such as "research chemicals" "NPS [Novel Psychoactive Substances]," "designer drugs," or "herbal highs." There are differing definitions and views of NPS and discussions about which drugs can be considered as NPS (Goodair, Corkery, and Claridge, 2014; King and Nutt, 2014).

Developing an addictions taxonomy

ELISAD, the European Association of Libraries and Information Services on Alcohol and other Drugs, was funded between 2002-7 by the European Commission to develop and maintain an online gateway of evaluated websites on addictions. The team comprised 18 partners from addiction libraries and documentation centers across Europe assigned to select, evaluate, classify, index and catalogue internet resources for the gateway. Within this project the major challenge was how to deal with the issue of different terminologies, concepts and understandings. The approach in the first phase was to develop an English language list of agreed indexing terms, with definitions, to use when classifying and evaluating websites in order to make subsequent searching and retrieval effective. Being clear and precise in the use of language was essential as the taxonomy was being used by partners whose first language was not English, and this element of the project gave rise to many debates about the meanings of particular words and their use. In the second phase of the project a key aim was to update the

indexing terms and develop an addictions taxonomy for translation. This was done by analysing and mapping the free text search field to the indexing terms to identify how often a keyword was used as a measure of its continued literary warrant. This led to compound facets being developed to accommodate different ideologies across Europe, and written Scope Notes for the taxonomy were provided. The taxonomy was translated into 17 languages.

WP 4 Addictions Taxonomy	Develop addictions taxonomy	Systematic review of key words and indexing terms. Hierarchy of terms developed Creation of 13 systematic facets with 400 top/narrow terms. Scope Notes & contextual information written
WP 5 Translation	English language taxonomy translated into other European languages	17 language versions of the taxonomy 17 language versions of the website 17 version of promotional literature

This task was challenging both intellectually and culturally. Developing an accepted taxonomy which could be understood, translated and used requires patience, time and an awareness of the differing approaches to addiction across Europe.

Babor and Hall (2007) called for a consensus conference on alcohol and other

drugs terminology. Reflecting on the experience of the Gateway project I would argue that such an event could be productive in addressing the many differences in use and understanding of addiction language across the world. What we achieved in the Gateway project was not simply a set of agreed terms, but a far greater understanding of the issues faced by those in other European countries, particularly those whose first language is not English. As information specialists, we found our retrieval skills greatly heightened through a deeper understanding of the ways in which colleagues from other countries use

a particular term, and we can only assume that this advantage would prove even greater for those involved in research. This deeper understanding of addiction terminology is also useful when tagging blogs and websites, and for determining keywords when publishing in the academic literature.

There is thus a need for us all to work collaboratively towards the standardisation of our terminology to ensure that knowledge exchange and retrieval in the age of information overload is more efficient for all within the sector.

References

Addiction. (n.d.). In *Online Etymology Dictionary* online. Retrieved from http://www.etymonline.com/index.php?term =addiction

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Virginia: American Psychiatric Association.

Babor, T. F., & Hall, W. (2007). Standardizing terminology in addiction science: to achieve the impossible dream. *Addiction*, 102, 1015–1018. doi: 10.1111/j.1360-0443.2007.01845.x

Berridge, V., Mold, A., Beccaria, F., Eisenbach-Stangl, I., Herczynska, G., Moskalewicz, J., … & Taylor, S. (2014). Addiction in Europe, 1860s-1960s: Concepts and responses in Italy, Poland, Austria, and the United Kingdom. *Contemporary Drug Problems, 41*(4), 551-566. doi: 10.1177/0091450914567119

Goodair, C., Corkery, J., & Claridge, H. (2014). Legal highs: A problem of definitions? *The Lancet*, *383*(9930), 1715.

Jenkins, P. (1999). Synthetic panics: The symbolic politics of designer drugs. New York: NYU Press.

King, L.A., & Nutt D.J. (2014). Deaths from "legal highs" a problem of definitions. *The Lancet*, 383(9921), 952.

The National Alliance of Advocates for Buprenorphine Treatment. (2008). *The words we use matter: reducing stigma through language.* (10M 06/08). Retrieved from https://www.naabt.org/documents/NAABT_L anguage.pdf

Olsen, Y. (2014, August 1). Language matters [Web log post]. Retrieved from http://kolmac.com/bl**og**/2014/08/01/langua ge-matters/

Contact the author

Christine Goodair BA (Hons) FRSA
Programmes Manager (Substance Misuse)
Population Health Research Institute
6th Floor,Hunter Wing
St George's,University of London,
Cranmer Terrace
London SW17 ORE
cgoodair@sgul.ac.uk

Language matters: How and why the DSM has changed and what this means for librarians working in the addictions field

David Man

The National Center on Addiction and Substance Abuse (CASA)

The presentation version of this paper was the fourth in a series of talks in the panel "Language Matters" at the 2015 conference of the Substance Abuse Librarians and Information Specialists in San Diego California.

Keywords

Language, Medical terminology, Addictions

The American Psychiatric Association (APA)'s *Diagnostic and Statistical Manual of Mental Disorder*s, usually referred to as the DSM, is the uniformly accepted diagnostic tool/instrument for accessing and diagnosing behavioral health disorders. It consists of sets of criteria that identify, describe, and categorize all recognized psychological disorders. In a sense it is similar to the librarians' classification systems such as LC subject headings and the NLM's MESH: the DSM is what researchers and practitioners use to organize and apply knowledge throughout the mental health world, including in addiction studies. Because of the critical role performed by the DSM in the addictions field, it is important for librarians working in this area to be aware of current usage as determined by the DSM and in particular what kinds of changes have been made to it over the years.

LC subject headings are much more numerous and varied than the terms found in the DSM. They range from subjects not even included in the DSM such as 'Sex addiction — Religious aspects — Buddhism', to obsolete terms like 'Substance Abuse' (which also happens to be the superordinate LC subject heading). Such variety attests to the very different purposes for which the two sets of terms are used. The publication of the [ETOH thesaurus](#) was an attempt to bridge the gap between addiction as it was studied and treated and bibliographic practices.

Traditional medical diagnoses are typically based on *biological markers* such as blood tests, heart rate, urine samples, biopsies, etc. However, for *behavioral* health diagnoses there are far fewer biological indicators to rely upon and so instead a set of behavioral criteria needs to be agreed upon and established by experts in the field in order to diagnose disorders.

These diagnoses are needed in order to confirm that an individual has a particular behavioral disorder – particularly important in countries without free universal mental health coverage, like the United States, where patients must have a confirmed diagnosis in order to claim coverage for treatment under such provisions as *The Mental Health Parity and Addiction Equity Act.* The DSM is also used as the basis for the determination of diversion to treatment, the level and type of treatment, scholarly research, and the design of public health policy.

When it was first published in 1952 the DSM contained about 50 separate psychiatric disorders. There was no separate category for Addiction, which was then subsumed under 'Sociopathic Personality Disturbance' (SPD), and the subject only had its own independent terms in the 1987 edition – DSM III – in which there appeared two categories of disorder – *Substance Abuse* and *Substance Dependence.*

Subsequently, the 1994 – DSM IV – had 172 disorders and in fact the most recent 2013 edition – DSM 5 – has 20 fewer disorders at 152. These disorders have not simply disappeared; instead, they have been redefined and reorganized, grouped with or merged into other diagnoses.

The recent changes made to the DSM include dropping *Substance Use Disorders* (IV) and replacing it in 5 with *Substance Related Disorders*. But these are superordinate empty categories; they are headings or placeholders. The specific disorders and operative criteria for diagnosis are nested beneath them. (Martin, 2008).

Hence, under the heading 'Substance Use Disorders' in the DSM IV there were distinguished two categories of the disorder or two discrete entities: Substance ABUSE [harmful use] and Substance DEPENDENCE [addiction]. These were defined by a mutually exclusive set of criteria, which for the sake of simplicity and brevity this paper will not fully explore (Compton, 2013; O'Brien, 2010).

Although the term 'Addiction' had been used in earlier editions of the DSM, it was not used in the DSM IV, which used 'Abuse' and 'Dependence' instead.
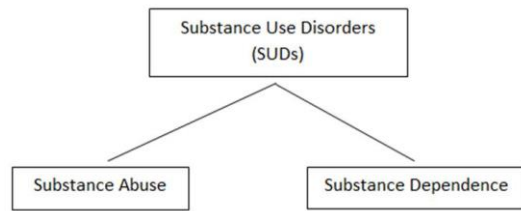
The same sort of variance in terminology across time can be seen with 'Alcoholism' in the figure below.
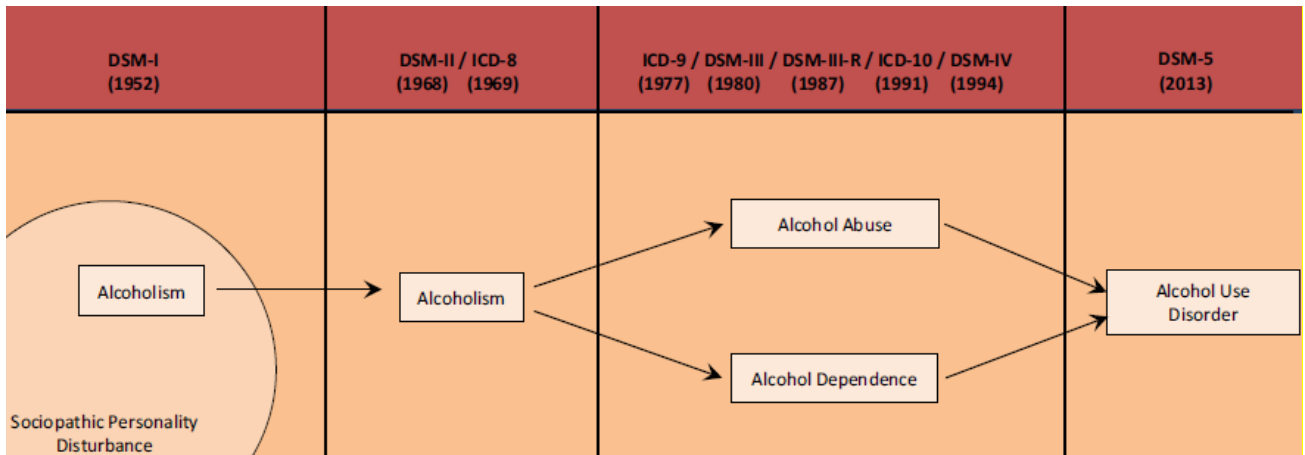
From Sellman, J. D., Foulds, J. A., Adamson S. J., et al., 2014

In the DSM 5, however, both the terms ABUSE and DEPENDENCE were rejected. The reason given for the rejection of 'Dependence' is that it could be too easily muddled with tolerance. As defined in the DSM IV, 'dependence' could apply to both

1. Physiological dependence on a substance and 2. Addiction involving that substance

Those working in the field of palliative care were at pains to point out that *dependence* and *addiction* were *not* the same. For example, a cancer patient who needs his or her pain medication can become *dependent* on the medication *without* becoming addicted. They can experience tolerance and suffer from withdrawal, which would be key indicators of dependence, but neither tolerance nor withdrawal in this case would make that cancer patient an addict. He may experience an increase in pain as he becomes more tolerant toward the drug and he may therefore demand greater amounts of the drug but we would not consider the patient an addict. (Heit, & Gourlay, 2009; Erickson, 2008). Palliative care doctors claimed that because patients sometimes showed signs of dependence doctors would under-prescribe pain medication in order to avoid the patient becoming addicted. However dependence is a normal physiological adaption to repeated dosing of a medication. As a consequence of these arguments 'Dependence' was dropped from the DSM 5.

The reason for dropping 'Abuse' from the DSM 5 was more obvious in that 'Abuse' has pejorative connotations: classifying an activity as abuse implies a moral judgment (Kelly, J. F., & Westerhoff, C. M., 2010); Wakeman, S. E., 2013).

The use of 'Addiction' was reintroduced in the DSM 5 such that the DSM IV's heading *Substance Use Disorders* (SUDs) became *Substance-Related and Addictive Disorders.* The first part of this heading *(Substance-Related Disorders*) is used to include two distinct forms: i) *Substance Use Disorders* and ii) *Substance-Induced Disorders.* These two

terms replaced the DSM IV's use of *Dependence* and *Abuse.*

The first part, *Substance Use Disorders,* refers to problems arising from the direct use of specific products, i.e. alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, and tobacco. *Substance-Induced Disorders* include such psychological states as withdrawal, anxiety, depression, psychosis, etc. which are often shared across different substances.
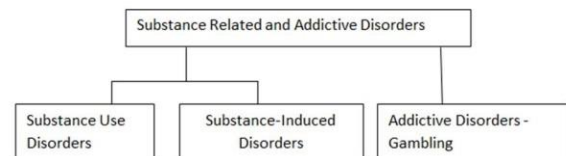
In the DSM 5 *Substance Use Disorders* are viewed as a sliding scale from Moderate to Severe: a continuous uni-dimensional phenomenon where differences are measured only by degrees of severity. By contrast, the DSM IV had two distinct dichotomous disorders: *Substance Abuse* and *Substance Dependence.*

Although both IV and 5 include *Substance Use Disorders,* they do so differently. In the case of IV it is an over-arching heading under which are subordinated two actual diagnoses, *Substance Abuse* and *Substance Dependence*; now, in DSM 5, it is a diagnosis in its own right.

The second part of the heading (*Addictive Disorders)* refers to the inclusion of Non-Substance or Behavioral Disorders that are addictive. In other words, these are disorders that are of an addictive nature and that do *not* involve substances. As a result of this gambling was included in the DSM 5 as an example of an *Addictive Disorder* whereas in the DSM IV gambling was classified as an *Impulse Control Disorder*. Post-DSM 5, gambling has come to be regarded as a prototypical example of a 'behavioral addiction' (Petry, N. M, Blanco, C., Auriacombe, M. et al., 2014 ; Robbins, T. W., & Clark, L., 2015).

This in turn has opened up the possibility of other behaviors that have a compulsive component such as shopping, sex, food, and use of the internet to be included in future editions of the DSM as examples of an 'Addictive Disorder'. All of these behaviors were considered for inclusion in the DSM 5 but were rejected by the committee for lack of evidence. Subsequently many articles have been published that attempt to justify the inclusion of these other addictive-like behaviors. If more behaviors are added to gambling, the subject field in which most SALIS librarians now operate will expand enormously (Yau, Y. H., & Potenza, M. N., 2015).

We can summarize the main differences between the DSM IV and 5 as follows:

TERM	DSM IV	DSM 5
Addict*	NO	YES
Abuse	YES	NO
Dependence	YES	NO
Substance Use Disorder(s)	YES (as heading)	YES (as diagnosis)
Substance-Related Disorders	NO	YES

Although "Substance Use Disorder" appears in both the DSM IV and 5, it performs different functions. Much of the DSM 5 reclassification, e.g. the addition of *Addictive Behaviors*, was said to be motivated by studies that suggest similar brain functioning among those with substance use disorders and those with some kind of addictive behavioral disorder such as gambling. Neuroimaging criteria, however, are specifically excluded from making an individual diagnosis. Indeed, the ultimate justification for reclassifying gambling among addictive disorders was not observable brain activity but rather similar risk-taking behavior on the Cambridge Gamble Task.

Thus, the committee in charge of making the change from IV to 5 surprised observers by sticking with relatively traditional, behavioral symptom-oriented descriptors and rejecting potential biomarkers as criteria. However, the role of neuroimaging in determining the extent to which 'addictive behaviors' share the same etiological foundations as substance-based addictions may pave the way for new diagnostic criteria in the future (Möller, H. J. et al., 2015).

The legal profession took up the DSM IV's dependence/abuse dichotomy such that those who could be classed as 'dependent' came to be considered less responsible for their behavior and therefore more likely to be considered candidates for diversion to treatment. On the other hand, those who *abuse*d substances were considered more responsible for their behavior and so less deserving of treatment. (Norko, M. A., & Fitch W. L., 2014).

However the DSM 5's recognition of just one descriptor *Substance Use Disorders* includes a heterogeneous population spanning from risky to hazardous use and this in turn has raised sentencing issues. The DSM 5 explicitly states that it was developed to meet the needs of clinicians and public health professionals and not those of the courts and the legal profession. However, the loss of 'dependence' and 'abuse' has implications for sentencing. There are 12 jurisdictions in the US where the criterion for diversion to treatment is based on terms like 'dependent' or 'addicted'. Some have suggested that as many as one-fifth of individuals previously eligible for diversion may not be eligible using the DSM 5.

Changes in terminology can increase or decrease the population identified by the change. The number of those identified as being moderate, risky, or harmful users can shift depending on the criteria used to make the diagnosis. When researchers have compared prevalence among populations diagnosed using both IV and 5, consistency between the two has been shown to be high. But not always: for instance, the prevalence of cannabis use disorder decreased from DSM IV (6.2%) to DSM 5 (5.4%) (Kelly, S. M., et al., 2014; Lundin, A., et al., 2015).

Just as the DSM has shifted terminology over time, so too has MESH. For example in MESH, 'Drug Addiction' evolved to 'Drug Abuse', which was replaced by 'Drug Dependence' and then became 'Substance Related Disorders'. MESH uses both 'Alcoholism' and 'Alcohol related Disorders', whereas DMS 5 has just 'Alcohol Use Disorder'. (Keller, M., & Doria, J., 1991).

Today, both use the term *Substance-Related Disorders*. Unlike the DSM, MESH tends to refer to specific types of user or persons. It first referred to 'Skid Row Alcoholics' and 'Alcoholism' even though this was dropped after DSM II. However, there is not a great deal of consistency between the DSM 5 and MESH, which is unfortunate (McCray, A. T., & Kyungjoon, L., 2013).

As the 'disease' concept of addiction has become one of the more dominant notions by which addiction is understood and described, the use of the term 'disorder' has gradually been displaced. However, the DSM refers to all categories found under the heading *Substance Related and Addictive Disorders* as 'disorders'. A disorder is close in meaning to disease but is a weaker term and does not imply any structural change. However, which word you choose to use, 'disorder' or 'disease', can indicate a political choice as to how you view addiction (Glantz, M. D., 2013). Using the term 'disease' positions addiction as more a physiological ailment than a mental one. One motivation for doing this is to avoid the idea that addiction is a mental condition which has a basis in psychology and hence the personality of the individual which in turn can be exposed to the idea of personal responsibility and will.

As more psychological disorders are shown to have structural or functional correlates in the brain the notion of disease may become dominant, but the term itself does not preclude the use of disorder and both can theoretically co-exist.

Such shifts in terminology as demonstrated by the change from the DSM IV to 5 have important consequences on how we understand the field in which we work and we should be aware of how and why these changes have come about and their consequences. But the DSM 5 is not the only game in town. There is also the ICD10 which refers to a *Dependence Syndrome* as opposed to *Substance-Related Disorders* thereby maintaining terminology that the DSM 5 has chosen to reject. SALIS is an international organization and such differences make it even more of a challenge to communicate with each other across borders.

References

Compton, W. M., Dawson, D. A., Goldstein, R. B., & Grant, B. F. (2013). Crosswalk between DSM-IV dependence and DSM-5 substance use disorders for opioids, cannabis, cocaine and alcohol. *Drug and Alcohol Dependence, 132*(1-2), 387-990.

Erickson, C. K. (2008). In defence of "Dependence". *Alcoholism: Clinical & Experimental Research, 32*(1), 1–3. doi: 10.1111/j.1530-0277.2007.00521.x

Glantz, M. D. (2013). The terminology of addictive behavior. In P. M. Miller (Ed.), *Principles of addiction: Comprehensive addictive behaviors and disorders* (pp. 13-22). San Diego, CA: Academic Press.

Heit, H. A., & Gourlay, D. L. (2009). DSM-V and the definitions: Time to get it right. *Pain Medicine, 10*(5), 784-786. doi: 10.1111/j.1526-4637.2009.00654.x

Keller, M., & Doria, J. (1991). On defining alcoholism. *Alcohol Health and Research World, 15*(4), 253-259.

Kelly, J. F., & Westerhoff, C. M. (2010). Does it matter how we refer to individuals with substance-related conditions? A randomized study of two commonly used terms. *International Journal of Drug Policy, 21*(3), 202-207. doi: 10.1016/j.drugpo.2009.10.010

Kelly, S. M., Gryczynski, J., Mitchell, S. G., Kirk, A., O'Grady, K. E., & Schwartz, R. P. (2014). Concordance between DSM-5 and DSM-IV nicotine, alcohol, and cannabis use disorder diagnoses among pediatric patients. *Drug and*

Alcohol Dependence, 140, 213-216. doi: 10.1016/j.drugalcdep.2014.03.034

Lundin, A., Hallgren, M., Forsman, M., & Forsell Y. (2015). Comparison of DSM-5 classifications of alcohol use disorders with those of DSM-IV, DSM-III-R, and ICD-10 in a general population sample in Sweden. *Journal of Studies on Alcohol and Drugs, 76*(5), 773-780.

Martin, C. S., Chung, T., & Langenbucher, J. W. (2008). How should we revise diagnostic criteria for substance use disorders in the DSM-V? *Journal of Abnormal Psychology, 117*(3), 561-575. doi: 10.1037/0021-843X.117.3.561

McCray, A. T., & Kyungjoon, L. (2013). Taxonomic change as a reflection of progress in a scientific discipline. In B. Küppers, & U. H. S. Artmann (Eds.), *Evolution of Semantic Systems* (pp 189-208). Berlin: Springer.

Möller, H. J., Bandelow, B., Bauer, M., Hampel, H., Herpertz, S. C., Soyka M., ... & Maier, W. (2015). DSM-5 reviewed from different angles: Goal attainment, rationality, use of evidence, consequences -- part 1: General aspects and paradigmatic discussion of depressive disorders. *European Archives of Psychiatry and Clinical Neuroscience, 265*(1), 5-18. doi: 10.1007/s00406-014-0520-x

Norko, M. A., & Fitch W. L. (2014). DSM-5 and substance use disorders: Clinicolegal implications. *Journal of the American Academy of Psychiatry and the Law, 42*(4), 443-452.

O'Brien, C. (2011). Addiction and dependence in DSM-V. *Addiction, 106*(5), 866-867. doi: 10.1111/j.1360-0443.2010.03144.x

Petry, N. M, Blanco, C., Auriacombe, M., Borges, G., Bucholz K, Crowley T. J, ... O'Brien, C. (2014). An overview of and rationale for changes proposed for pathological gambling in DSM-5. *Journal of Gambling Studies, 30*(2), 493-502. doi: 10.1007/s10899-013-9370-0

Robbins, T. W., & Clark, L. (2015). Behavioral addictions. *Current Opinion in Neurobiology, 30*, 66-72. doi: 10.1016/j.conb.2014.09.005

Sellman, J. D., Foulds, J. A., Adamson, S. J., Todd, F.C., & Deering, D. E. (2014). DSM-5 alcoholism: A 60-year perspective. *Australian and New Zealand Journal of Psychiatry, 48*(6), 507-511. doi: 10.1177/0004867414532849

Wakeman, S. E. (2013). Language and addiction: Choosing words wisely. *American Journal of Public Health, 103*(4), e1-e2. DOI: i: 10.2105/AJPH.2012.301191

Yau, Y. H., & Potenza, M. N. (2015). Gambling disorder and other behavioral addictions: Recognition and treatment. *Harvard Review of Psychiatry, 23*(2), 134-146.

Contact the author

David Man, PhD, MLIS
Librarian
The National Center on Addiction and Substance Abuse (CASA)
633 Third Avenue, Floor 19 New York, NY 10017
Tel: 212-841-5255
Fax: 212-956-8020
Email: dman@casacolumbia.org

Image conscious: Visualizing scholarly reputation

William Bejarano

Judit H. Ward

Center of Alcohol Studies,
Rutgers, The State University of New Jersey

In an increasingly data-driven world, the amount of information available on any given topic can begin to feel overwhelming, especially to those of us who work in the information profession. This paper gives an overview of how displaying information in a visual way can tu0rn large, complex data sets into something more digestible and understandable to the general public. The foundational principles of human visual perception are established, which should be applied to any attempt to visualize data, and a brief tutorial on the process and output of select tools is offered. To show its practical relevance, examples are presented of how the concept of "scholarly reputation" is uniquely visualized in various platforms.

Keywords

Visualization, Academic achievement, Scholarly social media

There are essentially three ways to accurately represent and communicate an abstract concept. The first is with the use of language: depicting concepts as words, strung together to form sentences, which can be placed in a specific order to be published in, say, a conference proceedings. The second, and more universal, method is the use of data tables. When using this method, a concept can be correlated with another concept and placed on an organized chart. Often, the concepts are quantified in some way, and with that, numbers can reach across languages and thus extend beyond cultural hang-ups which are intrinsically tied to linguistic expressions of concepts. The third method, and the focus of this paper, is taking data one step further with the use of visualizations, which tap into the realms of the human perceptual system to pre-cognitively disseminate an idea.

Statistician and visualization pioneer Edward Tufte conceived some very basic principles to keep in mind when analyzing or creating visual displays. The first is to keep the focus on the data. In his language, all "ink" (pixels in an electronic display) should be used to display the data, and he considers superfluous images antithetical to this principle. Second, the simple image should be able to show as much data as possible without overwhelming the user, an idea that will be explored in more detail later in this paper. Third, the "lie factor," when proportions and sizes of images do not correspond with the data they are

representing, should be minimized. For example, if one data dimension is twice as large as another, the resulting image should be twice the size (Tufte, 1983).
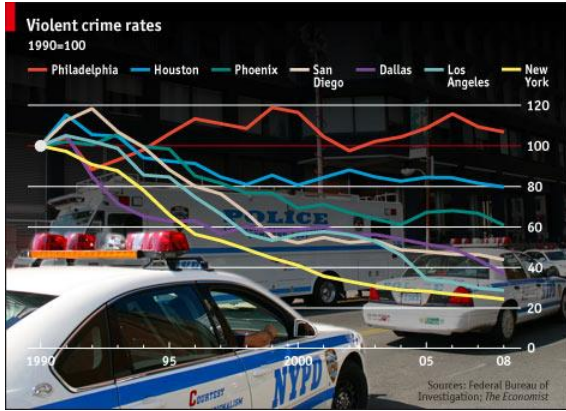
Figure 1. Bad visualization (source: SmashingMagazine).

For an example of some of these principles being violated, see figure 1. The distracting image of police cars in the background is a prime example of what Tufte would call "chart junk." Also, the title is inaccurate, making the resulting data confusing; this chart does not track crime rates, but rather tracks the percentage of *change* of crime rates spanning two decades – a subtle but important difference. From figure 1, one could reasonably conclude that New York City had the lowest 2008 crime rate of all of these cities, which is not true. In figure 1 the crime rate for each city in 1990 was used as the benchmark (set to 100); then, based on the increase or decrease of crime in the ensuing 18 years, the line goes up or down. Of course, the crime rate of all of these cities was not equal in 1990, so this chart's "lie factor" is apparent, as the images do not correspond with reality.

With the Tufte principles in mind and with an understanding of what can go wrong if we ignore them, a larger story can be told with the graphics created from our data. Four questions can guide those making the decision to create or evaluate graphic imagery to tell this story. These questions are as follows: (1) Which elements of the data should be highlighted? (2) How can these elements be best represented? (3) How many dimensions of the data can/should be correlated? (4) Can users interact with the graphic? Answering these questions will allow the next steps of the process to organically materialize.
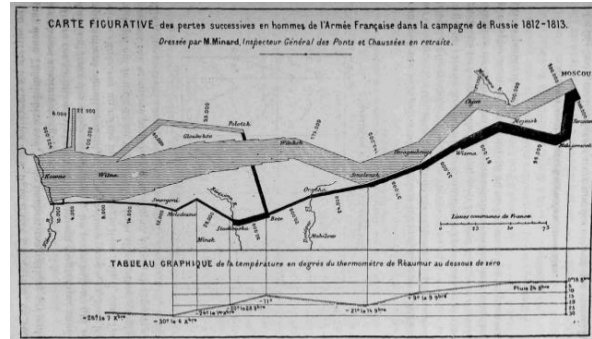
Figure 2. Napoleon's March to Moscow (Marey, 1878).

Edward Tufte's favorite example of combining perceptual dimensions is *Napoleon's March to Moscow* by Charles Joseph Minard (Figure 2). This image highlights five distinct elements in a simple, uncluttered image—namely, the size of Napoleon's army (the width of the streams), the direction in which they were marching (the color of the streams), temperature and time (line graph at bottom), and their geographical locations (position of the line at a given point). With a single static image, an entire narrative has been told, down to specific details. One potential improvement could be a user interaction element, which of course was not available in 1869 when this image was designed.
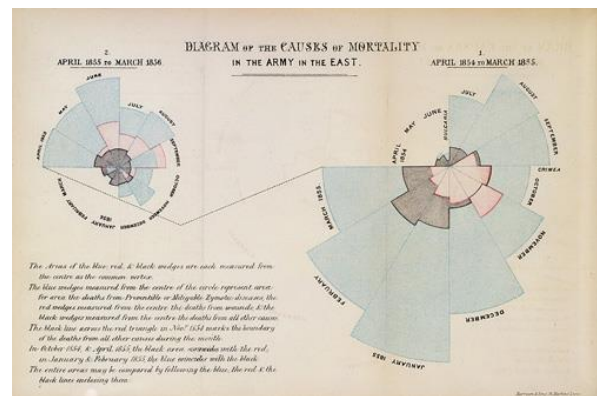
Figure 3. Diagram of the causes of mortality in the army in the east (Public Domain)

Florence Nightingale provides a second example of imagery being used for practical purposes, as she designed the above to petition for better health conditions for soldiers in the Crimean War. While presenting numbers and data are excellent ways to support an argument, visualizations like these allow one to show the data in a way that cannot be ignored. Nightingale's *Diagram of the causes of mortality in the army in the east* (Figure 3) showed that most of the British soldiers who died during the Crimean War died of sickness rather than battle wounds or other causes. It also showed that the death rate was significantly higher in the first year of the war, before Sanitary Commissioners arrived in March 1855 to improve hygiene in the camps and hospitals.

With this theoretical foundation established, it is an aim of the Center of Alcohol Studies Library to apply the practice of visualizing data with an ongoing research interest – namely, the quantification of scholarly reputation. As more data about scholarly reputation becomes available, many platforms have begun to use visualization tools to analyze and simplify the data for a wider audience. Reputation can be applied to individual scholars, their affiliated institutions, the journals in which they publish, or even their individual works. This paper will provide some analysis of tools that are used to display this concept, which is an abstract term that can be defined using several criteria.

Part 1 - How to define "scholarly reputation"?

Reputation is a fluid term that means a variety of things, depending on context. Bornmann and Marx (2012) provide what they call the "Anna Karenina Principle," in which they posit that successful scientists are much like Tolstoy's idea of happy families in that they are all alike in having filled the three prerequisites of publication, citations, and new scientific discoveries. On the contrary, each unsuccessful scientist is *uniquely*

unsuccessful, in that they fall short of meeting one or more of these prerequisites in various ways. In order to establish a positive reputation, one must meet specific established and widely accepted criteria in terms of publishing, citations, and discoveries.
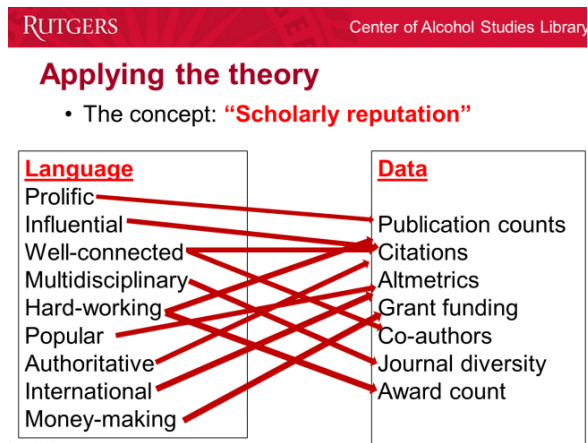
Figure 4. Scholarly reputation depicted using language and data

For the purposes of this paper, these three criteria will be combined, since landmark discoveries are assumed to be well-represented in terms of publishing and citations. In a general sense, this paper's definition of scholarly reputation is similar to Bornmann and Marx, in that it is defined as the output, impact, and activity of scholars, the venues in which they publish, and in their individual works. This paper purposefully broadens the Bornmann and Marx definition because part of understanding how reputation is best visualized is to understand how particular tools and applications *define* what is important. One tool might choose to focus exclusively on pure quantity of academic output, while another is more interested in the quality of that output, and a third focuses on the way the output is disseminated. None of these definitions are right or wrong, per se. Instead, they each focus on a particular aspect of academia, which is why this report is both a critical review as well as an idea board for one all-encompassing "scholarly reputation" tool that

selects and uses the best and most representative aspects of scholarship as it is understood in the field of information science and beyond.

Part 2 - Scholarly Impact (Traditional Measures)

a. Introduction

Measurement and quantification of academic production is tied to a few traditional measures. Typically, publication in an academic journal signifies some *new* contribution to whatever field one is publishing in, so perhaps the simplest way of measuring one's academic credentials is in terms of pure quantity of published research. If one researcher has 150 publications to another's 15, then simple math dictates that the former has been ten times more productive than the latter. The simplest visual accompaniment of this would be the length of the publication section on one's Curriculum Vitae, which can be found on web faculty directories, personal web pages, and in any number of employers' filing cabinets (round or otherwise). Slightly more sophisticated visualizations of this measure are usually

Figure 5. A sampling of traditional scholarly impact visualizations

presented as a simple line graph or bar chart, such as in the case of Scopus, Web of Science, Microsoft Academic Search, and the browser add-on "Scholarometer," all of which show the year-by-year output of specific authors. Beyond simple tallying, documents can further be broken down, such as by affiliated institution, publication title, publication type, or subject area. Because of these extra breakdowns, some applications have several charts that show some more qualitative evaluations of a researcher's output. Color-coded pie charts (Scopus) and bar charts (Web of Science, Scholarometer) are typically used in these cases. Some applications are simply static charts that do not allow for any user interaction, while others offer details-on-demand when hovered over. Beyond that, there is not much more to visualizations showing total citations.

The next level of measuring academic impact is by tracking citation data. If a publication really is offering something new to the collective bank of knowledge, it will likely be useful in further research on a similar topic, and it would follow that the publication will be cited accordingly. Traditionally, citation analysis has been the preferred method of quantifying a researcher's influence. This leads to such measures as total citation count, citation average, the h-index (a metric developed in 2005 by Jorge Hirsch in which an author has published *h* articles with *h* number of citations) (Hirsch, 2005), the hs-index (in which the h-index data are normalized for comparison across disciplines), and others. Luckily, citation data is abundant and has been compiled and analyzed since as early as the 1960s (Sher & Garfield, 1965).

b. Scopus Author Profiles

Scopus is a large database of citation information and article abstracts dating back to 1970. Using their large data set, they have created a built-in author evaluation tool that allows one to view an author's output in several respects. On the author's overview page, some of the main evaluative measures
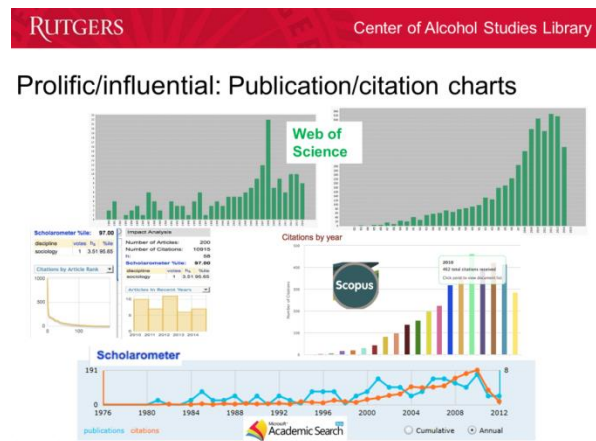
are displayed in a table underneath the name and affiliation, including total documents, total citations, h-index, number of co-authors, and subject areas. On the right hand side is a bar graph with an overlaid line chart, which visualizes the amount of documents published and citations received per year. Because there are two charts showing potentially related, yet entirely distinct measures, there are two separate y-axes that measure the same length. The x-axis is a simple chronology of years. There is some user interaction involved in this chart, as all of the bars in the bar graph (representing a single year's worth of publications) and all of the plot points on the line chart (representing a single year's worth of citations) are hoverable, showing total numbers in a pop-up window, and clickable, which leads the user to a separate page listing either the documents published in that year, or a list of the articles that cited the author in that year.

Scopus offers further visualizations that delve a bit deeper into the author's total scholarly impact. A link to "Analyze Author Output" leads to a series of charts, one of which is a pie chart that breaks down the author's total work by the journal in which he or she published, with each segment of the pie tagged with a percentage, and when hovered over, leads to a pop-up information window that can be clicked for the list of publications. A similar chart breaks down the publications by subject area. Another is a donut-shaped pie chart that breaks down documents by type (e.g., journal article, editorial, conference paper, etc.), which offers the same information upon hover and click. Finally, the h-index is visualized in a unique way, showing a shaded descending line graph that depicts the total number of citations per document (again hoverable and clickable), ordered from most to least cited, with a line emerging from the nexus of the graph to intersect with the line chart at a point that represents the author's h-index. This is a great example of graphics being used to make complex metrics understandable using basic features.

c. **Microsoft Academic Search Author Page**

This application offers a simple double line chart that contrasts the number of an author's publications with the number of his or her citations. The chart uses color to distinguish the two lines (citations in orange, publications in blue), and a circular plot point on the individual lines mark each year. User interaction is very limited, as the graph is mostly static, save for the ability to switch between *Cumulative* and *Annual* radio buttons. The *Cumulative* button shows a chart with the y-axis ranging from zero to the total amount of citations the author has received. Because the line chart is cumulative, both the citation and publication lines are constantly increasing. Secondly, because citation counts tend to far outnumber the number of publications an author has, the line for the latter ends up being almost completely horizontal and clinging to the bottom of the chart, which could be seen as having a significant "lie factor" and misrepresenting one's output – though it is interesting to see when the two lines begin to uncouple and the citation counts begin to separate from publication counts, as this may be considered a crucial moment in a researcher's career. A slightly more representative chart is provided when clicking the *Annual* button, as it utilizes two separate y-axes, with citations marked on the left-hand side (ranging from zero to the most citations an author received in a single year) and publications on the right-hand side (ranging again from zero to the most publications produced in a single year), again using two color-coded line charts. Because of the dual y-axis ranges, comparisons can be more easily made between the years in which the researcher is more or less productive and years in which the researcher is cited more or less often. A second interactive feature is the ability to hover over any given plot point and see the exact number and year that has been plotted. A potential improvement in this case could be to make these plot points clickable, leading to further information, such as a list of publications or citations from that year. A

second criticism is the fact that charts end in the year 2012, indicating that this tool has since been discontinued.

d. Web of Science Core Collection Citation Report *[Subscription only]*

Web of Science is an enormous database of publication and citation information, spanning nearly all disciplinary fields of academia. The particular application focused on here is its Citation Report generator, in which one can create a report on a collection of publications. Theoretically, any group of publications can be collected and analyzed, but for our purposes, there is a somewhat roundabout way to focus on a single author. First, the user must search by the author's name. Because of the issues with potential ambiguity in names, the best way to zero in on the correct author is to select a known publication, and then click on the author's name on the ensuing article's record page, which will lead to something called *Distinct Author Record Sets*. This shows all of the potential names and affiliations that might match the correct author, from which the user can select one or more names. Once selected, the upper-right hand corner of the page offers a *Create Citation Report* link, which leads to two distinct bar graphs – one showing the number of published items in each year, and the other showing the number of citations in each year – next to a list of relevant statistics, such as the number of results (read: articles) found, the total number of citations (both with and without self-citations), the total number of citing articles (again, both with and without self-citations), the average citations per item, and the author's h-index. Unfortunately, outside of the ability to view a more expansive chart showing all years (by default, the charts display only the past 20 years), there is no user interaction available, as the graphs are simply static jpeg images.

Something unique about this tool is the ability to break the collected articles down by sixteen distinct categories using the *Analyze Results* link. Some of these categories include Author, Country, Editor, Funding Agencies, Document Type, Affiliated Organization, and Research Area. The results are offered in a table with a sparkline-like (Tufte, 2006) bar chart that compares the percentages. This is a useful and interesting application, but much like in the case of the Citation Reports, the resulting display cannot be manipulated by the user.

e. Google Scholar Scholarometer

The Scholarometer is a plugin for the Firefox and Chrome browsers that allows a user to search for an author by Google Scholar ID, Name, Group, or with advanced filtering methods. To search by name, the user must tag at least one discipline that he thinks the researcher specializes in, in order to crowdsource relevant tags for individual authors. Once selected, an author's works are displayed in table format, organized by citation totals. On the upper-right hand side of the page, in another table, is the *Impact Analysis* of the author, with statistics for Number of Articles, Number of Citations, h-index, and Scholarometer percentile, as well as the hs index, for each discipline. Underneath this table is the only true visual display of information, showing a simple, static png file with a line chart offering total citations on the y-axis and article rank (from highest to lowest) on the x-axis, so every resulting chart will be a descending line at various depths. Also available via pull-down menu is a bar graph that shows the amount of articles the author has published in each of the past five years. Both of these visualizations are simple, supplementary items that can be found in more detail and with more potential for user manipulation in the other analyzed applications in this cluster. One other visualization offered by the Scholarometer that deals with traditional scholarly impact is the ability to compare the top authors in any given discipline by h-index or by hs-index, again using bar charts (length) to visualize the comparisons.

Part 3 – Scholarly Impact (Academic Networks)

a. Introduction

While summing up, averaging, and displaying citation data as specific metrics on traditional charts is a perfectly reasonable way to display one's scholarly impact, perhaps a more visually appealing way of displaying impact is with the use of academic *network mapping*, which is the most abundant type of all the tools that have been evaluated. Citation analysis, as mentioned, has been around for quite a while, and data is constantly being collected. Because the data set is large and ever-expanding, mapping citation or co-author chains can simplify and allow a user to see just how interconnected an individual scholar, a group of scholars, or individual works can be, or, conversely, who and what is more fringe and less connected to the general conversation. Typically, these networks are shown as a web of interconnected authors or works; but as we will see, there are several ways of displaying this data that can offer immediate and abundant information about how scholarly reputation is connected.

b. VOSviewer

Source: vosviewer.com

The VOSviewer is a highly sophisticated visualization tool that can be used to map not only author networks, but also those of disciplines, journals, individual articles, and even keywords. The approach taken in this application is to combine traditional mapping techniques with clustering techniques, which use color-coding, proximity, and size to organize the data points being presented (van Eck et al., 2010). The resulting examples of maps offer color-coded clusters that are hoverable but not clickable. A benefit of this tool is that it is not tied to any particular database like the Scopus/Web of Science/Microsoft Academic Search tools analyzed above, so theoretically any data can be imported and visualized, if cleaned up and presented properly. Another useful aspect is the ability to switch views, ranging from the default cluster model, to a heatmap (called "density view"), or scatterplot view. One drawback to this tool, based on some of the examples provided, is that a truly semantic zoom is missing; details are merely labeled on each plot point and displayed underneath the visualization and do not change as a user zooms in on the map. Further, it is difficult to understand what the color, the size of the plot points, or even the proximity of the plot points indicates, as each requires the user to look outside of the visualization for a key. This contributes to a non-intuitive experience, especially for the novice user. Outside of the ability to hover over plot points to see what each represents, and to zoom using the scroll wheel or navigational arrows, user manipulation is fairly limited.

c. CiteSpace

CiteSpace is a more focused networking tool that deals exclusively with citation mapping. Circles containing many multi-colored bands, with each color representing a specific year, represent an author's individual publications, with each band's width representing the number of times the work was cited in that year. Multi-colored tethers represent the year a work was first cited and

tie the individual circles together. As the network grows, clustering techniques are used to organize publications by theme, and the most prominent themes are labelled, with the size of the font corresponding to the size of the clustered theme. This tool is similar to the VOSviewer in that data can be imported into it, but it improves upon VOSviewer's less dynamic nature by allowing for more user manipulation, such as the ability to right-click a node and see its data history in greater detail, or allowing the user to switch to a timeline view as opposed to a clustered one (Chen, 2014).

d. vxInsight

The vxInsight uses a "landscape" visualization, which represents the activity of a scientific domain within the landscape's peaks and valleys. The higher the peak is on the graphic, the more active its representative domain. Boyack, Wylie, and Davidson (2001) used this tool to find potential competitors and partners in a corporate context. Yet this organizational method could easily be used to find the most active researchers within a specific academic discipline, using either citation analysis or co-authorship as a unit of measure. Similar to the previously analyzed tools, this tool allows for imported data and uses a clustering algorithm to bunch the like elements. Further, a time element is included, allowing the user to see how the valleys and peaks grow, retreat, or move, providing a visual demonstration of the abstract and conceptual idea of emerging trends in a given discipline. By adding depth and motion to the color, size, and proximity dimensions explored in the previous tools, this tool allows for a more easily understandable final product.

e. HistCite

HistCite was developed by Eugene Garfield, considered by many to be the father of citation analysis. His product offers a simple, clean view of how publications are tied to one another using citation analysis. The individual publications are represented by circles, sized according to their Citation Score, calculated by number of times cited. The global citation score (GCS) is the overall number of citations, while the local citation score (LCS) is relative only to the collection being mapped. Each circle is given a unique number (the node number), which allows for easier identification and the ability to seek further information in the complementing table. Hoverability is supported via a mouseover that brings up abbreviated data about the selected publication. The y-axis is a timeline, and circles are connected by arrows, showing the direction of the citations. Also available is the ability to label nodes with author names to decrease abstraction using dynamic labeling.

f. CitNetExplorer

CitNetExplorer follows up on HistCite, by offering a more direct approach to showing author connections, representing publications as simple circles connected by lines on a 2-dimensional plane which, according to van Eck and Waltman (2014), "can handle much larger citation networks, possibly including millions of publications and citation relations" (p. 803). Created by the same team that designed the VOSviewer tool, key visualization elements are present, such as direct labelling, the ability to zoom and pan, and a specific focus on drilling down into a massive network to find more granular detail on specific sub-domains. Of particular interest to this paper is the ability to "study the publication oeuvre of a researcher" (van Eck & Waltman, 2014, p.805), by seeing the specific works he or she references at different points in his or her career, as well as the works that are in turn influenced by his or her work. Similar to the HistCite tool, a benefit of this visualization lies in its simplicity. Even a novice user can immediately understand the vertical timeline, the directly labelled plot points, and the clean connecting lines. Some manipulation is

apparent, as specific works can be "marked," changing them from circles to squares, and networks can be narrowed or expanded, though not always within the visualization itself. This is a potential area for improvement, as presently the narrowing or expanding of a network is completed by changing maximum distance settings in a dialog box. Finally, clustering of the individual nodes is available, though again controlled via a dialog box, which complicates matters a bit.

g. Microsoft Academic Search

Microsoft Academic Search, already discussed in terms of its bibliometric aspects, also offers visualizations depicting author networks. Two types of network mapping are offered. First, from an author's profile page, one can select the Co-author Path, which ties authors to one another based on works in which they were co-authors. All authors with a profile picture are represented by a circle containing that picture. A generic silhouette represents authors without a profile picture, but all nodes are dynamically labelled with researcher names. The tool provides the user a simple ability to click and drag faces around in order to isolate and analyze connections in whichever way the user may see fit. When the connecting lines are hovered upon, a number opens up, indicating how many publications the two authors worked on together. Clicking on this number, in turn, triggers a list of those publications. When the author nodes are clicked on, the graph dynamically changes to move said author to the center of the graph and to depict that author's connections. The same principles are used in the Citation Graph, which can be accessed from individual article records in Academic Search, the main difference being that the nodes appearing on the map are the top 44 authors, based on total citations. The connections the user can view are the number (when hovered) and list (when clicked) of citing publications. Finally, there is the Paper Citation Graph, which adheres to the same principles as the first two, but at the article level.

h. Web of Science Citation Maps [Subscription only]

Web of Science is the oldest and perhaps most trusted citation analysis software available. Given their incredibly large data set, a user can view a citation map of any article in its database in either the "cited" or "was cited by" categories for up to two generations in either direction. Each article is represented by a simple color-coded square with a single line tethering the root node to all of the others in a 3-dimensional fanned-out display. The colors of the squares do not seem to represent anything, but simply provide a contrast to the many other articles stacked among one another, so that each individually stands out. If there are too many articles to fit onto the dedicated space for the visualization, the articles collapse and only the tethered lines are shown, unless the user drags the graphic in such a way as to view them. The dragging and clicking inside of the chart is intuitive and can be used to isolate specific articles, which when hovered upon offer pop ups with their bibliographical information. Another useful feature is the time slider, which allows the user to see the rate of citations on a year-by-year basis. Because the start year is fixed, one can only see citations from the article's publication year up to a chosen year and cannot select particular "slices" of time starting in the middle. Also, the time slider forces the user to click the *Re-create map* button for it to generate a map of the newly selected time span, which could be improved upon with a more fluid animation that would allow the user to see the changes in a more dynamic way. Another helpful aspect of this tool is the ability to click on one of the listed publications in the table below the visualization, which highlights the publication representation with a thick red border and allows the user to easily find it. When double-clicked, the full bibliographic information is displayed in the lower-right hand corner with a link to the record in Web of Science.

Part 4 – Total Impact

a. Introduction

While reputation has traditionally been represented by publications, citations, and related metrics, an emerging field has come into the fold in the area of what this paper calls "Total Impact" measures. These measures typically build on the pioneering work whose visualizations were analyzed in parts 1 and 2 of this paper, but expand further to include popular products, data sets, software, non-traditional dissemination methods, and other ways of tracking scientific impact. The first two tools analyzed, Altmetric and ImpactStory, collect outside data and present it in a way that offers a new perspective on scholarly output. The latter two tools, Research Gate RG Score and Academia.edu Analytics, are closer to social media profiles aimed at academics, each with their own measures and display functions to highlight individuals' influence. The visualization tools include maps, graphs, charts, and badges, each offering unique usage of colors, position, and other perceptual coding tactics to represent an author or the work produced.

b. **Altmetric**

Altmetric is based on the belief or assumption that in our current world of constantly flowing digital information, traditional publications and formal citations form only one part of the much larger general conversation. Its second underlying assumption is that evaluation of articles should have less focus on the journal in which they are published, and more on the amount of attention they receive independent of said journal. Further, there is a push to move away from numbers that might produce a "false sense of precision" (Davis, 2013) and instead aim for a more qualitative evaluation. An example is the Journal Impact Factor metric, a journal-level metric discussed in greater detail below, and not considered to be granular enough to have any significant

bearing on any single article contained within. Instead, the Altmetric platform values dissemination in all its forms, including in tweets, shares in citation management software such as Mendeley, and references from popular journals and/or blogs. Its visual element comes in the form of an embeddable badge that an author can place on an article's hosting page. This badge uses bands of color to proportionately display the types of shares an article receives, e.g., royal blue representing tweets, red representing news outlets, yellow representing science blogs, and so on. The number in the center is less transparent, deriving from a weighted ranking system of these shares and references based on the components "bias, promiscuity, and reach," formulated by an algorithm that Altmetric has not disclosed (Davis, 2013). The badge's use of color and proportionality is helpful to a user. Areas for improvement, however, include the capacity to hover for more detail on each of the colored bands, have the weights of the measures lie in the hands of the users to more accurately compare badge scores, and offer links to publication records or source data from which the badge and its metric was calculated.

c. **ImpactStory**

ImpactStory offers similar information as Altmetric, again utilizing shares from outside of scholarly circles. Its focus is on displaying the dissemination of both data sets and completed works published in open places such as Public Library of Science (PLOS), GitHub, and ArXiv. An author's default profile page contains a list of selected works, with icons indicating impact, separated by whether those works are scholarly or popular. Scholarly works are presented in blue and include discussions of citations collected through Scopus, saves in Mendeley, and views in open networks such as in pdf format in PLOS or on figshare. Popular works are shown in green, indicating number of times discussed on twitter, viewed on

ImpactStory itself or in html format on its hosting page, and cited in Wikipedia. An addendum to each icon with a number of recent additions from the past week is also displayed. Each icon can be hovered over for detailed information about its sources, and clicked on to go to the publication's own ImpactStory record. A second visualization comes in the form of a geographical map with each country ranging from lighter to darker shades of blue, indicating an author's regional impact. When hovered over, the number of shares, views, and tweets is displayed in a pop up box, and when a country is clicked on, the publications with activity in that country are displayed in a list.

d. ResearchGate RG Score

ResearchGate is similar to ImpactStory in that it consists of individual profile pages and compiles its own site-centric data such as download counts and views. It displays scholarly reputation by combining an author's output with how others interact with that output, coupled with the statistics that ResearchGate keeps for its individual users. One of the metrics they use is called "RG Score," which is "a metric that measures scientific reputation based on how all of your research is received by your peers" (RG Score, 2014). By including contributions to one's profile, interactions with others, and negative results and data sets, ResearchGate aims to go beyond published work and instead use all scientific activity when calculating how a researcher earns a reputation. To visualize this, the RG Score page includes a pie chart of scientific activity, breaking down the author's output by publication, questions asked, questions answered, and number of followers by percentage of total activity. The green circle in the screenshot above is a somewhat poor example of this, as it is a chart that displays 100% publication. There is also a bar chart showing the author's RG Score over time, with details available upon hover, and a tile bar that compares the author's score against all of ResearchGate's members.

Finally, on the statistics page, line charts show recent view and download activities of the author's works.

e. Academia.edu Analytics

Academia.edu is another scholarly social media site with a focus on sharing research. Their theory is that with the move to digital distribution, scientific content becomes more easily measureable, and hence they launched an Analytics function in 2012. The key visuals are line charts of profile views, document views, and document downloads, along with donut-shaped pie charts showing where web traffic is coming from and which keywords led users to the author's profile. Much like ResearchGate, Academia.edu counts data sets, code, videos, and other media as equal to published journal articles, so this wider distribution of scientific knowledge is acknowledged. All charts are hoverable, giving precise information at each plot point. Finally, the Country View feature is reminiscent of ImpactStory, with lighter to deeper shades of colors on the map's individual countries representing the relative amount of activity in a geographical sense.

f. Kardashian Index

Finally, perhaps as a counter-measure to these more general metrics, there is the Kardashian Index, which measures the "discrepancy between a scientist's social media profile and publication record based on the direct comparison of numbers of citations and Twitter followers" (Hall, 2014). While a bit frivolous, its inclusion is offered to show that reputation at its essence is a matter of perspective and that one should view these visualizations with a critical eye, especially in regard to the data that is being used to create them. The visual is a prototype of a simple scatterplot graph that charts citation counts against number of Twitter followers and finds that typically the more highly cited authors tend to have a proportional number of followers. The outliers – those who have a

larger reputation than their output might dictate – are those whom Hall dubs "Science Kardashians" (Hall, 2014).

Part 5 – Journal Level Metrics

a. Introduction

To this point we have been concerned mostly with metrics at the researcher level or article level. It is also worthwhile to look at tools that measure reputation at the journal level, specifically in terms of Journal Impact Factor, the first prominently used bibliometric (Garfield, 1999), and its many descendants. Two tools—Journal Citation Reports and SCImago Journal & Country Rank—have been included in this cluster, and each provides information that can be used to compare journals in like fields. As might be expected, visualizations tend to be mostly charts and graphs.

b. Journal Citation Reports [Subscription]

Journal Citation Reports, developed by ISI Web of Knowledge, offers an abundant amount of data on individual journals, such as Journal Impact Factor (average citations per article from the past two years), 5-Year Impact Factor, and Journal Cited Half-Life (how many years to account for 50% of the citations received by the journal). Most data is presented in tabular format; the few resulting visualizations are stacked bar graphs following a yearly chronology, with a shaded background depicting the Half-Life. These graphs offer a bit more information density than a typical bar graph, with the stacked colors differentiating between self-citations and other citations and a slightly lighter shade of blue indicating the data used for the journal's current Impact Factor. There are separate graphs for citations *in* the journal and citations *of* the journal, with a third, more simplified bar graph showing the journal's Impact Factor from the previous five years. Since none of these static, jpeg image graphs offer user manipulation, a potential

area for improvement would be to include hover effects, more details-on-demand, and a time slider to see how the metrics have changed over the years. Further, the user must navigate to each journal's record to see these charts, so the ability to compare journals side-by-side is not available.

c. SCImago Journal & Country Rank (SJR)

SJR offers several graphical displays of its data, including line charts comparing their proprietary metric SJR indicator to Web of Knowledge's Journal Impact Factor and comparisons of external citations to self-citations at the journal and article-levels, and bar graphs displaying international collaboration, non-citable documents, and cited vs. uncited documents. On the whole, these graphics are much more varied and stronger than those offered by JCR.

As noted, the visualizations in these tools tend to be the tried-and-true stacked line charts and bar graphs, though they supplement charts with detailed explanations of each metric underneath each chart. Users can hover for the exact numbers at any given plot point (separated by year), or in the stacked charts/graphs they can hover over each individual color for the specific numbers in each portion of the stack. This is the extent of the manipulation allowed to users. Position, size, and color are the perceptual elements used, and data-ink ratio is high, without a lot of superfluous graphics or images. The lie factor seems to be low, with all graphs starting at zero and all measures seemingly proportional to the numbers they represent.

Part 6 – Grant Funding

a. Introduction

While publication and their dissemination seem to be the main criteria for scholarly reputation, grants are where much of the funding for these studies comes from, and hence a measure of one's ability to secure

research grants can factor into their ability to ensure an institution remains funded to continue research into the future. There are two tools analyzed here that visualize this information, both dealing with government grants, since that information is open to the public.

b. Grantome

Grantome is a large database of grant funding information culled from several sources. Its visualizations are not readily apparent and one must search using Grantome's specialized search engine in order to see a set of results, underneath which charts and graphs are offered to aid in understanding the search results. This engine can be manipulated to offer visuals on any field that one searches in, including author, title, institution, study section, funder, grant type, and more. While researchers do not have individual profile pages, it is not difficult to search in a way to disambiguate a name from others (such as by providing an institution or topic in which that researcher specializes) and then analyze the results. The strength of this seemingly simple tool lies in its customization. For example, the y-axis offers a drop down menu from which the user can select total grants, total cost of grants, or average cost of grants. The x-axis can be assigned to funder, year, author, institution, grant type, institute, or study section. If the user would like two of these elements represented, there is a "Group by" option, which can color-code the data on any of these elements, and the user can select years, authors, institutions, etc. to compare to one another. Further, the data can be displayed as a bar chart, scatterplot, line chart, line with focus chart, or stacked area chart. Though the user is limited to using the data offered by its own database, thanks to these options variations between the input data (based on search terms) and output visualizations are essentially limitless.

c. NIH RePORTER

The National Institutes of Health provide a comprehensive database of all of its grants, which, according to its website, satisfies a "legislative mandate included in the NIH Reform Act of 2006 to provide the public with an electronic system to search NIH research projects using a variety of codes, including public health area of interest, and provide information on publications and patents resulting from NIH-funded research" (NIH RePORTeR, 2014). Much like in the case of Grantome, its visual displays are based on the data within its search results. Given its highly faceted query form, which can be broken down by name, organization, year, department, type, or any number of project details, the results can again be customized at a highly granular level from the results page in a tab called "Data & Visualize." From this tab, there are two sub-headings, one of which provides traditional charts, with columns, bars, and pie charts available. These can be summarized by administering institute, year, activity code, state, and more. Further, the charts can be grouped by project, funding, or project publications. While the user cannot manipulate the charts themselves, a table is provided with links that lead to lists of detailed records that have been compiled to form the data in each. While these charts are helpful, a more interactive chart is available via the "Circles" subheading, still in its beta phase. This helpful visualization offers a subdivided pie chart showing a hierarchy of the data and allowing for many aspects to be represented within a single image. Each slice can be hovered over for more information, clicked on to highlight its topic in the center of the circle, and double-clicked to have that portion blown up disproportionately to view the details of its subordinate features. Finally, there is a mapping feature, which shows locations of projects on a dynamic Google Map with all of its usual methods for manipulation and from which further information can be found by clicking on the map's plot points.

Unfortunately, the NIHMaps function, which provided a color-coded, cluster-based visualization of grants similar to some of the mapping tools analyzed in Part 3, is no longer in service.

Part 7 – Toward an All-Encompassing Prototype

Having spent much time analyzing and interacting with these visualization tools, it seems to us that an all-encompassing tool would need to be incredibly diverse, utilizing a wide breadth of data, visual techniques, and interactivity. Because the definition of scholarly reputation is so general and the importance of its individual components can vary from user to user, the key to a useful tool lies in its customization. Secondly, because these metrics can become rather complicated even for those well versed in the subject, the ability to express these complex measures in natural language for the user is paramount. A third observation is that since data comes from several sources, there must be a way to either normalize data or give the user the data source option. Finally, perhaps the greatest challenge will be to display such abundant and complex information in a simple and clean way the user can easily manipulate and understand.

References

Bornmann, L., & Marx, W. (2012). The Anna Karenina principle: A way of thinking about success in science. *Journal of the American Society for Information Science and Technology*, *63*, 2037–2051. doi: 10.1002/asi.22661

Boyack, K. W., Wylie, B. N., & Davidson, G. S. (2002). Domain visualization using VxInsight® for science and technology management. *Journal of the American Society for Information Science and Technology, 53*(9), 764-774.

Chen, C., Ibekwe-SanJuan, F., & Hou, J. (2010). The structure and dynamics of co-citation clusters: A multiple-perspective co-citation analysis. *Journal of the American Society for Information Science and Technology*, *61*(7), 1386-1409.

Chen, C. (2014). *The CiteSpace Manual* (Version 0.65). Retrieved from http://cluster.ischool.drexel.edu/~cchen/citespace/CiteSpaceManual.pdf

Davis, P. (2013, September 30). Visualizing article performance — Altmetrics searches for appropriate display. *The Scholarly Kitchen*. Retrieved from http://scholarlykitchen.sspnet.org/2013/09/30/visualizing-article-performance-altmetrics-searches-for-appropriate-display/

Garfield, E. (1999). Journal impact factor: A brief review. *Canadian Medical Association Journal*, *161*(8), 979-980.

Hall, N. (2014). The Kardashian index: A measure of discrepant social media profile for scientists. *Genome Biology*, 15(7), 424.

Hirsch, J. E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the United States of America*, *102*(46), 16569-16572.

Imagine a pie chart stomping on an infographic forever. (2010, May 10). *Smashing Magazine*. Retrieved from https://www.smashingmagazine.com/2010/05/imagine-a-pie-chart-stomping-on-an-infographic-forever/

Marey, E.-J., & Burndy Library. (1878). La méthode graphique dans les sciences expérimentales et particulièrement en physiologie et en médecine: par E. J. Marey. Paris: G. Masson. Retrieved from http://tinyurl.galegroup.com/tinyurl/oAoZX

NIH RePORTER. (2014). Retrieved from http://projectreporter.nih.gov/reporter.cfm

Piwowar, H. (2013). Altmetrics: Value all research products. *Nature, 493*(7431), 159.

RG Score. (2014). Retrieved from https://www.researchgate.net/publicprofile.RGScoreFAQ.html

Sher, I. H., & Garfield, E. (1965). New tools for improving and evaluating the effectiveness of research. In M.C. Yovits, D.M. Gilford, R.H. Wilcox, E. Staveley and H.D. Lemer (Eds.), *Research program effectiveness.* Proceedings of the conference sponsored by the Office of Naval Research (pp.135-146). New York: Gordon and Breach. Retrieved from

http://www.garfield.library.upenn.edu/papers/onrpaper.html

Tufte, E. (1983). *The visual display of quantitative information.* Cheshire, CT: Graphics Press.

Tufte, E. (2006). *Beautiful evidence*. Cheshire, CT: Graphics Press.

van Eck, N. J., Waltman, L., Dekker, R., & van den Berg, J. (2010). A comparison of two techniques for bibliometric mapping: Multidimensional scaling and VOS. *Journal of the American Society for Information Science and Technology, 61*(12), 2405-2416.

van Eck, N.J., & Waltman, L. (2014). CitNetExplorer: A new software tool for analyzing and visualizing citation networks. *Journal of Informetrics, 8*(4), 802-823.

Waltman, L., Van Eck, N. J., & Noyons, E. (2010). A unified approach to mapping and clustering of bibliometric networks. *Journal of Informetrics*, *4*(4), 629-635.

Contact the authors

William Bejarano, MLIS, MLER
Senior Information Specialist,
Rutgers Center of Alcohol Studies
607 Allison Rd.
Piscataway, NJ 08854 USA
Phone: 848-445-4442
bejarano@rutgers.edu

Judit Ward, PhD, MLIS
Director of Information Services,
Center of Alcohol Studies,
Rutgers, The State University of New Jersey
607 Allison Road
Piscataway, NJ 08854-8001 USA
Phone: 848-445-4442
jhajnal@rci.rutgers.edu

Short attention span theater: Instructional design for optimal learning

Meg Brunner

Alcohol & Drug Abuse Institute Library and Clearinghouse
University of Washington

The average human is only able to hold about 7 chunks of information at a time in their active ("working") memory, and if they're trying to do something with that information (organize it, compare it, evaluate it) rather than simply storing it away, they are only able to manage 2 or 3 tidbits at once. New information held in working memory, if not rehearsed, is typically lost within about 15-30 seconds. On the other hand, the capacity of long-term memory is essentially limitless. Understanding how the human brain takes in information, processes it, and stores it is key to developing effective trainings, especially those involving multi-media components or interactivity. This article will share what I've learned about effective "instructional design" principles as I worked with colleagues over the previous year to develop two different interactive online trainings, one about improving retention and engagement rates for clients in substance use disorder treatment and the other about medicinal cannabis and chronic pain (for clinicians), using the multimedia training development software Articulate Storyline.

Keywords

E-learning; Instructional design; Multimedia; Training; Cognitive theory

Conscientious instructional design is one of the most vital components of effective trainings, and never has it been more relevant than in the age of Internet-based education. Now that so much learning is done individually, delivered via technology and multi-media channels instead of in a more dynamic classroom or instructor/group environment, using good techniques in the

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development phase has become all the more important.

Instructional design theory is rooted in cognitive and behavioral psychology, relying in large part on how the brain takes in and processes information. The more a developer learns about the acquisition and retention of knowledge for a learner, the more efficient, effective, and appealing that education will be.

Over the last year or so, I have had the opportunity to work on two projects that involved the development of online, multi-media training modules. The first was related to a [Retention Toolkit](#) that the Alcohol & Drug Abuse Institute developed for a state agency looking to increase retention in outpatient treatment statewide; the second was a [two-part online training for physicians and other health care providers about medicinal cannabis](#). Never having designed anything like this before, I spent a great deal of time talking to an instructional design consultant for the cannabis project, and then combing through the research on instructional design concepts and best practices.

The field of instructional design is vast, but some of the basic concepts are fairly straight-forward and easy to apply not just to online training development but to any multi-media education, including conference presentations, webinars, and more. This article will provide an overview of some of those basics and best practices, as well as some explicit examples of good versus better instructional design.

Cognitive Load

A major component of instructional design is what is called "cognitive theory," or the theory of how a brain takes in, processes, and stores information. This is tied very closely to the terms "cognitive load" or "cognitive overload," which come up frequently in the research on instructional design theory. Cognitive overload is exactly what it sounds like: it's what happens when a human brain is presented with too much

information at the same time, effectively making it impossible for it to process much of anything at all.

Online, multi-media trainings are highly susceptible to cognitive overload because they typically employ such varied presentation techniques. Using both audio and visual components subjects the brain to a lot of input all at once; how you balance those inputs to facilitate retention of the learning task is key to successful design.

When taking in new information, the human brain's working or active, "conscious" memory is severely limited in both capacity and duration (Sorden, S. D., 2005). That is, working memory can only hold about six or seven chunks of information at any given time. Additionally, if you are processing that information (organizing it, comparing it, evaluating it, e.g.) rather than simply storing it, you're only able to manage two or three chunks at a time. New information held in working memory, if not rehearsed, is typically lost within about 15-30 seconds. The capacity of long-term memory, on the other hand, is essentially limitless.

That means the goal when trying to teach someone something new is to facilitate the transition of that something from working memory to long-term memory. Unfortunately, there are a lot of places where that transfer can go wrong.

Two important elements to keep in mind when trying to avoid overloading your learner are (1) the concept of "two channel" inputs for information and (2) the three types of cognitive demands in learning. By keeping both these components in mind as you develop your content, you can analyze how much and what kind of input the learner is being exposed to at any given moment, and juggle the various components to help mitigate some of the demands on their brain.

Two Channels

The human information-processing system has two major channels for information input: an auditory channel for

processing things you hear, and a visual channel for processing things you see (Mayer & Moreno, 2003).

Each of these two channels has a limited capacity; a learner can only take in so much with either their eyes or their ears at one time, and if one channel is being overloaded, they cease being able to take much in at all. Spreading input out over both channels is more effective than relying on either one alone (Mayer & Moreno, 2003). However, when designing a multi-media training where both audio and visual components are utilized, it's important to be conscious of how much information is being presented via each channel both individually and together – and, even more importantly, how well that information works together to present the necessary material. The more the audio and visual components are integrated to convey the same information, the easier it will be for the learner's brain to process and store that information. On the other hand, if the audio and visual components are divergent in content, neither one will end up being effectively retained.

Three Cognitive Demands

In addition to the two-channel concept, a good instructional designer must also keep in mind the three types of cognitive demands involved in learning: essential processing, incidental processing, and representation holding (Mayer & Moreno, 2003).

Essential processing refers to the procedures required for making sense of the important material – the "need to know" information. Of the three types of processing, this is the one most vital to learning. An example of such information would be a slide that just contains nothing but step-by-step instructions on how to accomplish a task.

Incidental processing refers to the processes that are not required for making sense of the presented material, but which are called upon by the design of the learning task itself. For example, picture our slide with simple step-by-step instructions, but now imagine background music accompanying it. While you may theorize that background music would help increase the learner's interest in the task, in reality the music is "incidental" to that task, and therefore is wasting a little bit of that limited cognitive processing space. That's not to say there is no place for background music or other engaging design elements, but where and how those are used is something that requires balance in terms of cognitive demands.

Representation holding, the last type of cognitive processing, refers to the processes required in holding a mental representation of something in working memory over time. For example, if we added to our presentation some images illustrating each step, but put those illustrations on a second slide, the learner would have to maintain a "representation" of the instructions from the first slide while looking at the second in order to make sense of those illustrations.

Reliance on representation holding, like incidental processing, isn't always preventable but should be avoided when possible. When it can't, a presenter should examine the balance of other cognitive demands in the task – the other processes (essential, incidental, or other representation demands) and the load on the learner's "two channels" – and see what else can be shifted to help compensate.

Keeping these two elements in mind, let's look at some specific examples of some common issues with trainings and what can be done to mitigate them.

Problem: Split Attention

Consider a slide that has step-by-step instructions on how to perform a task (in this example, how to use the Windows Snipping Tool, an application that lets you capture images from your computer screen), along with some basic, corresponding graphics.
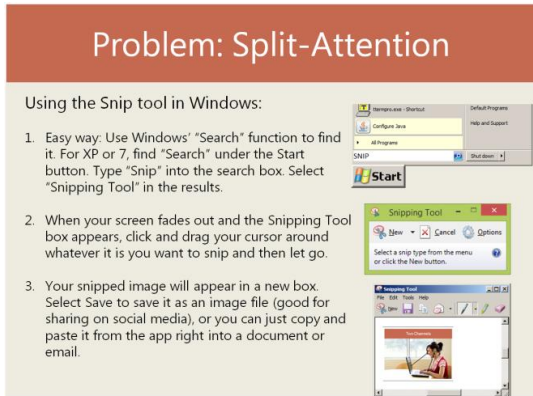
Fig 1. Step-by-step instructions with corresponding graphics, illustrating a "split-attention" problem.

While this is a fairly standard approach, this slide relies solely on a single channel of input (the eyes), and also requires that channel's attention to be split between the content on the left (text) and the content on the right (images). That makes two things for the visual channel to try to integrate, and nothing for the auditory.

Solution

Use both channels to spread the information being presented over two modalities instead of forcing the learner to integrate too much via one (Artino, A. R., 2008). Start by taking out the text and replacing it with audio narration of each step instead. Now the eyes only have to take in one element (images), while the ears take in the other (instructions). Now that the input has been spread over both channels, the brain is taking on a much more balanced load.

Problem: Too Much Information!

With our new slide, featuring only the three graphics for each of our three steps plus audio narration for the full content running in the background, we're one step closer to better instructional design, but we still need to further consider what's going on for the learner. There are three pictures to look at on this single slide, plus three separate pieces of instruction coming into their ears, forcing the

audience to attempt to match what they see with what they hear.

Solution

Break the content into smaller chunks. Instead of providing all three images and the full narration simultaneously, start with the first image on screen while the learner listens, then have the second image appear next to the first as the narration meets that step, finally following up with the third. This reduces cognitive load on the learner by presenting information in smaller parts that can be fully processed before the next segment appears (Mayer & Moreno, 2003).

Problem: STILL Too Much Information!

Even this, however, is still placing more of a burden on the learner's brain than necessary. Though every piece of information presented is essential to the overall learning task, some parts of the information are more relevant than others. Additionally, the information is coming all at once, with no time between steps for the learner to process what's been received.

Solution
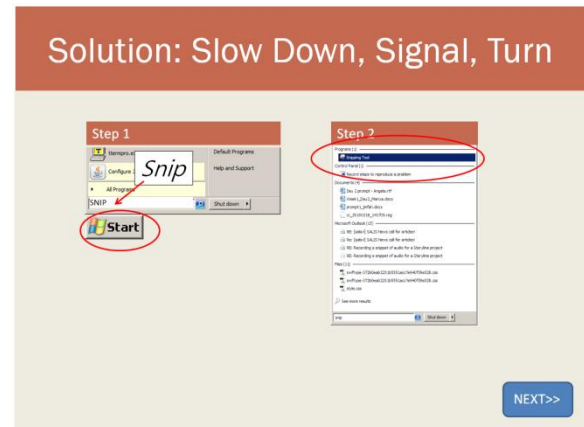
Fig 2. Break each step down further, adding signalling text and graphics to focus attention on the most relevant parts at each stage

Slow each step down and add signals to help the learner identify the most important elements. Instead of presenting all three steps

in a single slide, separate them into individual slides and, timed to the audio narration, highlight the most relevant elements of each step using text or graphics (arrows, circles, etc.). Allow the learner to move to the next step when ready (using a "next" button between slides, for example). By adding signals, the most critical parts of each step are emphasized for better retention. Allowing the learner to control the pace of the task reduces the risk of boredom for faster learners and the risk of being overwhelmed for slower ones. When adding additional visual elements to the slides, be sure to keep relevant things together visually in order to avoid the split attention problem illustrated in the original slide (the need for readers to move their eyes back and forth from the text on the left to the images on the right). Circling parts the learner should focus on helps keep their eyes trained on only the most relevant part of the slide for each step. Text signals should also be placed as closely to the corresponding images as possible.
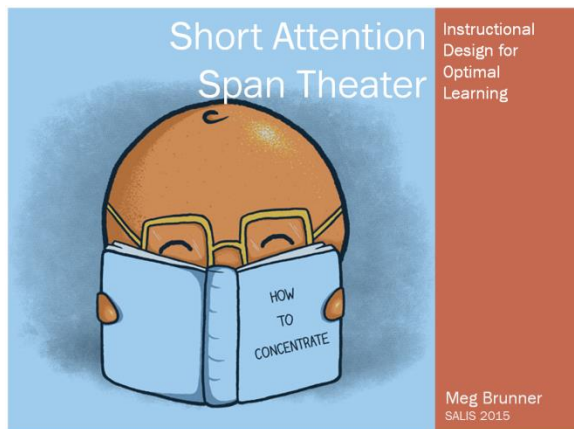
Fig 3. Take the online, multi-media demo of the Snipping Tool training developed for the SALIS Conference using e-learning software Articulate Storyline.

Now that we've broken the task into both audio and visual elements, separated each step, added signaling to direct the learner's attention to the most important cues, and added learner-directed pacing, we have improved this training dramatically, easing the cognitive burden on our learner while still keeping the education engaging. By carefully dissecting the task and examining the way the learner's brain would process each component, we have been able to simplify each step, making it much more likely that our student will retain and process what they are seeing and hearing. For an example of how you could take this training another step further, take a look at the final module developed to illustrate these concepts, created using the e-learning software [Articulate Storyline]. (Please note that this demo was prepared for use in the original presentation and does include some extraneous elements for fun that would be removed for a more "official" training!)

Summary

Examining the way the human brain processes information provides several useful models for effective instructional design. As technology continues to improve and increasing numbers of individuals turn to the Internet for education outside of the classroom setting, instructional designers must employ the most effective, efficient ways to present information. Though it can be difficult to resist the inclusion of flashy animation and other special effects, in most cases these elements prove more distracting than useful. Good computer-based instructional design employs a balance of multi-media elements and relies less on the capabilities of the technology at hand, and more on the capabilities of the learner's mind.

References

Artino, A. R. Jr. (2008). Cognitive load theory and the role of learner experience: An abbreviated review for educational practitioners. *AACE Journal, 16*(4), 425-439.

Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist, 38*(1), 43-52.

Sorden, S. D. (2005). A cognitive approach to instructional design for multimedia learning. *Informing Science Journal, 8*, 263-279.

Contact the authors

Meg Brunner, MLIS
Web Information Specialist
Librarian
Alcohol and Drug Abuse Institute (ADAI)
University of Washington
1107 NE 45th St., Suite 120
Seattle, WA 98105-4631
Phone: 206-543-0937
Fax: 206-543-5473
meganw@u.washington.edu

Facilitating the sharing of pools and seas of knowledge through channeling information more effectively

Christine Goodair

Programmes Manager (Substance Misuse)
St George's University of London

This paper covers the presentation 'Facilitating the sharing of pools and of knowledge through channeling information more effectively' by exploring issues relating to sharing knowledge and expertise across multidisciplinary projects. An overview of each project is provided, with a description of their approach to sharing knowledge, with the aim of drawing out key lessons that can be applied in a variety of settings. The projects include two Pan-European Projects: ELISAD Gateway and EU-Madness; and a UK based project, Substance Misuse in the Undergraduate Medical Curriculum.

Keywords

Communication; Information sharing

Setting the scene

The term "information society" or "information age" has been with us since the 1990s. In February 1995 at a European G7 Ministerial Conference on the information society, the Chair concluded, "Progress in information technologies and communication is changing the way we live: how we work and do business, how we educate our children, study and do research, train ourselves, and how we are entertained. The information society is not only affecting the way people interact but it is also requiring the traditional organizational structures to be more flexible, more participatory and more decentralized" (European Commission, 1995).

Since then we have seen the continuing development of the Internet and the emergence of email, social media, and other means of communicating and sharing information locally, nationally and globally. Terms such as "information sharing" and "knowledge exchange" have become commonplace. Information sharing can be defined as the exchange of data/information and knowledge between various organizations, people and technologies, while knowledge exchange is used to describe the processes by which skilled people exchange data, knowledge, and expertise for mutual benefit.

These developments have become normal ways for many of us to communicate and share knowledge and work together across geographic boundaries. These developments have added to, and challenged, traditional resources such as libraries, while providing access to wider resources through information communities, research networks, websites, online forums, discussion groups, and social media.

Opportunities and threats

This ease of communication and access to knowledge provides many opportunities for information sharing but can also present challenges. The main benefit of the information age for collaborative work is ease of access to information. This allows one to manage learning and professional development from a desktop, tablet, or smart phone in order to develop academic partnerships, projects, and business and commercial activities. Generally speaking, the challenges faced include information overload, dilemmas of quantity versus quality, and breaches of privacy or security, both corporate and individual. Over the last decade, the rapid changes in technology have enhanced our communication options from forums to social media to virtual meetings via skype and conference calls. While these options are cost-effective, there are some drawbacks, such as having to deal with information overload while trying to keep up to date, emerging copyright issues for researchers wanting to share their work, and lack of face-to-face meetings.

Drawing upon experiences of working on three collaborative projects, this article will explore the benefits and challenges of information sharing processes. Each of the projects had a principal project manager and a number of partners ranging from 12 to 18. Two projects were pan-European; the other had both European & US input in its early stages but later shifted to England-only.

The earliest project started in 2002 and the last one finished in 2016. Given this time span, each of the projects used a range of information sharing methods, including written memos, letters, and reports; bulletin and newsletters; meetings face-to-face and virtual; presentations; briefings; and more recently, discussion forums, Twitter, and special interest groups on sites such as Facebook and LinkedIn.

The projects

European Gateway on Alcohol, Drugs and other Addictions

The Gateway was an online database of descriptions and links to over 1000 evaluated European websites from 32 countries on the use and misuse of drugs and other psychoactive substances. The project was set up and run by the European Association of Libraries and Information Services on Alcohol and other Drugs, with funding from the European Commission. Information professionals and subject experts from 18 institutions across Europe selected, classified, and catalogued website resources. The project ran between 2002 and 2007 (Goodair et al., 2005).

Clearly, the number of participants in the project determined its approach to information sharing and communication. The major methods used were training events and meetings. Training for the whole project team was held at the ELISAD annual conference, enabling all to share issues and assist one another. Ongoing communication and information sharing processes were developed. Project management team members took on different roles, such as having one person responsible for producing an internal newsletter who encouraged all to submit reports on work in progress, which proved be a key motivator and reminder to do the work. This person also managed external public relations and assisted the project manager with compiling and submitting reports to the funders, the European Commission. Participants were set up with 'buddies' whose role was to support and help with technical queries via email.

The approaches used enabled partners to share knowledge and seek help and advice from one another, but a real benefit was that they were not used to replace face-to-face communication.

Substance Misuse in the Undergraduate Curriculum

This project was initiated and led by The International Centre for Drug Policy, St. George's, University of London, with an aim of improving substance misuse teaching in undergraduate medicine in English medical schools. The project started in 2005 and was UK-wide with input from the US and Europe. Its first two years focused on developing and publishing the 'Substance Misuse in the Undergraduate Medical Curriculum Guidelines' on integrating alcohol, drugs, and tobacco training in medical undergraduate curricula (International Centre for Drug Policy, 2007). Following further funding from the United Kingdom's Department of Health the project focused, between 2008 and 2011, on supporting the integration and implementing of the guidance in England only. This was done through the funding and appointment of time-limited curriculum coordinators in 19 English medical schools, working with local academic champions to identify the suitability of the current substance misuse teaching and to recommend and support changes to ensure that substance misuse issues are fully covered in line with the national guidelines produced. Another phase currently underway is focusing on developing a network for those teaching in substance misuse and updating the learning resources produced for medical schools.

A national coordinator was appointed to manage the project whose key responsibilities included ensuring a regular and effective flow of communication and information to all involved. This included a National Steering Group, the academic champions' network, and the curriculum coordinators' group. The methods employed for communicating included email, meetings,

formal minutes, reports, newsletter, a project website, and an online forum.

The key participants in the project were the curriculum coordinators and the academic champions, and these were spread across England. Communication with and between coordinators was conducted through e-mail, project website, and the coordinators network meetings, where common work issues were discussed and best practice was shared. This was found to be an effective source of support and informal training and means of sharing information. Similarly, the academic champions' network enabled communication and information sharing to take place between the academic champions, the coordinators, and key members of steering group. Email was a more popular form of communication between meetings, while the discussion forum on the project website was used less frequently. A key task for the project coordinators was identifying and recommending substance misuse resources for use in teaching and this was done through a social bookmarking group on LinkedIn. A project newsletter was produced and issued quarterly to provide regular updates on the work of the project and was sent to all coordinators, academic champions, and the National Steering Group.

Face-to-face communication and information sharing via email were the main methods employed. Channels used for particular communication functions enabled clear, constructive information sharing and dialogue. The newsletter, reports, minutes, and LinkedIn site enabled the filtering of information relevant to each group of participants.

EU Madness

This project was developed to integrate monitoring and profiling of Novel Psychoactive Substances (NPS) in Europe in order to prevent health harms and provide resources to update healthcare professionals. The project's objectives, through its 4 integrated work streams, are to monitor, test,

and profile existing and emerging types of NPS for their characteristics and potential health harms. The project comprises a partnership of 12 universities from England, Scotland, Italy, Spain, and Germany. It was started in 2014 and is due to be completed in 2016.

As the most recent project of the three, its prime means of communication were email and social media. Initially, this was an effective means of sharing information and communicating. During the first six months, much was being shared by the project participants through email, but then a discussion about information overload started. An aim of the project is to monitor the use and health harms of novel psychoactive substances and much of the information being shared early on was about published books and academic papers, and it was this that led to overload. The question was how the useful information could be shared in a way that would neither overload us nor fill our email inboxes. The project administrator sought participant views which resulted in an aggregated newsletter that brings together all the new and information to be shared together in one place with links to relevant academic papers. Alongside this, Facebook and LinkedIn groups were set up for those wishing to communicate using those methods, but a drop-off in the alerts from these has occurred. The project also provides information to others working in the sector via a membership area of its website and can be followed on Twitter. Face-to-face meetings of all the collaborators are kept to a minimum due to the costs in running them, but they provide a very good means of tackling issues and focusing on particular aspects of the project.

Discussion

For all the projects, communication and effective information sharing were or are crucial keys to success. Assumptions that all are willing to communicate and share information in the same way can create tensions, and it is important to consider whether modern technology really is the best and only way to operate. Lank (2006) explores myths about the role of technology in communication and cites three – "number one: if you are able to communicate electronically, you will not need to meet face-to-face; number two: if you provide technology tools, people will use them; number three: it is useful to capture everything in IT systems" (Lank, 2006, p.103-104).

Looking at the means of sharing information and communication employed by the three projects, we find differences but also commonalities. The differences reflect the different periods in which the projects operate, and the forms of internet communications available to them. It is interesting to note that all employed a newsletter, email, and face-to-face meetings. Each of the projects developed systems based on the needs of project partners and were flexible by recognizing that project participants may require different forms of communication or have different information needs. This is demonstrated by ELISAD and EU Madness projects, in which formal information sharing protocols were necessary for data protection.

The benefits and key observations

Collaborative projects can deliver benefits and learning not only within their field of expertise but also beyond it. For the participants these can include:

- Stimulating ideas through sharing of professional knowledge.
- Developing and enhancing subject knowledge.
- Providing staff development, mentoring & training.
- Developing knowledge and skills in using IT information systems and metadata.
- Developing skills in electronic information retrieval & appreciation of open access

Key points to note in processing and designing information exchange systems are:

- Avoid using remote working, build in opportunities for face-to face activities.
- Use all forms of communication and be clear about the processes for communication and information sharing
- Be inclusive – consult partners
- Review information sharing processes at regular intervals – learn lessons and apply them.
- Design processes/systems for sharing of information
- Make processes fit for purpose and relevant to project outcomes
- Be flexible in systems, recognize that project participants may require differing forms of communication/ information needs
- Have protocols – data protection/ dissemination
- Create a safe space in which to listen, share, explore new ideas, and generate new knowledge
- Use the collective skills, experience and knowledge that exists within the team and employing organizations
- Know your own role, make sure others understand your role and make sure you understand others' roles

Technology and globalization enable us to work with people from all over the world but the key to success is being able to harness the talent in your team, communicate effectively, and appreciate cultural differences and various styles of working.

References

European Commission. (1995, February 26). *Conclusions of G7 Summit Information Society Conference* [Press release]. Retrieved from http://europa.eu/rapid/press-release_DOC-95-2_en.htm?locale=en

Goodair, C., Moen J., Prepeliczay, S., & Rouault, T. (2005). Collaboration across Europe: Experience from practice. *Libri*, 55(4), 225-230.

International Centre for Drug Policy. (2007). *Substance misuse in the undergraduate curriculum.* Retrieved from: http://www.sgul.ac.uk/images/docs/idcp%20pdfs/Substance%20misuse%20in%20the%20undergrad%20medical%20curiculum/Substance_Misuse_Guidance_Undergraduate_Medical_Curriculum_2007.pdf

Lank, E. (2006). Communicating and sharing information: Dispelling the myths. In *Collaborative advantage: How organizations win by working together* (pp. 103-104). Basingstoke: Palgrave Macmillan.

Contact the author

Christine Goodair BA (Hons) FRSA
Programmes Manager (Substance Misuse)
Population Health Research Institute
6th Floor, Hunter Wing
St George's, University of London,
Cranmer Terrace
London SW17 ORE
cgoodair@sgul.ac.uk

"Open during renovation": Open science and libraries

Judit H. Ward

William Bejarano

William Haggis

Center of Alcohol Studies,
Rutgers, The State University of New Jersey

The popular term "Open Science" refers to a fast-growing movement with the noble intention of promoting unrestricted access to scientific research, data and dissemination during the various phases of the research process, from data collection through the analysis and publication of results. The paper reviews the interpretations and components of Open Science, such as Open Data, Open Source, Open Access, Open Peer Review, etc., and points out their relevance to libraries. It focuses on issues related to addiction professionals and researchers, including new technologies assisting collaboration and communication, alternative metrics to assess scholarly impact, and the opportunity to share research and knowledge via social media. There is a new role evolving for librarians who are willing to experiment with the venues of Open Science and assist researchers and practitioners; however, the new developments in making science more transparent and reproducible will affect everyone in the long run.

Keywords

Open access, Open science, Information technology

Open Science is one of today's hottest topics. The phrase covers the noble intention to provide open access to the individual phases of research from data collection to publication and beyond: Open Data, Open Source, Open Access, Open Peer Review, Open Methodology, and Open Instructional Resources. Librarians, with their expertise in research assistance and new technologies, are primed to play a key role in opening science for broader audiences.

The interest in the Open Science movement stems from the daily work of the Rutgers Center of Alcohol Studies (CAS) Library. In the past months, several journals that publish addiction science considered publishing or decided to publish openly accessible articles, such as the *New England Journal of Medicine*, *Nature*, *Science*, and *PLOS* journals. Additionally, scholarly social media applications such as ResearchGate, ORCID, and Mendeley have been adopted by researchers and have become more and more widely used in addiction science, prompting librarians to assess their potential usefulness to patrons and offer training and guidance.

The CAS Library staff has identified several emerging needs related to or derived from these endeavors to open up science and research. Enthusiastic and willing to experiment, we routinely assist researchers and practitioners in navigating the maze of open science. Recent challenges included the use of scholarly social media to benefit CAS and meeting the new NIH Biosketch requirement using SciENcv. New developments in making science more transparent will affect everyone's work in the long run. We strongly believe that librarians, famous for their adaptability and eagerness to explore, learn, and educate, now have a window of opportunity to stay abreast of the advances and can support scholars in every phase of the research cycle. Oftentimes, the first task is defining the task itself. Librarians with a global perspective of the processes of information retrieval and research can contribute to research and science by prioritizing tasks and promoting best practices.

Open Science defined

The [Wikipedia article](#) ("Open Science," 2015) on Open Science points out that the concept goes back as far as the 16th century, when scientists first shared knowledge and resources via newly-formed academic journals designed to promote collaboration. The term "Open Science" originates from a 2006 blog post by Jean-Claude Bradley, an Associate Professor of Chemistry at Drexel University, intended to clear the confusion about the definitions of Open Source Science and differentiate it from Open Source Software ("Open Notebook Science," n.d.). He suggested the phrase "Open Notebook Science,"

which has not yet suffered meme mutation. By this I mean that there is a URL to a laboratory notebook ([like this](#)) that is freely available and indexed on common search engines. It does not necessarily have to look like a paper notebook but it is essential that all of the information available to the

researchers to make their conclusions is equally available to the rest of the world. Basically, no insider information (Bradley, J.-C., 2006).

An umbrella term for the concept that encompasses multiple approaches and several interpretations, Open Science and its six main components (shown in Figure 1) can affect every facet of a researcher's everyday life. Challenges and opportunities include new technologies assisting collaboration and communication, alternative metrics to assess scholarly impact, and the opportunity to share research and knowledge via scholarly social media.
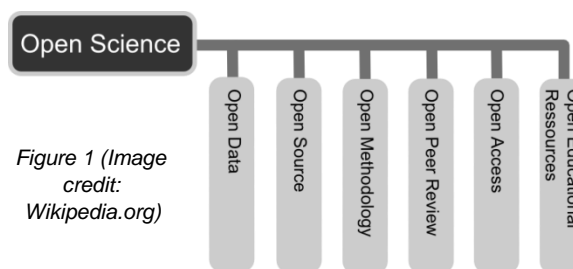
Figure 1 (Image credit: Wikipedia.org)

Open Data

One of the emerging positions in large academic libraries is the *data librarian*, i.e. a librarian specializing in data curation. The job includes storing and managing data during the research process, creating and applying metadata standards, and the time-honored tasks of finding, obtaining, and citing information. Systematic data collection and analysis by laymen, called *citizen science*, has become a popular form of public participation in scientific research. Such grassroots initiatives gather data in various locations and aggregate them in a common, open database. This is a form of *crowdsourcing*, where the collaboration of a large number of participants makes it possible to record events at an enormous scale – leading to "big data" in the open domain. Famous examples include [Project Feederwatch](#), documenting habits of birds in numerous locations, and [Galaxy Zoo](#), a large-scale interactive project classifying millions of galaxies. The scale of

such data collection and the improved capacity to record single occurrences of irreproducible events offer great promise for science. Louis Pasteur, Robert Koch, Joseph Lister, Florence Nightingale, and Ignaz Semmelweis, working separately in the 19th century, could hardly have imagined the possibilities that technologically-facilitated open data might hold for public health research.

Open Source and Open Educational Resources

Open Source refers to both sharing source codes, a trend now among programmers and scientists, and opening educational resources. Algorithms and codes are often valued and well-preserved secrets; however, young scientists, hoping to make their efforts reproducible, are more than willing to share theirs. It is also very helpful that scholarly social media platforms allow posting data sets and source codes as contributions to science. This practice has recently been acknowledged as scholarly activity by the NIH in its new Biosketch, which now uses the broader category "Contributions to Science" instead of the previously required "Peer-reviewed Articles."

Opening up educational resources and sharing content in various formats makes knowledge available for larger audiences. A MOOC, or Massive Open Online Course, features traditional course elements provided via the web as well as forums and interactions within the class community. A notable initiative of open access content in the information science field is the Open Access Curricula for Researchers and Librarians, a UNESCO project to promote library and information science ("UNESCO's Open Access," 2015).

Open Peer Review

A remarkable segment of the Open Science movement is opening up the often-debated process of peer review. Transparent and fast new review methods have evolved in addition to the often-criticized traditional process, in which pre-publication reviews are provided secretly by anonymous reviewers over a span of months or more. Authors can now share the first draft of their manuscript on scholarly social media web sites, soliciting opinions, comments, and criticism. Some critics of peer review are already predicting the end of the process, since with the removal of anonymity the review can become a more tactful and constructive process.

We should also note here a new publication format, the so-called *registered report* (Chambers, 2013). This is an unfinished and unpublished manuscript which can be submitted and accepted for publication before the results of the study have been finalized. The idea behind this is that more emphasis ought to be placed on the importance of the research question than on its final results, regardless of outcome.

Costs of Open Science

Open Science does not necessarily mean free science. Librarians are often consulted about the relative status and reputation of different scholarly journals by both senior and junior scientists. It is well known that most open access journals pass the costs of publishing on to the authors in the form of processing charges and page fees. The amounts range from $500 to $3,000 per article, although like anything else in a market-driven economy, these can go "on sale." The discounted offers may also boast fast turnaround time and guaranteed publication. Addiction scientists working in reputable institutions have become a commodity and are bombarded with endless requests to publish their articles in open access journals or join editorial boards. Disoriented in the maze of open science, researchers often consult librarians about these dubious cases, creating a new role for librarians well-versed in evaluating online information.

Predatory journals

An academic librarian from Denver, Jeffrey Beall, took the initiative to establish a list of so-called predatory journals on his website, *Scholarly Open Access*. Predatory open access publishing refers to an exploitative publishing business model. These venues take advantage of unsuspecting victims, who feel pressured to publish regularly. The "Publish or Perish" dilemma of academia may cloud the judgment of researchers when they receive an offer to publish their articles. They may ignore warning signs, such as the lack of the editorial and publishing services usually provided by respected and legitimate journals. If they read the fine print, they will discover hefty publication fees, usually assessed after the paper is accepted. The costs after publication are harder to calculate but no less severe: some readers may be misled by research that has not been properly vetted, while savvier consumers will lose respect for scholars and institutions associated with a low-quality venue. Being published in a disreputable journal hurts the author, the institution, and science in general.

Evaluating information in the online environment on a daily basis, librarians have long been aware that poor grammar and syntax, broken links, contorted English, and the lack of proper punctuation are all red flags that raise questions about the authority of a resource. Web sites and emails related to predatory publishers are no exception. However, the practice of adding or dropping a single word from a reputable journal title, called hijacking, demands particularly close scrutiny. For example, the Wiley journal *Depression and Anxiety* can easily be mixed up with the predatory *Journal of Depression and Anxiety* (Beall, 2015). Another trick is the "creative" use of journal titles already well-established on the OA market, such as using the name of the famous *Frontiers* published by *Nature* group and plagiarizing it as *Cancer Research Frontiers* with no actual affiliation (Beall, 2014b). More aggressive methods include using old contact information for a journal that was recently bought out and became predatory, such as *Experimental and Clinical Cardiology*. The European owner kept the Canadian address, but the existence of an editorial board or peer review process is questionable. What is real, however, is the page charge on the invoice sent from a tax haven (Beall, 2014a).

New tasks for librarians

Open Science has created opportunities for librarians to fill new roles in research and help patrons navigate new resources and procedures. Large universities routinely use and publicize their repositories for scholars to share their work. Librarians have participated in designing and implementing these databases, and their task now extends to educating users about the benefits and actual use of the university repository, including version control and copyright issues. Their role is especially valuable in institutions with mandatory deposits. Librarians can train student assistants in order to ensure the proper use and maximum benefit of the repository.

Information dissemination

The most obvious areas for librarians to get involved include gathering and providing information on the new advancements of open science. Information sessions, one-on-one or in small groups, as well as ad hoc evaluation of online information resources, scholarly social media tools, and new software applications, can add value to the scholar's daily work by saving precious time. Email blasts and newsletters can serve as an organized, structured, and non-invasive method of pushing information, especially if they are well-timed. Such services can be provided in a small, specialized library, as we have found at the Rutgers Center of Alcohol Studies. Table 1 shows our collection of resources on Open Science, presented in a recent issue of our newsletter (Ward & Haggis, 2015).

Open Science 101

RESOURCES

[Open Access Directory](#) contains simple factual lists about open access (OA) to science and scholarship, maintained by the OA community at large.

[Open Science Directory](#), with about 13000 scientific journals aims to provide a global search tool for all open access and special programs journal titles.

[Open Notebook Science Network](#), promotes Open Notebook Science, the practice of making the entire primary record of a research project publicly available online as it is recorded.

MISCELLANEOUS PROJECTS, WORKING GROUPS, AND BLOGS TO START WITH:

[OKF Open Science Working Group](#), a global network of researchers, librarians, students, policy-makers, publishers, data-curators, coders, entrepreneurs, activists and citizens who believe that open science is better science.

[Center for Open Science](#): a non-profit technology company providing free and open services to increase inclusivity and transparency of research, such as the [Open Science Framework](#) (OSF) supports the entire research lifecycle: planning, execution, reporting, archiving, and discovery.

[Open Science Grid](#): a global community of scientist, researchers, and experts in high throughput computing from all around the world.

[Open Science Data Cloud](#): provides the scientific community with resources for storing, sharing, and analyzing terabyte and petabyte-scale scientific datasets.

ARTICLES

Carroll, M. W. (2013). [Creative Commons and the openness of open access](#). *New England Journal of Medicine*, *368*, 789-791. doi: 10.1056/NEJMp1300040

Feltes, C., Gibson, G., Miller, H., Norton, C., & Pollock, L. (2012). *[Envisioning the future of science libraries at academic research institutions: A discussion](#)* [White paper]. Retrieved from Cold Spring Harbor Laboratory Institutional Repository: http://repository.cshl.edu/26505/

Kraker, P., Leony, D., Reinhardt, W., & Beham, G. (2011). [The case for an open science in technology enhanced learning](#). *International Journal of Technology Enhanced Learning, 3*(6), 643–654.

Masum, H., Rao, A., Good, B. M., Todd, M. H., Edwards, A. M., Chan, L., … & Bourne, P. E. (2013). [Ten simple rules for cultivating open science and collaborative r&d](#). *PLoS Computational Biology, 9*(9). doi:10.1371/journal.pcbi.1003244

Rinaldi, A. (2014). [Spinning the web of open science: Social networks for scientists and data sharing, together with open access, promise to change the way research is conducted and communicated](#). *EMBO Reports, 15*(4), 342-346. doi:10.1002/embr.201438659

Ross, J. S., & Krumholz, H. M. (2013). [Ushering in a new era of open science through data sharing: The wall must come down](#). *JAMA, 309*(13), 1355-1356. doi:10.1001/jama.2013.1299

Van Noorden, R. (2013). [Open access: The true cost of science publishing](#). *Nature, 495*(7442), 426-429. doi: 10.1038/495426a

Walther, A., & van den Bosch, J. J. F. (2012). [FOSE: a framework for open science evaluation](#). *Frontiers in Computational Neuroscience, 6*. doi:10.3389/fncom.2012.00032

Woelfle, M., Olliaro, P., & Todd, M. H. (2011). [Open science is a research accelerator](#). *Nature Chemistry, 3*, 745–748. doi:10.1038/nchem.1149

Table 1 Open Science 101

The CAS' "Library Day" event is an occasion to showcase our involvement in the open science movement, complemented by informative articles in the quarterly *CAS Information Services Newsletter*. Recent topics include our collaboration with senior researchers to explore the NIH Biosketch requirement and to streamline a workflow. We worked closely with them to decipher the rules and software applications. The researcher, through his or her eRA Commons site (the NIH global grants platform), has access to SciENcv, an intermediary platform. The Biosketch is generated from data fields filled out manually or populated by another application integrated with SciENcv. The National Library of Medicine designed SciENcv to link and integrate with MyNCBI, containing the author's publications, as well as ORCID, a researcher identifier social media platform. Since we had the opportunity to preview the new system at the 2014 MLA conference, and CAS researchers had eRA Commons accounts, we began on several rounds of testing to establish a workflow. This was then presented to the entire faculty in a workshop. We strongly believe that this type of collaboration is key to proving the importance and value of librarians in a new research landscape.

Scholarly social media

Scholarly social media applications, such as Academia.edu and ResearchGate, serve the noble goals of open science in addition to providing a free and open platform for researchers to showcase their work (Ward, Bejarano, & Dudás, 2014). Researcher profiles created on these platforms allow authors to share the bibliographic data (and full text, if copyright allows) of their publications in peer-reviewed journals as well as their non-traditional scholarly output, such as grey literature, datasets, presentations, educational materials, syllabi, etc. The preferred scholarly social media platform among addiction scientists, ResearchGate, is only one of the many applications that can serve the scientific community. It helps users build and maintain relationships, find collaborators, exchange ideas, and function in many ways to promote scholarly communication. Much like Facebook and LinkedIn, these sites involve activities like setting up a profile page, posting and sharing, endorsing, and writing recommendations. Statistics on scholarly impact are instantly provided and are openly available, in the form of alternative metrics, which all contribute to the evaluation of a scholar's work.

Alternative metrics, or altmetrics (Piwowar, 2013), which could be the topic of an entire article, is another area where librarians can serve research by monitoring trends. The NIH's recognition of altmetrics as a method for measuring scholarly output indicates its legitimacy, in addition to helping entry level and junior researchers get funded. Traditional metrics, such as citation counts and impact factor, are complemented by new statistics such as download counts, shares, and media mentions and cites, including scholarly social media. These metrics are meant to measure immediate impact on the actual readers in the field. In addition to traditional peer-reviewed articles, altmetrics provide readership data on unorthodox methods of scholarly output, such as datasets, presentations, syllabi, or virtually anything that attests to the scholar's scientific work. Librarians, already knowledgeable about bibliometrics, can take the lead in interpreting altmetrics and helping researchers with monitoring emerging tools.

ORCID, as mentioned above, serves as a unique identifier in the research community. Its main advantage lies in consolidating the name variations of the individual author that may result from name changes or database input differences. Integrated with many applications, ORCID shows a great potential to eliminate discrepancies in citation counts observable in the various proprietary and free databases, as well as in scholarly social media. Librarians can promote its use and help researchers set up and link their IDs.

Librarians were early adopters and promoters of citation management software

applications such as EndNote, RefWorks, and, more recently, an open version called Zotero. The advantages of managing one's collection of downloaded articles now can be combined with those of scholarly social media. Such combinations in turn have fostered interest in new platforms that can accommodate the whole variety of applications relevant during the research process. Mendeley, which was originally a social media application and is now owned by Elsevier, has introduced one solution, which is available for researchers in its basic form for free. Premium versions include individual and institutional platforms on a subscription basis. In addition to providing guidance and training, librarians can help a research community decide which version of such a service best suits its needs.

A brave new world for librarians

Thoroughly enmeshed in the infrastructure of addiction research, librarians have the right to claim a part in the advent of open science. Moreover, we strongly believe that by taking the initiative and assuming the active role of the "informationist," librarians can play a significant role in shaping the research process, as they did in making the Internet what we know today.

Scholarly social media, along with other Open Science initiatives, will newly invigorate science, research, and scholarly publishing (Rinaldi, 2014). Librarians can monitor new advancements and assess new platforms, tools, and applications. It is worth paying attention to these initiatives, following the trends, and finding the loopholes and challenges where the help of an information professional can make a difference. At a minimum, we can always look up and check out resources, and recommend a good read (Bartling & Friesike, 2014).

References

Bartling, S. & Friesike, S. (Eds.) (2014). *Opening Science: The evolving guide on how the web is changing research, collaboration and scholarly publishing*. Retrieved from http://book.openingscience.org/

Beall, J. (2014a, July 8). Cardiology journal's decline is heartbreaking. Retrieved from http://scholarlyoa.com/2014/07/08/cardiology-journals-decline-is-heartbreaking/

Beall, J. (2014b, November 6). New Open-Access oncology journal has big ambitions. Retrieved from http://scholarlyoa.com/2014/11/06/new-open-access-oncology-journal-has-big-ambitions/

Beall, J. (2015, February 19). OMICS group aims to trick researchers with copycat journal titles. Retrieved from http://scholarlyoa.com/2015/02/19/omics-group-aims-to-trick-researchers-with-copycat-journal-titles/

Bradley, J.-C. (2006). Open Notebook Science. Retrieved from http://drexel-coas-elearning.blogspot.com/2006/09/open-notebook-science.html

Chambers, C. D. (2013). Registered reports: A new publishing initiative at Cortex. *Cortex, 49*(3), 609-610.

Hajnal Ward, J., Bejarano, W., & Dudás, A. (2014). Tudományos szelfi: tudósprofilok az Interneten. *Könyvtári Figyelő, 60*(3), 294-308.

Open Notebook Science Network. (n.d.). Retrieved from http://onsnetwork.org/what-is-open-notebook-science/

Open Science. (2015, November 7). In Wikipedia, The Free Encyclopedia. Retrieved December 22, 2015, from http://en.wikipedia.org/wiki/Open_science

Piwowar, H. (2013, January 10) Altmetrics: Value all research products. *Nature, 493*(7431), 159.

Rinaldi A. (2014). Spinning the web of open science: Social networks for scientists and data sharing, together with open access, promise to change the way research is conducted and communicated. *EMBO Reports, 15*(4), 342-346.

UNESCO's Open Access (OA) Curriculum is now online. (2015, March 16). Retrieved from

http://www.unesco.org/new/en/communication-and-information/resources/news-and-in-focus-articles/all-news/news/unescos_open_access_oa_curriculum_is_now_online/#.Vnl7lkaQmez

Ward, J., & Haggis, W. (2015, February). OS 101: What we talk about when we talk about Open Science. *Center of Alcohol Studies Information Services Newsletter*. Retrieved from http://library.alcoholstudies.rutgers.edu/sites/library.alcoholstudies.rutgers.edu/files/documents/newsletters/NewsletterFebruary2015.pdf

Was ist Open Science? (n.d.) Retrieved from http://openscienceasap.org/open-science/

Contact the authors

Judit H. Ward, PhD, MLIS
Director of Information Services
Center of Alcohol Studies
Rutgers, The State University of New Jersey
607 Allison Road
Piscataway, NJ 08854-8001 USA
Phone: 848-445-4442
jhajnal@rci.rutgers.edu

William Bejarano, MLIS, MLER
Senior Information Specialist
Center of Alcohol Studies
Rutgers, The State University of New Jersey
607 Allison Rd.
Piscataway, NJ 08854 USA
Phone: 848-445-4442
bejarano@rutgers.edu

William Haggis, MLIS
Information Specialist
Center of Alcohol Studies
Rutgers, The State University of New Jersey
607 Allison Rd.
Piscataway, NJ 08854 USA
Phone: 848-445-4442
whh25@scarletmail.rutgers.edu

Marijuana: Exploring the next steps in marijuana control

Sheila Lacroix

Library Coordinator, CAMH Library
Centre for Addiction and Mental Health

This paper is based on the panel presentation at the 2015 SALIS conference that brought together experts to discuss the possibilities and challenges of progressing away from the criminalization model for marijuana control. Three areas were addressed: approaches to control policy; public health issues in particular relating to the health and behavior of adolescents and youth; and the challenges in the United States of federal versus state law. There are different models and approaches to control, such as decriminalization as in the Portuguese model or a government monopoly controlling supply and demand. Each jurisdiction must balance benefits with costs. Concerning adolescents and youth, health promotion combined with enforceable age limits on access could be the best approaches. In the United States, states continue to move towards legalization without federal government challenges against state laws and regulations. Approaches underway in Washington State and Colorado were highlighted; each has a system of government controls on production, distribution and sales, and limitations on consumer usage.

Keywords

Cannabis; Marijuana; Decriminalization; Policy; Legalization

Acknowledgements

Now that some jurisdictions have legalized the recreational, non-medical use of marijuana, Western society seems to be on the brink of a major attitude and policy shift. To explore some of the issues related to this shift, a panel of experts was assembled at the 2015 SALIS Conference to offer their perspectives on issues such as: approaches to policy; possible consequences to adolescent/youth health and behavior; challenges of the uneven legal landscape, as marijuana becomes a mainstream drug like alcohol and tobacco.

This paper is based on the presentations of the panelists and the discussion that followed. Dr. Thomas Babor shared his expertise on relevant alcohol and drug policy; Dr. James Lange, his experience with campus prevention; and Dr. John Minan his expertise in the complex legal environment involving three levels: state, federal, and international. A resource list was prepared in advance and updated as a result of the discussion. It is appended to this article.

Lessons Learned from Alcohol Control (and common sense)

Dr. Thomas Babor, Chair, Department of Community Medicine and Health Care, University of Connecticut School of Medicine.

Dr. Babor began with a review of the shortfalls of regulatory measures for drugs, including marijuana. For example, interdiction of foreign supply leads to increases in domestic production and other supply controls only seem to result in transient market disruptions. Locally, small enforcement operations are challenging to conduct and efforts to reduce source crops in developing countries have not reduced supplies substantially. In summary, there is not enough research about the effectiveness of policies to control drug supplies and distribution through enforcement, interdiction or incarceration to guide applying regulatory measures. Dr. Babor

iscussed the range of options for marijuana, from hard prohibition to legalization, both commercial and non-commercial; the question is simple but the answers complex.

Dr. Babor outlined the four dimensions of legalization that need to be considered:

- The organizations allowed to provide the drug,
- The regulations under which they operate,
- The nature of the products, and
- The price.

Concerning commercial legalization, is the alcohol model appropriate? There are some advantages, such as being subject to business regulations, and the licensing of producers and sellers, to name some. But there are disadvantages to this model. Marijuana is not like alcohol. It costs little to produce and distribute. Would an increase in availability, lower pricing, and advertising and promotion increase use and change attitudes about social acceptability, in particular for children and young people? Approximately two thirds of U.S. teens who already use marijuana reported that legalization would likely increase their use (Partnership for Drug-Free Kids, 2013). Perceived risk of marijuana usage harm has been decreasing among adolescent students since 1991 although the percentage of U.S. reporting past month marijuana use remains steady at 6.5%, 16.6% and 21.2% for 8th, 10th and 12th grade students respectively (Monitoring the Future, 2015).
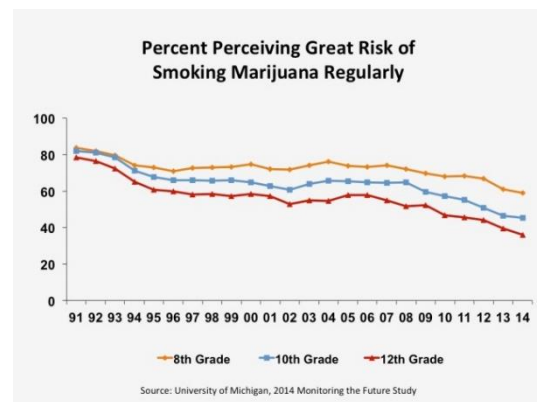
Figure 1 Percent perceiving great risk of smoking marijuana regularly

Will social media be inundated with marketing messages as in the case with alcohol and e-cigarettes? Dr. Babor provided examples of 'enticing' advertisements. The perceptions of young people are a big issue.

There are noncommercial options. One is through a government monopoly that controls supply and demand. The government could cover retail distribution and outsource production to the private sector. Prices can be kept competitive enough to undercut black market demand and purchase amounts can be limited. Other options include allowing grow-your own or non-profit user cooperatives to handle both production and distribution. The Portuguese decriminalization approach was highlighted. In Portugal, all drugs are decriminalized. Possession and drug usage are prohibited but violations are administrative, not criminal. Drug trafficking continues to be a criminal offense. Since this change in policy in 2001 there have been no catastrophic effects.

Dr. Babor concluded that marijuana policy is a "work in progress that should be monitored systematically." The shift away from strict prohibition to milder sanctions does not seem to increase use substantially. Each society or jurisdiction must balance the economic benefits of legalization with the social and psychological costs. For further reading, he suggested *Drug Policy and the Public Good* (Babor et al., 2010) and *Cannabis Policy: Moving Beyond the Stalemate* (Room, Fischer, Hall, Lenton, and Reuter, 2010).

Marijuana: Next steps – Adapting campus prevention efforts in a changing legal environment

Dr. James Lange, Director, Health Promotion, San Diego State University (SDSU)

Dr. Lange began with the news that in January 2016, California will likely follow the legalization trends seen in Colorado, Washington and Alaska, when a similar measure comes to the state's ballot. Policy

and prevention approaches on campus must be adapted.

Dr. Lange took us back almost a hundred years to when the populace in some states was voting for alcohol legalization after a period of prohibition – a reminder that getting public input regarding issues like this is not new! He also highlighted the proliferation of marijuana research which has skyrocketed since year 2000. More than 10,000 publications have been indexed in the research databases Medline and PsycINFO so far this decade. *Monitoring the Future* data show no recent dramatic change in marijuana use amongst college students, with annual prevalence hovering between 30 and 40 percent over the past decade. Unfortunately, perceived risk and attitudes have not been tracked specifically for college students.

Post-legalization, some of the challenges faced by SDSU will be the result of dealing with campus restrictions and policy that will be at odds with the rest of the state. Currently, as required by the federal *Drug Free Schools and Community Act*, SDSU does not allow for the possession, use or distribution of marijuana, which is federally classified as illegal, even with a medical recommendation; this will not change under state legalization. The messages for SDSU students in the 'Just in Case' flyer designed in preparation for Proposition 19, the 2010 marijuana legalization initiative in California, which wasn't passed, will not change.

There is an indication that federal laws are softening. Should this happen, it is anticipated that students using cannabis for medicinal purposes may have to be accommodated; fair housing could enable medical marijuana on campus. Smoking policy will have to be addressed to align with tobacco smoking.

How best to handle students? College students are older (past the more vulnerable age), well educated, and social-justice-oriented. They have an experience-based understanding of relative risk and recognize hypocrisy and biases, although not without biases themselves. They are more open to a political discussion than being on the

receiving end of prevention efforts. College students are familiar with responsible use of alcohol, but for marijuana, being illegal, defining responsible use is problematic. Any agreement on what abuse or irresponsible use looks like remains to be sorted out. Little is known about the social context of marijuana use in a legal environment but abstinence approaches will not work.

Figure 2 Got Weed?

Instead of prevention messaging, Dr. Lange recommends health promotion, including promoting responsible use and avoiding negative 'reefer madness'-type health messages which can invoke a backlash in students. An information campaign to change views on driving under the influence is warranted as knowledge of harmful effects on driving needs to be disseminated. Students seeking help have access to the Marijuana eCHECKUP TO GO SDSU resource which they can use to explore use in a confidential environment. Dr. Lange's approach is primarily to be there to answer questions, while avoiding confrontation, in the hopes that a health promotion approach will minimize any harms to student health and safety that legalization in the state might precipitate.

Examining the conflict between federal and state law

Dr. John Minan, Professor of Law, University of San Diego

Dr. Minan presented the legal framework surrounding marijuana from both a state and federal perspective. President Nixon signed into law the *Comprehensive Drug Abuse Prevention and Control Act* of 1970 as a part of the War on Drugs. Among other things, it criminalized the possession, use, manufacture, and distribution of marijuana. Over time, individual states adopted medical marijuana and personal use marijuana laws. This required the United States Department of Justice (DOJ) to adopt flexible enforcement guidelines. These guidelines allowed states with strong and effective regulatory and enforcement systems in place to take over local control if federal priorities were not threatened.

Figure 3 Marijuana Legalization Status, June 2015 (Source: Governing.com)

To date, twenty-three states have legalized marijuana use, primarily for medicinal purposes. Four states, Colorado, Washington, Oregon and Alaska, have also legalized personal, non-medical use as well. California, Maine, Arizona, Nevada, Massachusetts and Ohio may follow in 2016 depending on voting outcomes. Problems have arisen with bordering states that claim the federal legislation is being violated,

increasing the risk of marijuana passing through borders from legalizing states into their own. Dr. Minan discussed the motion currently pending with the Supreme Court of the United States that has been filed by Nebraska and Oklahoma against Colorado. They complain that they are being harmed by cross border trafficking from Colorado, arguing that this is in conflict with the Controlled Substance Act and the DOJ policy on diversion from states where it is legal to other states. They also argue that Colorado's law violates international treaties to which the United States is a signatory. In Dr. Minan's opinion, it is not likely that the court will grant the Nebraska-Oklahoma motion, so the climate of uncertainty continues. As these types of claims are territorial, the Supreme Court may not be interested in getting involved. However, should the court decide to weigh in, it could be a "game changer."

Dr. Minan also flagged as problematic the issue of edible marijuana, a lack of uniform packaging standards, and trademark issues. Without standards and industry compliance there could be lawsuits based on negligence. At present the federal laws limit federal involvement, there are no uniform standards at the state level, and there remain important public health concerns. To further complicate the legal landscape, tribal communities can set their own laws which may be in conflict with state laws. For example, in Washington State, all such communities have not chosen to legalize. Finally, Dr. Minan predicts marijuana legalization will continue to be adopted by various states, in spite of the lack of direction at the federal level.

Legalization in action

Dr. Babor mentioned the range of options available for decriminalization /legalization. Below is a brief overview of how legalization is unfolding in Washington State and Colorado, where non-medical marijuana use became legal in 2012. Both could be described as a mixed system: a commercial model with government controls.

In Washington, restrictions include a minimum age of 21; a prohibition on public consumption; a stipulation that retail outlets be 1000 feet away from schools and playgrounds (in 2015 the buffer was reduced to 100 feet from transit, community centers and libraries); and a ban on home growing for non-medical use. At present, the retail price has dropped but the taxes are high and advertising is restricted. Major change came with the passing of the *Cannabis Patient Protection Act* in 2015, which introduced a regulated medical marijuana system, previously unregulated, and aligns this with the existing recreational system. Although privately owned, marijuana producers, processors and retail stores are under the oversight of the Liquor and Cannabis Board (LCB), formerly the Liquor Control Board. Medical marijuana will now be sold in retail stores as well, under state regulation. Stores can be licensed to sell recreational only, medical only, or a combination. The taxes are different for the two types and there are differences in the amount of marijuana that medicinal users can purchase/possess compared to recreational users. The LCB and the Department of Health share responsibilities.

Colorado has experienced an explosion in the number of retail stores selling marijuana. The government has launched a "Good to Know" public information campaign. You must be 21 to purchase, possess, or use retail marijuana and it is illegal to use in public. Possession is limited to one ounce. Unlike Washington residents, Coloradans can grow their own, limited to six plants. You cannot take marijuana out of the state and non-residents can only possess one quarter ounce. The Marijuana Enforcement Division (MED) of the Colorado Department of Revenue, which also monitors gaming, liquor and tobacco, is responsible for licensing and regulating the medical and retail marijuana industry. A system has been developed to track compliance with the law and marijuana production to point of sale.

Further discussion

The focus has been on non-medical use, which perhaps could be criticized as being too narrow. It is recognized that opening up the pharmacopoeia to once again include marijuana has affected a market that was dominated by illicit use. It will be interesting to see how having a product marketed as both a prescription drug and a regulated commodity unfolds. All three panelists commented on the challenges and risks of edible marijuana. Finally, the use of the term 'recreational use' was criticized. It doesn't adequately reflect use beyond prescribed medical use.

Learning from experts in different fields, as well as SALIS colleagues, has helped to broaden our knowledge base. Moving forward toward marijuana decriminalization or legalization is undoubtedly challenging. Even though the answers are not easy and there is insufficient research to provide direction when it comes to legalization strategies, it looks like the momentum is increasing. In the United States, the trend so far seems to be adopting a mixed system that balances a commercial model with government controls, building on existing tobacco and alcohol controls. How well the balance works in terms of public health considerations undoubtedly will be a focus of study for researchers and policy makers.

References

Babor, T. et al. (2010). *Drug Policy and the Public Good*. New York: Oxford University Press, Inc.

Room, R., Fischer, B., Hall, W., Lenton, P., & Reuter, P. (2010). *Cannabis Policy: Moving Beyond Stalemate*. New York: Oxford University Press.

Marijuana control: Exploring the next steps

Selected literature and resources.
Compiled by Sheila Lacroix, CAMH, for:
Marijuana: Next Steps? Panel Discussion.
2015 SALIS Conference, San Diego, April 28 – May 1, 2015
Updated: August, 2015

There is a huge amount to read on the topic of marijuana policy: position papers, research reviews and summaries, media reports, blog posts. More recently, the discussion has gravitated from decriminalization to legalization. Both present unique challenges.

This resource list was prepared for the panel discussion, but has since been updated and includes some references provided by the presenters. The resource list is limited to journal articles, reports, policy papers, government documents, and websites.

Policy/Law

Canadian Centre on Substance Abuse. (2014). *Marijuana for non-therapeutic purposes: policy considerations*. Retrieved from: http://www.ccsa.ca/Resource%20Library/CCSA-Non-Therapeutic-Marijuana-Policy-Considerations-2014-en.pdf

CCSA encourages further evidence-informed, multi-sectoral dialogue to develop policy. Three recommendations for shaping policy: reducing the criminal justice impact; reducing the health impact; reducing the social impact.

Centre for Addiction and Mental Health. (2014). *Cannabis policy framework*. Retrieved from: http://www.camh.ca/en/hospital/about_camh/influencing_public_policy/Documents/CAMHCannabisPolicyFramework.pdf

CAMH's researched-based recommendations take into consideration both that cannabis use results in health risks and that criminalization heightens health harms and causes social harms. Recommendations: Legalization combined with strict health focused regulation.

Caulkins, J. P. (2015). *Considering marijuana legalization: insights for Vermont and other*

jurisdictions (Research Report No. 864). Retrieved from Rand Corporation website: http://www.rand.org/content/dam/rand/pubs/research_reports/RR800/RR864/RAND_RR864.pdf.

This report provides insights for Vermont's ongoing debate about legalizing recreational pot production, distribution, and possession. The study, which can inform similar discussions elsewhere, has a central message: Marijuana policy isn't a binary choice between prohibition and the for-profit, commercial model adopted by Colorado and Washington **S**tate.

Wallach, P. (2014). Washington's marijuana legalization grows knowledge, not just pot: a report on the State's strategy to assess reform. Retrieved from Center for effective Public Management at Brookings: http://www.brookings.edu/~/media/research/files/reports/2014/08/25-washington-marijuana-legalization-knowledge-experiment-wallach/cepmmjwallach.pdf

Greenwald, G. (2009). *Drug Decriminalization in Portugal: Lessons for Creating Fair and Successful Drug Policies*. Washington, DC: CATO Institute. Retrieved from: http://object.cato.org/sites/cato.org/files/pubs/pdf/greenwald_whitepaper.pdf

In 2001, Portugal decriminalized all drugs. Drug trafficking continues to be a criminal offense, but possession for personal use and drug usage, although not legal, are administrative, not criminal violations. This report provides an assessment of the outcome of decriminalization, which are positive.

Kilmer, B. (2014). Policy designs for cannabis legalization: starting with the eight Ps. *American Journal of Drug and Alcohol Abuse,* 40, 259–261.

The eight Ps: Things to consider when thinking of changing cannabis policy. Production; Profit Motive; Promotion; Prevention; Potency; Purity; Price; Permanency.

Room, R., Fischer, B., Hall, W., Lenton, P., & Reuter, P. (2010). *Cannabis Policy: Moving Beyond the Stalemate*. New York: Oxford University Press, Inc.

This is the final report of the conclusions and recommendations of the Global Cannabis Commission convened by the Beckley Foundation. The authors are international experts in drug policy. Its conclusions and recommendations should be considered when developing more effective cannabis policies that will balance controls and harms.

Public health issues

Cannabis. (2015). *Washington Poison Center Toxic Trends Report*: January 22, 2015. Retrieved from:

http://www.wapc.org/wp-content/uploads/WAPC-Toxic-Trends-Report-Cannabis-December.pdf

The Washington State Poison and Drug Information Centre tracks marijuana exposure calls and published the trends periodically in the Toxic Trends Reports. Exposures have increased since 2011 with the most in age categories 13–19 and 20-29.

Colorado Department of Public Health & Environment. (2014). *Monitoring Health Concerns Related to Marijuana in Colorado: 2014*. Retrieved from

https://drive.google.com/a/rmc.org/folderview?id=0BxqXhstk92DbfnNfSURHd0VFZjEtRFpsVEg3bjM5QUJXOEd0VWZDOUNjSnpWWEFvTVdiUFU&usp=sharing#

This report presents initial efforts in monitoring use and health impacts, and reviews current scientific information to guide the development of policies and consumer education.

Pacula, R.L. , Kilmer, B., Wagenaar, A.C., Chaloupka, F.J., & Caulkins, J.P. (2014). Developing public health regulations for marijuana: lessons learned from alcohol and tobacco. *American Journal of Public Health*, 104, 1021-1028.

With the introduction of legalization in Colorado and Washington the authors have been prompted to help policymakers understand decisions faced and lessons to be learned from public health approaches and regulating alcohol and tobacco.

Public Health Issues - Lower Risk Cannabis Use Guidelines (LRCUG)

Many jurisdictions have developed safe alcohol drinking guidelines. Should marijuana become legal, why not reduce risk with guidelines for the public?

Fischer, B., Jeffries, V., Hall, W., Room, R., Goldner, E., & Rehm, J. (2011). Lower risk cannabis use guidelines for Canada (LRCUG): A Narrative Review of Evidence and Recommendations. *Canadian Journal of Public Health*, 102, 324-327.

Evidence shows that harms related to cannabis use increase with intensity of use. Modifiable factors to reduce harm are identified. Examples include: frequency of use, age of onset of use, practices of use and potency.

CAMH is currently conducting research evaluating LRCUG.

Global Drug Survey. (2014). The High-way Code: A Guide to Safer, More Enjoyable Drug Use (Cannabis).Retrieved from

http://www.globaldrugsurvey.com/wp-content/uploads/2014/04/High-Way-Code_Cannabis1.pdf

Dr. Adam Winstock, Global Drug Survey, is an addiction psychiatrist from Great Britain who also promotes developing guidelines on marijuana use. See the survey results from responses of almost 80,000 people who took part in the 2014 Global Drug Survey, compiled to show how users balance pleasure with risks and harms. See also the Highway Code main page:

http://www.globaldrugsurvey.com/brand/the-highway-code/.

Focus on youth

The research clearly indicates that, like alcohol and tobacco, harms to children and adolescents should be a concern.

American Academy of Pediatrics. (2015). The Impact of Marijuana Policies on Youth: Clinical, Research, and Legal Update. AAP Policy Statement. Retrieved from

https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/American-Academy-of-Pediatrics-Reaffirms-Opposition-to-Legalizing-Marijuana-for-Recreational-or-Medical-Use.aspx#

See also the accompanying Technical Report, published in *Pediatrics*, March, 2015. Retrieve from:
http://pediatrics.aappublications.org/content/135/3/e769.full.pdf+html

The technical report is a thorough review of a number of issues relating to marijuana: health, epidemiology, experiences of the impact of legalization or decriminalization. In its policy statement, the Academy reaffirms its position against legalization and recommends that marijuana be decriminalized. The position also makes recommendations where marijuana is sold legally. These include: It should be sold in child proof packaging and that there be strict

enforcement of rules and regulations that limit access, marketing and advertising to youth.

Canadian Centre on Substance Abuse. (2015). *The Effects of Cannabis during Adolescence*.

Retrieved from:
http://www.ccsa.ca/Resource%20Library/CCSA-Effects-of-Cannabis-Use-during-Adolescence-Report-2015-en.pdf

This edited work has contributions from several experts in the field and provides a review of current evidence of the risks to adolescents who use marijuana. Dr. Harald Kalant highlights several important findings that should be considered when policy decisions are made.

For a summary of the report, see:
http://www.ccsa.ca/Resource%20Library/CCSA-Effects-of-Cannabis-Use-during-Adolescence-Preview-2015-en.pdf

Colorado Department of Health& Environment. Effective Policy & Programs to Restrict Youth Access & Exposure to Drugs/Alcohol: Applications for Marijuana. Retrieved from

https://docs.google.com/a/state.co.us/document/d/1LsVfodSKeHo1HBUuqIf7iDH8rSHuBRIfM6izaV0z160/edit?pli=1

A Table listing recommendations and best practices to effectively restrict access and prevent use by youth, based on other substances. It includes state and local level initiatives and considerations.

Focus on youth - Survey data

Will legalization result in an increase in use and/ or a change in perceptions of risk? It is probably too soon to tell, but here are some sources for data reflecting recent trends. Marijuana use is high – one of the big three: Alcohol, Tobacco, Marijuana. Before studying data from the various surveys, you may want to consult the following chart from the Alcohol and Drug Abuse Institute (ADAI), University of Washington:

Marijuana Use Surveys: Different Methodologies May Produce Different Estimates
http://learnaboutmarijuanawa.org/marijuana_surveys_methodology_matrix.pdf

US

Monitoring the Future. (2014). College students'
use of marijuana on the rise, some drugs declining [press release]. Retrieved from
http://www.monitoringthefuture.org//pressreleases/September14PR.pdf.

Reporting data to 2013, daily marijuana reached the highest rate in three decades and continued to climb, according to the 2014 *Monitoring the Future* data to a rate of 5.9%, the highest rate since 1980. However, 2014 saw a slight decrease in annual prevalence of use to 34.4%.

Monitoring the Future. (2014). Use of alcohol, cigarettes, and a number of illicit drugs declines among U.S. teens [press release]. Retrieved from

http://www.monitoringthefuture.org//pressreleases/14drugpr_complete.pdf

Teen marijuana use decreased slightly in 2014. Past month use by 8th graders was 6.5%. Daily use remains high (close to 6% of 12th graders) and still a concern. Attitudes about perceived risks have shifted. Only 36.1% of high school seniors think that regular use puts the user at risk.

Europe

CAN, EMCDDA. (2012). *The 2011 ESPAD Report: Substance Use Among Students in 36 European Countries*. Retrieved from http://www.espad.org/Uploads/ESPAD_reports/2011/The_2011_ESPAD_Report_FULL_2012_10_29.pdf

Use is not consistent across countries, but, overall, 13 % of students reported past year use. An average of 5% were classified as having an elevated risk of developing cannabis-related problems. France and Monaco had the highest prevalence – I in 5 used over the past month.

Ontario, Canada

CAMH. (2013). *Ontario Student Drug Use Survey: 1977-2013*. Retrieved from http://www.camh.ca/en/research/news_and_publications/ontario-student-drug-use-and-health-survey/Documents/2013%20OSDUHS%20Docs/2013OSDUHS_Detailed_DrugUseReport.pdf

Past year cannabis use has dropped from 28% to 23% from 1999 to 2013. However, 2.7% of students, grades 9-12, report symptoms of cannabis dependence.

In the News

High Time: An Editorial Series on Marijuana Legalization. (2014). *New York Times*. Introduction plus 6 part series. Retrieved from: http://www.nytimes.com/interactive/2014/0 7/27/opinion/sunday/high-time-marijuana-legalization.html?op-nav

Intro, Our Position; Part 1, States' Rights; Part 2, Criminal Justice; Part 3, History; Part 4, Health; Part 5, Track Records; Part 6, Regulation.

The Guardian (UK) frequently publishes articles on the topic of marijuana / cannabis legalization and is a good source for an international perspective.

www.theguardian.com/uk.

There is also a US and Australian edition.

Additional websites / Web resources of interest

Drug Policy Alliance www.drugpolicy.org/reforming-marijuana-laws

Advocates for legalization. Has a section on reforming marijuana laws.

Robert Mikos, Professor of Law, Vanderbilt Law School

http://law.vanderbilt.edu/bio/robert-mikos

Dr. Mikos is the leading U.S. expert on federalism and drug law. His website offers access to many of his publications that discuss the challenging issue of federal versus state law when it comes to legalizing and regulating marijuana.

Rand Corporation

www.rand.org

In addition to the report cited above, find other reports under the Topic 'Marijuana'.

From Colorado

State of Colorado Website for Retail Marijuana Information & Resources

http://www.colorado.gov/marijuana

Information for different audiences: parents, public, visitors, retailers, community agencies.

From Washington State

Learn About Marijuana: Science-Based Information for the Public. By ADAI (Alcohol and Drug Abuse Institute), University of Washington

http://LearnAboutMarijuanaWA.org

Includes information for adult recreational marijuana users to minimize risks.

CPPA Impact on the LCB http://www.liq.wa.gov/content/cppa-impact-lcb

In 2015 Washington passed the ***Cannabis Patient Protection Act***. This summarizes the impact on

the work of the Liquor and Cannabis Board, formerly the Liquor Control Board. Retail stores may now sell marijuana for medical use (with correct authorization) and for non-medical use. Under this law, all marijuana producers, processors and retail stores must be licensed under the LCB. *Stalemate*. New York: Oxford University Press, Inc.

Additional resources

Johnson, L.D., O'Malley, P.M., Miech, R.A., Bachman, J.G., & Schulenberg, J.E. (2015). *Monitoring the Future national survey results on drug use, 1975-2014: Overview, key findings on adolescent drug use.* Ann Arbor: Institute for Social Research, The University of Michigan.

The Partnership Attitude Tracking Study: Teens & Parents 2013. (2013). Partnership for Drug-Free Kids. Retrieved from: http://www.drugfree.org/wp-content/uploads/2014/07/PATS-2013-FULL-REPORT.pdf

Contact the author

Sheila Lacroix
Library Coordinator
CAMH Library
33 Russell Street
Toronto, ON Canada M5S 2S1
416 535-8501 x36982
sheila.lacroix@camh.ca

The SALIS collection unveiled: Building an ATOD digital archive

Andrea Mitchell

Executive Director / Librarian
Substance Abuse Librarians & Information Specialists (SALIS)

Nancy Sutherland

Alcohol & Drug Abuse Institute
University of Washington

Sheila Lacroix

Library Coordinator, CAMH Library
Centre for Addiction and Mental Health

Christine Goodair

Programmes Manager (Substance Misuse)
St George's University of London

The SALIS Digitization Project, or Digs, as it is called by the SALIS Advocacy Committee project members is an ongoing activity to create an ATOD digital archive of books and government documents, in partnership with the San Francisco based Internet Archive. With the loss of over 30 of the specialized ATOD libraries over the last decade, and concomitantly the loss of SALIS members, this project was viewed as one way to preserve the literature of the field, as well as making it more accessible.

Keywords

Digitization, Preservation, Alcohol history

The project's history

By Andrea Mitchell

In 2012, an editorial written by the members of the Advocacy Committee, entitled *Collective Amnesia*, sought to inform the field of the devastating loss of many of the specialized ATOD libraries and databases which had developed over decades along with the field. (Mitchell et. al, 2012). Creating digital archives was one of the recommendations of the group, and one which SALIS members could do with an organized group effort. In 2013, attendees of the SALIS conference were taken on tour of the Internet Archive. All persons were asked

to bring one book each for digitization so that we could have an official start to the envisioned SALIS Archive. Brewster Kahle, Director of the Internet Archive, led the tour and informed the group of what the IA had been doing to put various library collections into digital format and make them accessible via their website. His charisma and the work that the Archive had already accomplished convinced many in the group to push this project forward.

Digs Phase 1 (2011-2014) included presentations about the project at SALIS conferences; articles in *SALIS News* to further inform members of the project and the need for donated books; creating a special database to keep records of books/docs donated, and to provide a mechanism to prevent duplication of donations; raising seed monies to pay for digitization; documenting members donations in the database; receiving and submitting materials to the Archive; responding to NIAAA solicitation for what to do with their library; receiving notification that SALIS had been selected to receive the NIAAA books library; and selecting materials from the NIAAA library's 237 page book list.

Unfortunately, in the fall of 2013, the Internet Archive had a fire in their scanning room, and among the materials which were consumed in the fire was a box of SALIS donations. Since then some of those titles have been received again and it is expected that all will be replaced as the project continues.

Digs Phase 2 will consist of making the final selections from the NIAAA library (which has now been completed); seeking more involvement from SALIS members to send physical copies or upload digital copies; and continuing to look for more funding, possibly through crowd sourcing and/or grant possibilities.

[The SALIS Collection: Alcohol Tobacco and Other Drugs](#) is easily found at the archive.org site, or by searching Google, and is available to anyone anywhere in the world to browse or borrow for up to two weeks.
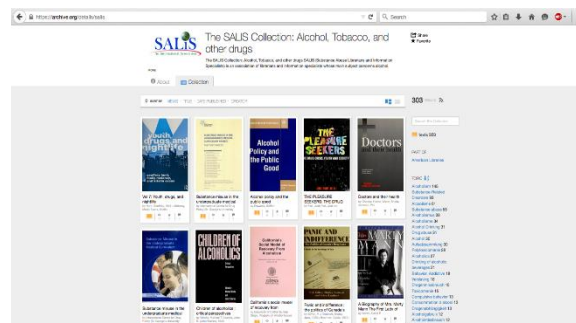
Figure 1

As of May 2015 there were over 300 books, with 532 views of the materials thus far. However, by June 30th views had increased to 1,459, presumably due to SALIS 2015 conference attendees being made aware of the collection. Material is searchable via creator (author), title, date and subject. Subjects are Library of Congress subject headings and have been assigned via records from World Cat.

The internet Archive offers hundreds of collections, and some contain other ATOD material which may be of interest to SALIS members. The video section "Feature Films" offers several of the classic drug and alcohol films, such as *Reefer Madness* and *Ten Nights in a Bar Room*; UCSF Tobacco Industry Videos contains numerous cigarette commercials, as well as anti-smoking spots. See also Chris Goodair's presentation for UK ATOD documents found at the Wellcome Library, another collection in the Archive.

The SALIS Database: Tracking books in the digitization pipeline

By Nancy Sutherland

To help SALIS keep track of books submitted for digitization in The SALIS Collection, a simple web-based database is available in which members can enter a simple record for each book submitted. The database is for our convenience and to help make the best use of scarce resources for this project.

The aim is to have a manageable, orderly process that's not too taxing for participants (including SALIS Home). Using the SALIS database to manage the books coming from many sources will allow members (whether they're contributing books or not) to:

- ✓ Know what titles are in the DIGs "pipeline;"
- ✓ Avoid wasteful duplication of book sent for digitization;
- ✓ Monitor progress from Selection to Collection;
- ✓ Recommend books that should be added to the collection;
- ✓ Keep a record of individual member's contributions, including contributions from donors. This information is useful when thanking donors who contribute books or dollars for the SALIS Collection.

The SALIS book database is built with Inmagic DBTextworks, and is housed on a server at the University of Washington Alcohol and Drug Abuse Institute. The format and function of the database is familiar to SALIS members, because it's similar to what is used for membership renewals, conference registration, and abstract submissions for conference presentations. A quick link allows users to view all books entered by SALIS members or SALIS Home in the database to check on their status. The entry form has 3 sections: Bibliographic Data, Contributor Information, and Processing Status. This book database is intended for the use of SALIS members only, and is not available to the public.

Figure 2. Sample record in SALIS DIGs Database

SALIS DIGS – Further digging: Investigating partnerships and possibilities

By Sheila Lacroix

The diversity of SALIS membership offers a range in possibilities for developing The SALIS Collection hosted on the Internet Archive (IA). We have unique collections and may find we have local IA partners. At the visit to the Internet Archive organized for the 2013 SALIS Conference held in San Francisco, it was learned that the University of Toronto Libraries (UTL) has an Internet Archive scanning center on campus, housed in the main library. The former Chief Librarian at UTL, Carol Moore, was a strong supporter of the IA; UTL has scanned over 370,000 books over the years. One UTL collection is that from the Robarts Library.
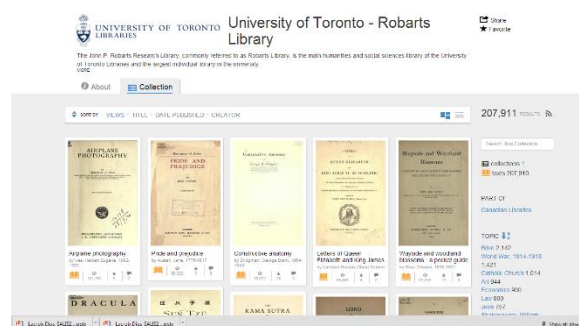
Figure 3

As CAMH is situated close by, it was decided a meeting was in order to discuss possibilities. In the CAMH library collection there is a complete set of former Addiction Research Foundation (ARF) monographs, most in duplicate, that should be added to the SALIS Collection. It would make sense to have these digitized locally. UTL digitizes primarily 'out of copyright' resources, so CAMH, of which ARF is a founding partner, would have to provide copyright clearance to have these digitized. Also, UTL will only digitize books held in its collection, so ARF resources will have to be identified in UTL collections for digitization. In spite of these limitations, it

does provide possibilities of saving some time and energy. In summary, exploring the possibility of local partnerships is encouraged and can be fruitful.

Now that we have the nucleus of a valuable collection, it is time to move on to the next phase and firm up a collection policy. The emphasis is still on books and major documents. Ephemeral literature will probably have to wait unless specific funding for a special collection can be arranged. Books and documents reflecting local, state, or provincial issues are welcome, as are resources of a national or international perspective. The collection is not limited to alcohol. This is an ATOD (alcohol tobacco and other drugs) collection.

Many SALIS libraries are experiencing downsizing and if a library does not have an archival function, often older editions are discarded. Members are encouraged to donate duplicates, books by well-known authors at their institutions, books rarely borrowed, or older editions of current books. Also, the DIGS team wants to know of any special collections as these should be flagged. Downsizing and weeding provides an excellent opportunity to preserve core resources in the ATOD field, making them available to all online through The SALIS Collection and thus offering a permanent home and a stable address.

SALIS DIGS: European contribution

By Christine Goodair

Europe and the UK have experienced similar problems relating to down-sizing and loss of the many specialist documentation centers covering drugs and alcohol. This had an impact upon European Association of Libraries and Information Services on Addictions (ELISAD), the European equivalent of SALIS, and in 2013 the remaining members of ELISAD made the decision to close the network and to merge with SALIS, recognizing that the two associations had worked very closely

together for many years, exchanging information and supporting one another's conferences and projects (SALIS DIGS being an example).

It is interesting to find that in a 1945 essay for *The Atlantic* entitled "As We May Think ," (Bush, 1945) an American engineer named Vannevar Bush (*Figure 4*, left) proposed a system called the Memex (memory index), into which people would compress all manner of books and information. His vision was of a library of collective knowledge stored in a piece of machinery described in his essay as "a piece of furniture." This idea was clearly an early vision of the Internet Archive that we have today, and are contributing to.
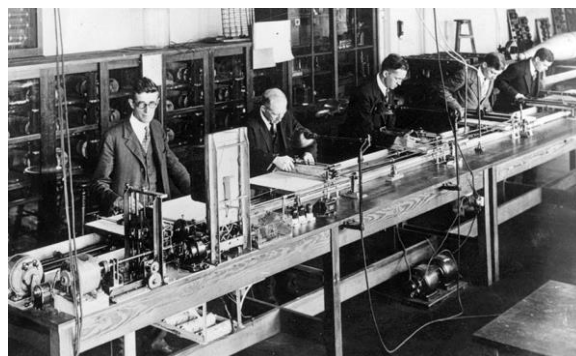
Figure 4 (Picture: Getty Images)

From Europe and the UK there are many major libraries contributing to the Internet Archive. These include London School of Hygiene & Tropical Medicine Library & Archives Service, Wellcome Library, University College London, National Central Library of Florence, and other European libraries.

Despite the amount of items covering a wide array of subjects from Europe and North America, the amount on addiction sciences was limited. SALIS DIGs has provided a way for key, seminal texts from the UK and Europe to be part of the collection. To this end, recommendations for items to be included in the SALIS collection were sought from both SALIS and ELISAD members and a master list produced. The master list was then checked

for duplicates and then the DIGS project group each looked at aspects of the list, with me, personally, recommending the key UK and European texts for inclusion in the first tranche of books for digitizing.
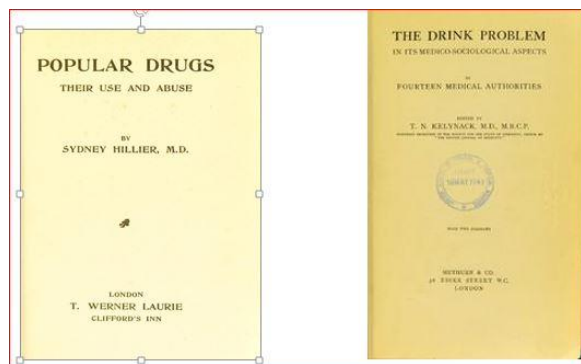
Figure 5
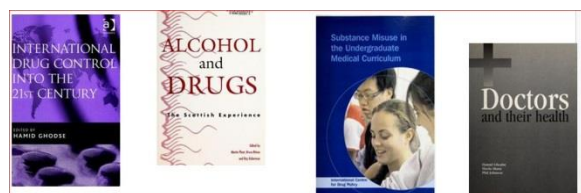
Figure 6
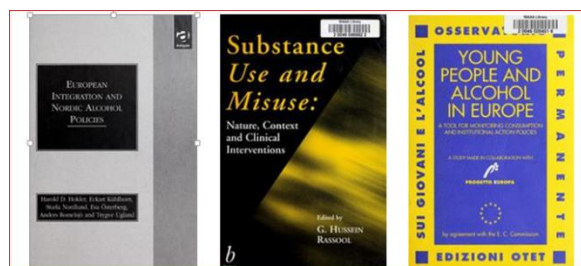
Figure 7

References

Bush, V. (1945, July). As we may think. *The Atlantic.* Retrieved from http://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/

Mitchell, A. L., Lacroix, S., Weiner, B., Sutherland, N. & Goodair, C. (2012) Collective amnesia: Reversing the global epidemic of addiction library closures. *Addiction* 107 (8), 1367-1368

Contact the authors

Andrea Mitchell, MLS
P.O. Box 9513
Berkeley, CA 94709-0513
Tel: 510-865-6225
amitchell@salis.org

Nancy Sutherland, MLS
irector, Library and Information Services
Alcohol and Drug Abuse Institute (ADAI)
University of Washington
1107 NE 45th Street, Suite 120, Box 354805
Seattle, WA 98105-4631
Phone: 206-685-9464
Fax: 206-543-5473
nsutherland@adai.washington.edu

Sheila Lacroix, MLS
Library Coordinator
CAMH Library
33 Russell Street
Toronto, ON Canada M5S 2S1
416 535-8501 x36982
sheila.lacroix@camh.ca

Christine Goodair BA (Hons) FRSA
Programmes Manager (Substance Misuse)
Population Health Research Institute
6th Floor,Hunter Wing
St George's,University of London,
Cranmer Terrace
London SW17 ORE
cgoodair@sgul.ac.uk

Scholarly selfies in addiction: Your online professional profile

Judit H. Ward

William Bejarano

Center of Alcohol Studies
Rutgers, The State University of New Jersey

Anikó Dudás
Pázmány Péter University

"Scholarly selfie" is a term coined by Judit Ward for in-house use in 2014 based on the 2013 Oxford Dictionaries' word of the year (The Oxford Dictionaries…, 2013). It was later popularized in conferences by the authors and came to be accepted in the academic librarian community. The term serves as shorthand for social media-based academic and professional profiles, which are designed to capture and depict contributions to the field as a means of increasing visibility, gaining quick access to information, and finding potential collaborators working in similar areas. This poster was designed to demystify the glut of available professional and scholarly social media profiles, such as LinkedIn, ResearchGate, Academia.edu, Google Scholar Citations, Microsoft Academic Search, MyNCBI, ORCID and others via a guided tour through the maze of these available platforms. In an attempt to understand and organize scholarly social media, the authors reviewed and classified the major academic profile platforms, highlighting the overlapping elements, benefits, and drawbacks inherent in each (Ward, Bejarano, & Dudas, 2015).

A product of both the Open Science movement and the rise of the Social Web, scholarly social media platforms have exploded in recent years, leaving many in the field of academia and beyond overwhelmed. Much to the potential dismay of this network of communities, the decision to participate in this phenomenon is one that is often beyond their control. Ignoring one's online presence can lead to a gross misrepresentation of one's scholarly output and scientific contributions, reflected in both traditional and alternative metrics. On the other hand is the potential to spend far too much time with the process of selection, registration, and maintenance required to accurately portray one's online presence.

The poster aims to ease this burden by offering an organized overview of the many options for addiction professionals to promote their online presence. The poster points out the great potential of these platforms in terms of increasing discoverability and opportunities for collaboration across geographical and disciplinary borders. Although many of these profiles are limited to users with academic affiliations, the authors make suggestions about how to overcome these limitations and guide the user to the appropriate platforms for their specific purposes. Conference

participants received an update on the new developments in scholarly social media, useful for librarians, information professionals, and addiction specialists.

References

The Oxford Dictionaries word of the year is...(2013). Retrieved on March 18, 2015 from http://blog.oxforddictionaries.com/2013/11/word-of-the-year-2013-winner/

Ward, J., Bejarano, W., & Dudás, A. (2015). Scholarly social media profiles and libraries: A review. *LIBER Quarterly, 24*, 174-204. **http://liber.library.uu.nl/index.php/lq/article/view/9958**

Bunky's scholarly selfie: Critical edition of E.M. Jellinek's bibliography

Judit H. Ward

William Bejarano

Center of Alcohol Studies
Rutgers, The State University of New Jersey

Daniel Geary
Holy Family University

This poster was designed in part to commemorate the 125th anniversary of the birth of E. M. Jellinek, showing the efforts of the Center of Alcohol Studies (CAS) Library in creating his critical bibliography. Existing bibliographies had been found to be incomplete list and inaccurate. To date, E. M. Jellinek's only publicly available bibliography (Popham, 1970) begins with an article dated 1940, when he was already 50 years old. An observant, reflective, and prolific writer, Jellinek had started to publish much earlier. However, his work from the preceding years could not previously be addressed due to a scarcity of information and language barriers. Seizing a unique opportunity, the authors took on the courageous task of creating Jellinek's complete bibliography in order to shed light on his scholarship that had not been captured by those earlier bibliographic attempts.

Based on previous records collected by CAAAL staff, this critical bibliography builds upon the latest developments of research in Jellinek's early life, first presented at the 2014 SALIS conference. CAS Library staff verified Jellinek's Hungarian past and found publications written in the less well-publicized periods of his life, such as the

mysterious "banana book," written under a pseudonym while working in Central America (Goldstein, 2014). These discoveries opened up avenues to add new records from the years prior to 1939 (his pre-alcohol studies years), along with items published during his time working for Worcester State Hospital. In addition, numerous versions of Jellinek's alcohol-related publications have been found and added.

The poster notes the process of discovering potential new entries, locating new items, and sorting out versions, editions, and reprints: a painstaking but also exciting set of tasks. Always the innovator, Jellinek was instrumental in establishing and developing the alcohol studies framework at its inception, including the organization and distribution of its body of literature (Jellinek, 1941). The poster is intended to capture this spirit, imagining Jellinek's activity in our current age of information. Taking his pioneering efforts to its logical conclusion, Jellinek very well could have created a distinct social network for addiction scientists, which we have dubbed "ATODSCHOLARNET." Depicted in the center panel of the poster is a mock profile page for this fictional network, complete with a list of

Jellinek's publications, metrics (both real and imaginary, the latter marked with asterisks), and qualitative assessment of his complete scientific output based on the data extracted from his bibliography.

This poster aims to call attention to the responsibilities of librarians when they try to make collections accessible with new technology, and discloses some unexpected tasks and surprising findings they may have to face along the way. The poster also highlights the international collaboration of scholars and librarians, who were essential in completing a project of this magnitude.

References

Goldstein, S. (2014). The "banana book" by E.M. Jellinek. *Substance Abuse Library and Information Studies, 1,* 62-66.

Jellinek, E. M. (1941). The Abstract Archive of the Quarterly Journal of Studies on Alcohol. *Quarterly Journal of Studies on Alcohol, 2*, 216-222.

Popham, R. E. (Ed.) (1970). Alcohol and alcoholism: papers presented at the International Symposium in memory of E.M. Jellinek, Santiago, Chile. Toronto: University of Toronto Press.

Finding Substance Abuse Resources for your Community: An interactive online training & toolkit for Washington State

Meg Brunner

Nancy Sutherland

Jennifer Velotta

Alcohol & Drug Abuse Institute Library and Clearinghouse
University of Washington

Substance abuse is a health and social problem of concern to individuals and communities in Washington State. A recent report on drug abuse trends in the Seattle/King County area found that usage rates of illicit substances have continued to increase in our region, as have deaths from heroin overdose, DUIs related to marijuana use, and reports of multi-drug use at treatment intake (particularly the combination of heroin with other substances, like methamphetamine and cocaine) (Banta-Green et al., 2014). At the same time, the Affordable Care Act and other policy changes are increasing the role of primary care and behavioral health providers in the assessment and treatment of addiction.

As substance use disorders (SUDs) continue to impact people in our communities, treatment providers, parent and community organizations, addiction counseling students, and other stakeholders are seeking valid and reliable information about how best to provide support to those who are suffering. The information needs of these groups range from basic education and prevention resources all the way to the need to monitor statistics and trends, provide referrals, prevent overdoses, and learn about evidence-based interventions.

The [Alcohol & Drug Abuse Institute Library](#) and [Clearinghouse](#) at the University of Washington has a strong focus on the dissemination of current, valid, and reliable research, treatment, and prevention information to communities in our state. While we have developed numerous websites and materials, providing access to specialized information covering everything from drug abuse statistics to current issues like marijuana and opiate overdose, these resources are not always easy to find and use, especially for those outside of academic settings.

As a way to increase our outreach to and education of the populations in our state most in need of this information, we are developing an online kit of resources and training materials focused on finding and using the variety of information-gathering tools we have identified as particularly useful to that audience.

The eight regions of the National Network of Libraries of Medicine (NN/LM) all offer a wide range of small grants to support library and information-related projects for their members. To obtain funding for this project, we applied for and were awarded a "Health Information Services" grant for the Pacific Northwest region, intended to "support projects that educate about, advocate for, and promote the value of health information services." Other available awards focus on assessment and planning, health disparities information outreach, technology improvements, professional development, travel for exhibits at health fairs and conferences, and more. SALIS members interested in improving their organizations or doing more outreach should explore some of these funding opportunities (http://nnlm.gov/funding/).

The Finding Substance Abuse Resources toolkit will include:

(1) An online, interactive training module, developed using e-learning software Articulate Storyline, to provide easily disseminated, standardized training on locating and using a variety of web resources about SUD;

(2) A online, printable brochure presenting each of the featured resources and suitable for distribution by the ADAI Clearinghouse; and

(3) A new portal on the ADAI website to house the training and brochure and provide a single point of access for users to reliable, valid resources users may find useful in their professional or community work.

The training, brochure, and portal will focus on the following resources:

- The [ADAI Clearinghouse](#), a prevention and training resource center for Washington State featuring a range of print and online materials on SUD and related behavioral health topics;
- The [ADAI Washington State Substance Use Data & Resources](#) website, featuring statewide and county-specific content, including

statistics, treatment and public health information, state and county policy reports, and links to key agencies;

- The Learn About Marijuana website, developed as part of our ongoing work as the primary provider of public health information about marijuana for our state; and

- The StopOverdose.org website, which offers training and information on how to identify and reverse opioid overdoses using naloxone, as well as education about Washington State's 911 Good Samaritan Law.

The portal housing the toolkit may also include links to additional resources from ADAI and other reputable organizations, including the ADAI Screening & Assessment Instruments Database, useful for providers and students; MedlinePlus, a recommended source of information on substance use and related issues for community organizations and the general public; and ADAI's Substance Abuse Conferences and Trainings Calendar, which provides details on upcoming events statewide.

Use and usefulness of the toolkit will be monitored using Google Analytics, which will track the number of views and average duration of time spent watching the Storyline training module, the number of times the brochure is downloaded, and the number of visits (new and returning) and pages viewed on the web portal. We will also use Google Analytics to track which resources are most frequently accessed through the portal, helping us determine which of the various tools seem to be the most relevant to our population (important information for future outreach).

Substance use is an issue of concern for every community in our state. With the expansion of addiction services into more behavioral health and primary care settings, an increasing number of providers and other community members will be tasked with identifying and helping people who struggle with substance use disorders, leading to an increase in the need for valid information and tools at all levels of community involvement. This project will result in measurably improved dissemination and utilization of that information, which, in turn, will lead to better prevention, education, referral, and treatment for people with substance use disorders.

References

Banta-Green, C., et al. (2015) Drug abuse trends in the Seattle-King County area: 2014. Seattle: Alcohol & Drug Abuse Institute, University of Washington, 12p. http://adai.washington.edu/pubs/cewg/Drug%20Trends_2014_final.pdf

The Retention Toolkit: A resource to improve retention and engagement for substance use disorders treatment

Jennifer Velotta

Clearinghouse Coordinator
Alcohol and Drug Abuse Institute – University of Washington

Introduction

The Retention Toolkit was created by a small team composed of a research scientist, librarians, and a prevention specialist at the request of the Washington State Division of Behavioral Health and Recovery (DBHR). The Retention Toolkit is a website with eight primary education/training modules designed to assist substance use disorder (SUD) treatment programs in improving their client retention rates – specifically, to help clinicians and treatment organizations in the State of Washington improve client engagement and retention in SUD outpatient treatment settings in order to meet county retention goals. DBHR's goal is to increase the percentage of clients retained in outpatient SUD treatment for at least 90 days from 62% to 70.7% among adults, and from 65% to 76.2% among adolescents.

Topics include potential barriers, communication with clients, cultural competency, motivational interviewing, use of incentives, family involvement, NIATx, and TARGET (Washington's digital management and reporting system used by all state-funded providers to track services and outcomes). Each section of the site includes a description and rationale for the approach; tips, strategies, and success stories; resources such as links to selected online trainings, videos and webinars, and other information sources; and references and additional reading suggestions.

The Toolkit was created in support of Governor Jay Inslee's Results Washington Goal 4: Healthy and Safe Communities, through a partnership between the Department of Behavioral Health and Recovery (DBHR) and the Alcohol and Drug Abuse Institute at the University of Washington. Research indicates that remaining in treatment for at least 90 days correlates with positive outcomes, including a reduction in substance use and criminal justice involvement. Longer involvement in treatment also increases the likelihood of employment, increased earnings, and housing stability.

Next Steps

The Retention Toolkit was well received from the DBHR Regional Treatment Managers, and The Alcohol and Drug Abuse Institute was asked to partner with DBHR and Brandeis University to launch a quality improvement collaborative focused on improving client engagement and retention.

Treatment agency staff will be invited to attend webinars and conference calls focused on implementing changes to improve treatment engagement. As part of this process, they will also learn how to use the toolkit as a resource.

Brandeis University will collect data for their study and will be able to share with ADAI and DBHR their findings about the extent to which the Retention Toolkit helped increase SUD treatment retention rates.

ADAI will maintain the toolkit with resources and trainings that are beneficial to SUD staff according to feedback from the agencies involved.

For more information about the Retention Toolkit please visit http://adai.uw.edu/retentiontoolkit/

UNIVERSITY of WASHINGTON
ADAI Alcohol & Drug Abuse Institute

The Retention Toolkit: A Resource to Improve Retention and Engagement for Substance Use Disorders Treatment

Washington State Department of Social & Health Services — Transforming lives

Introduction

The Retention Toolkit is a website with **eight primary education/training modules designed to assist substance use disorder (SUD) treatment programs to improve their client retention rates**. Topics include: addressing barriers, communication with clients, cultural competency, motivational interviewing, use of incentives, family involvement, NIATx, and TARGET (WA state's digital management and reporting system used by all state-funded providers to track services and outcomes).

Each section of the site includes **descriptions and rationale** for the approach; **tips, strategies, and success stories**; **resources** such as links to selected online trainings, videos and webinars, and other information sources; and **references and additional reading suggestions**.

The Toolkit was created **in support of Governor Jay Inslee's Results Washington Goal 4: Healthy and Safe Communities**, through a partnership between the Department of Behavioral Health and Recovery (DBHR) and the Alcohol and Drug Abuse Institute at the UW.

Research indicates that **remaining in treatment for at least 90 days** correlates with positive outcomes, including a reduction in substance use and criminal justice involvement.

Longer involvement in treatment also increases the likelihood of **employment, increased earnings and housing stability**.

Goals

The Toolkit was developed to **help clinicians and treatment organizations** in Washington State improve client engagement and retention in SUD outpatient treatment settings in order to meet county retention goals. DBHR's goal is to increase the percentage of clients retained in outpatient SUD treatment for at least 90 days from **62% to 70.7% in adults**, and from **65% to 76.2% in adolescents**.

- The toolkit is **easy to use** and includes resources for individual providers, other staff who interact with clients, or entire organizations may select as most appropriate for their needs.
- The toolkit **connects users to a variety of resources**, primarily online, and particularly incorporates resources on the NIATx website.
- The toolkit offers a variety of **options to match programs' and providers' resources** and time.
- There are **helpful tips, strategies, and resources** to support program-wide process improvement.

Method

- We surveyed Washington State providers about barriers to retention and engagement, and received responses from **201 participants**. In addition, workshop attendees at the October 2014 **Co-Occurring Disorders and Treatment Conference** in Yakima provided feedback and suggestions, which were also incorporated into the final toolkit.
- A list of **barriers to treatment** was created and incorporated into the toolkit in order to address the specific needs of the outpatient treatment program.
- Eight education modules were selected based on identified barriers to treatment from the survey and feedback from DBHR and providers.
- Information and resources from the **NIATx website** were incorporated into the eight dimensions of education.
- **Articulate Storyline software** was used to design **interactive training modules** focused on effective communication methods and suitable for all members of an organization, from **front-desk staff to front-line clinicians**.

2014 DBHR WA State Provider Survey

Here are the top 10 most reported barriers from highest to lowest (with the # of times each was reported):

1. Transportation (114)
2. Lack of safe/sober housing; homelessness (40)
3. Childcare (32)
4. Lack of funding (28) (funding for treatment/co-pays, not eligible for insurance)
5. Lack of motivation (24)
6. Co-Occurring disorders (19)
7. Employment/school commitments; scheduling challenges (19)
8. Lack of family support (13)
9. Clients lack life skills to schedule and attend multiple appointments; need reminders (11)
10. Lack of services (wait times, staff shortage/large case loads; timeliness of appointments) (8)

http://adai.uw.edu/retentiontoolkit/

Results

The Washington State Department of Behavioral Health has extended funding for The Retention Toolkit, to provide for ongoing maintenance, updates, and assisting outpatient treatment agencies with any questions pertaining to using the resources included.

Brandeis University in Waltham, Massachusetts, had been doing a study related to improving retention rates in Washington State and recently extended that study to examine the impact the Retention Toolkit has on retention and engagement for state-funded providers.

The Toolkit launched on January 1, 2015 and as of April 21st, the website has had:

- **1149** sessions
- **782** users
- **3237** pages viewed

36% Returning / 64% New

New vs. Returning Visitors

Next Steps

The University of Washington's Alcohol and Drug Abuse Institute, the Washington State Department of Behavioral Health and Recovery, and Brandeis University will collaborate and launch a quality improvement collaborative focused on improving client engagement and retention.

Treatment agency staff will be invited to attend webinars and conference calls focused on implementing changes to improve treatment engagement. As part of this process, they will also learn how to use the toolkit as a resource.

Brandeis University will collect data for their study and will be able to share with ADAI and DBHR if the Retention Toolkit used as a resource was beneficial to increasing SUD retention rates.

ADAI will maintain the toolkit with resources and trainings that are beneficial to the SUD staff from feedback of the agencies.

More Information

ADAI Toolkit Contributors:
Sandra M. Radin
Meg Brunner
Jennifer Velotta
Nancy Sutherland

DBHR Toolkit Contributors:
Jason Bean-Mortinson
Lindy Blankenship
Michael Langer

Contact:
Alcohol and Drug Abuse Institute
206-543-0937
toolkit@adai.uw.edu

http://adai.uw.edu/retentiontoolkit/

Books that get to you: Bibliotherapy in addictions

Judit H. Ward

William Bejarano

Center of Alcohol Studies
Rutgers, The State University of New Jersey

Mária Palotai

National Health Center
Budapest

Beatrix Kovács

National Health Center
Budapest

Guided reading, often referred to as bibliotherapy, has been shown to be an effective complementary method in recovery. In an attempt to define bibliotherapy for addictions as a theoretical model, the authors discovered significant differences in the interpretations and applications across the disciplines and countries. Subsections of bibliotherapeutic practice include prescription-based self-help bibliotherapy (mostly in the US); creative bibliotherapy, which uses reading and writing in a creative way (Europe), and informal bibliotherapy with a strong social element such as reading groups and library recommendations (both US and Europe).

Librarians offer services and recommend resources without passing judgment. Through this process, they often become "accidental bibliotherapists" (Brewster, 2009). Bibliotherapy environments range from mental health facilities to public libraries. Potential titles include manuals, guidebooks and workbooks written by addiction professionals; self-help books; and literary classics, memoirs, and pop culture titles. Diverse audiences include addicts, those in recovery, family members, and/or other affected parties who wish to remain anonymous while seeking authoritative sources on the topic.

In a collaborative effort, the authors compare current practical uses of bibliotherapy in addictions in North America and Europe. Starting in 1976 in Hungary, bibliotherapy was first used in a psychiatric rehab center with 10-15 recovering alcoholic inpatients by a physician, staff, and a librarian. Short stories were used to focus on three main subthemes: managing everyday life, human relations, and complex moral issues (Bartos, 1980).

In 2015, the Center of Alcohol Studies Library was awarded a two-year ALA Carnegie-Whitney grant to develop a comprehensive tool to assist those in recovery by offering appropriate reading material. The project, called Reading for Recovery (R4R), aims to bridge the gap in access and discoverability between the

readers in need and the books that can enhance active coping. With its online annotated bibliographic records arranged in a searchable database, this tool will address a critical information gap.

This poster also aims to generate interest among the international members of SALIS, seeking further collaboration and exposure to those with similar endeavors across cultures. The authors are committed to involving SALIS librarians in the project.

References

Brewster, L. (2009). Reader development and mental wellbeing: The accidental bibliotherapist. Australasian Public Libraries and Information Services, 22(1), 13-16.

Bartos, É. (1980). Experiment to use bibliotherapy with alcohol patients in Hungary [In Hungarian]. *Alkohológia, 11*(4), 204-205.