A Critical Analysis of Prevention Science Framework: An Examination of Student Discipline Programs

Diana Genevive H. Layag, De La Salle University, Philippines

The Southeast Asian Conference on Education 2021
Official Conference Proceedings

Abstract
Intervention programs have been mostly the focus of many organizations in facilitating behavioral improvements. Given that mostly one of the goals of the academe is the formation of particular universal values we collectively affirm, this paper zooms into the existing programs that aim to address, on the prevention side, student discipline issues in the university. The purpose of this study is to look at prevention science, a thought system prevailing in the wider research arena, if it can be adopted to the specific setting. This paper presents a critical analysis of prevention science framework as used in proponent studies in psychology, clinical research and politics. Findings show that a prevention science research should consider risk and protective factors, developmental theory and processes, ecological analysis, good research practices and programmatic intervention research. These framework elements were used to examine the existing programs designed for the prevention of student discipline violations in a university. Gaps in the existing prevention programs as advocated by the framework, as well as the implications for student discipline program development, implementation and evaluation, are also discussed.

Keywords: Prevention Science Framework, Student Discipline, Critical Analysis

Introduction

Intervention programs have been mostly the focus of many organizations in facilitating behavioral improvements. Such practice is also exercised in educational institutions particularly where student misbehavior is presented. With well-meaning intentions and evidence-based programs developed in the educational setting, one can help but wonder if there is still something more that can be done. Given that mostly one of the goals of the academe is the formation of particular universal values we collectively affirm, this study zooms into the existing programs that aim to address, on the prevention side, student conduct issues in the university.

Academic establishments have instituted offices that provide student services and programs that serve the needs of the student population and special groups. One such service is the student conduct office, in the Philippines, usually called the student discipline office. This office primarily caters to students who have violated the university codes of student conduct as stipulated in the student manual. Upon offense, academic institutions have processes they follow in order to address the violations. Penalties, sanctions and even restorative practices to the academic community have been instituted and administered to students depending on the gravity of the violation.

Whilst effectiveness of the interventions provided have yet to be seen, it is of the author's concern that prevention programs being implemented are of equal relevance to the academic community, if not a little weightier. The purpose of this study is to look at prevention science, a thought system prevailing in the wider research arena, if it can be adopted to the specific setting.

There is a plethora of prevention programs being used in the mainstream of program implementation. However, prevention science, as this study will delve into, differentiates itself in the strict sense of utilizing this framework as developed and advocated by its proponents.

Prevention science, as the term implies, has had the predominance in Western organizations, covering fields from medicine to economics, mathematics, even criminology. MacQueen and Cates (2005) suggest that "an effective prevention science research enterprise requires that they be coordinated and integrated through all research stages—from the conceptual, to the experimental, and ultimately to the applied." Looking into the existing programs primarily designed to prevent conduct problems among university students, it is the hope of this study to consider the areas that need particular focus in program development and evaluation. Thus, using the preventive science framework, a close look at the existing programs will consider the present programs in the office, primarily those implemented to prevent occurrence of student conduct violations. Such programs are profiled based on the target behaviors, recipients and expected behavioral outcomes. Ultimately, the main purpose of this analysis will be considering how the prevention science framework can be used for student conduct violations prevention programs. This study may be significant to a paradigm shift in the mainstream practices of discipline offices. It is the belief of the author that as the cliche goes, 'an ounce of prevention is worth a pound of cure.'

Prevention Science and Research

"Prevention Science is a framework for research on how to prevent and/or moderate negative medical, social, and emotional impacts before they occur" (https://projectteachny.org). A

systematic study of preventive interventions, it aims to reduce maladaptive behaviors and to promote adaptive behaviors (http://euspr.org/prevention-science/). Hence, prevention science is about identification of risks and risk factors putting to light the observations that these risks pose on at-risk subjects of a certain phenomenon in question. Such phenomenon is what calls for interventions that prevent its occurrence (Roumeliotis, 2015).

Driven primarily from medical epidemiological research (Cates, 1995), prevention science research has spanned economics, criminology, social, behavioral and the educational arenas. Over the years, prevention research has also branched in the education setting on themes such as drug abuse, sexual violence, antisocial behavior (Miller, Brehm & Whitehouse, 1998), and bullying (Rivara, 2016).

Prevention science's risk and protective factor model is rooted in 30 years of research and evaluation. Perez-Gomez, et.al (2016) advocates this paradigm as the fundamental approach to impact in preventing behavior problems among youth.

Rivara (2016) adopts a muti-tiered prevention framework with universal, selective and indicated preventive interventions. Universal prevention programs expose all members of the target population to the intervention; at-risk youth for the problematic behavior undergo selective preventive intervention while indicated preventive intervention for those already manifesting problem behavior, in the case of their advocacy, bullying.

Developing an anti-social prevention program, Miller, Brehm and Whitehouse (1998) suggest promoting competence and resilience**,** setting clear behavioral expectations, positive behavior management, and skills training - protective factors that mitigate risks. Conyne (2010) summarizes that prevention programs should follow best practices, in which he also provided best practice prevention guidelines.

Prevention science is also being advocated in an emerging adults study that aim to interfere with potentially destructive behaviors in this life stage in between adolescence and adulthood (Schwartz & Petrova, 2019).

Method

The prevention science paradigm has been in the literature for quite some time yet, amazingly, at the time of writing this, it seems that it is not well-utilized in our country. Prevention programs are aplenty as every social institution has them in one way or another but not prevention as a science, certainly not prevention science. Thus, although helpful and interesting, this study excluded articles that are merely about prevention programs. The rationale behind such an approach is to look closely at this already existing research discipline from a critical perspective and see how these can be adopted to the current programs being run in the university where I was affiliated.

Six journal articles, particularly from proponents of the paradigm from different fields, discussing prevention science research are subjected to critical analysis of the elements advocated by the prevention science research discipline. Two of the journal papers were developmental articles in the frontiers of psychology and mental health (Coie, et al, 1993; Heller, 1996); one in social development (Catalano, et al, 2002); two in clinical research and epidemiology (MacQueen and Cates, 2005; Herman, et al, 2012); and one in politics (Roumeliotis, 2015). I was particularly interested in the development of prevention science that

the selection and inclusion of articles that discussed its framework. From a critical standpoint, a table of analysis was constructed for every article to record the prevention science framework components in their descriptive phase. Coding was undertaken for each article's descriptions. Analytical themes were developed. Notes and observations during thematic analysis were also discussed.

The critical analysis included a rigorous examination of prevention science articles that fleshed the elements of prevention science framework over the years. It should be noted that because of the remarkable pragmatism of prevention science, prevention research has ramified into different knowledge and practical spheres, as shown in the journal articles taken for the analysis. However, despite the pervasiveness of prevention science in many research domains, in multi-disciplines and multi-sectors, the analysis was focused on articles that examined prevention science more deeply than mere application of the framework alone.

The findings from the analysis were used for an overview examination of the existing programs for preventing student conduct violations. Developments in the framework seen in the articles are explored against the existing discipline preventive programs implemented in a university.

Findings: The Prevention Science Framework

Prevention science research, originally advocated in public health studies, has diverged into different disciplines. Psychologists, mental health practitioners, social and educational program developers and clinical researchers see the value in looking at prevention instead of the usual intervention approaches. A National Prevention Summit in Australia summarized that prevention intervention is a good investment and is cost-effective (Sanson, et al, 2011).

The analysis of the prevention science framework underscores the components central to prevention science research. The author's reflection of the analytical undertaking that this study entailed is also provided.

Risk and Protective Factors

Prevention science is a research discipline that primarily addresses risk and protective factors in order to prevent the occurrence of maladaptation and problem behaviors. Heller (1996) describes prevention science research as a discipline "focused primarily on the systematic study of precursors of dysfunction and health called risk factors and protective factors, respectively." Thus, this research discipline is applied before the onset of disorders, diseases or problems and aims to mitigate the risks that would effect such problems. The protective factors aspect, meanwhile, focuses on the buffers against risks for diseases or the "problematic subject" (Roumeliotis, 2015).

Identification of risks and risk factors have been at the forefront of researches conducted using this framework. Coie, et al (1993) defined these risk factors as ranging from generic ones such as family circumstances, emotional difficulties, school problems, ecological context, perinatal complications, interpersonal problems to skill development delays. These risk factors, multiple or shared, are contributory to the manifestation of multiple disorders or problem behaviors. The identification of an object (the problem) as risk, Roumeliotis (2015) accounts may make it possible for observation and measurement and, eventually for intervention, but not for the explanation of the meaning of the risk behaviors.

On the other hand, some protective factors have been cited as psychological resilience, strengths, skills, emotional advantages. These are elements that, when optimized, provides a safety net from developing the dysfunctions.

Herman, et al (2012) refers to both risk and protective factors as meaningful "targets" for assessment and intervention and are related to essential youth outcomes. The thrust, therefore, of prevention research is in the reduction of risks and enhancement of protective factors.

Developmental Theory and Processes

Taking into consideration the risk and protective elements in a prevention research, a holistic approach in preventing health and behavior problems needs to be adopted. Thus, developmental theory and models need to be integrated to better understand, and interrupt, the processes leading to problem behaviors (Catalano et al, 2002). Addressing these underlying processes using developmental theory results in the determination of the causal processes in social and behavioral dysfunctions in each domain of functioning (Coie, et al, 1993; Herman, et-al, 2012).

Moreover, being able to determine the predictors of problem behaviors, theoretical causal models of change processes may be developed in which antecedents of problem behaviors are identified and corresponding prevention interventions are provided, which would be about changing the antecedents. A buffering hypothesis, prosocial adaptation, competencies in the cognitive, social and emotional developmental domains, as well as social systems in place are some of the interventions introduced in the process and serve as buffer to problem behavior manifestation, which then affects behavioral outcomes (Catalano et al, 2002).

Ecological Analysis

Aside from the developmental processes involved in the problematic behavior's occurrence, prevention science researchers emphasize that behavior is ecologically embedded. A myriad of factors external to the person, who is a complicated system in himself, are involved in the production of behavior. Prevention science researches have been conducted with careful notice of the social, cultural and interactional transactions of people with regard to the biological entity that the person is. Thence, such ecological analysis of the manifested problem behavior considers the interdisciplinary systems taking place in the actual conduct of the behavior (Catalano et al, 2002; Heller, K., 1996; Coie, et al, 1993).

With the multi-factors involved, prevention science research calls for a multivariate investigation of causation of the problem behavior including the risk factors that would be looked more closely in this framework.

On the other hand, Roumeliotis (2015) relates this context issue in the problematic as a form of control and political accountability when the elements of the ecological analysis are threshed and enumerated, but not well-defined and understood. As provocative as it appears, this is a clear indication that risk factors for problem behaviors need to be expanded and understood from a different lens, possibly apart from a prevention science framework but clearly an expansion of the concepts or constructs discovered.

Good Practices in Prevention Science Research

Much can be gleaned from the proponents of preventive science in the respective fields this study has analyzed. One outstanding concern in conducting prevention science research is the clamor for good data, empirical evidences of theoretical models and processes and documentation of prevention program effectiveness.

Rigor in the research methodology demands that research processes are addressed in terms of sampling, measurement and appropriateness of statistical models used. Literature reviews in the studies analyzed show that prevention science researches have issues with small sample sizes, which make generalization questionable; participant attrition, in terms of recruitment and retention of participants in the experimental phases; and inadequate long-term follow-ups (Heller, 1996).

Heller continues that a prevention intervention research cycle requires that the development of prevention intervention employed "careful epidemiological and developmental research of risk and protective factors, pilot-tested, evaluated in a larger scale controlled prevention trials." This makes creating community engagement even before the commencement of a program inevitable for success. Herman et al (2012) suggest stages for intervention trials resulting to a strong knowledge base which includes problem and conceptual framework definition, conceptual framework testing, manipulation of hypothesized causal processes in the interventions design and test, successful intervention field extension, and findings dissemination.

Prevention science research is largely experimental and continuously evaluative in nature with the goal of attenuating risk factors and reinforcing protective factors for the prevention of problem issues. Predictors, mediators and outcomes should be considered in the conceptual development of a prevention research. Tools should be developed for measuring the effectiveness of the preventive interventions regardless whether the nature of these preventive interventions are universal (for the general population; mass-based) or more focused (selected population) (Coie, et al, 1993; Herman, et-al, 2012).

Research diffusion, or the dissemination of the prevention research findings, should also be considered when making studies for prevention of dysfunctions. In fact, research effectiveness should be shared in order to provide information that reaches local and state-level policy-makers.

Programmatic Intervention Research

Although programmatic intervention research may be classified in the good research practices section in this study, I opted to place it in a separate section to examine programmatic intervention research more closely.

Design in prevention programming should contain the is developmental and ecological domains and processes of the problem behavior phenomenon. Outcomes identification in the prevention programming phase should be considered in the design and target general outcome measures.

Programmatic intervention research is a "continuous, systematic collection, analysis and interpretation of related processes to guide planning, implementation and evaluation of

practices" (Herman, et-al, 2012). This process of surveillance, of continually measuring and monitoring behavior, just as public health researches monitor diseases, leads to an identification of emerging crisis, determination of intervention impact and program mediators, and ongoing information of the problematic phenomena under scrutiny. Mostly, this research focuses on skills enhancement (Roumeliotis, 2015) as opposed to the dysfunction.

Just as behavioral surveillance proceeds in the programmatic intervention research, there is also constant development, evaluation, experimentation with a continuous feedback loop in the research process. The program is being reconstructed into practical and effective applications that is not only applicable to a select few but reaches mass-based audience through community coalitions and policy levels (MacQueen and Cates, 2005).

Coming from a clinical research context, MacQueen and Cates presented a comprehensive prevention science research framework that advocates an integration of five different layers of a prevention science research from the stages of conceptual development, experimentation to the applied settings. They argue that prevention science research moves in a coordinated and integrated continuum spanning from the research stages of conceptual development to experimentation of these concepts to the applied which then looks into the effectiveness of the former in different situations, and espouse that each aspect of the continuum is made up of various layers consisting of five elements, namely (1) advocacy and policy, (2) community participation, (3) clinical trials research, (4) acceptability research, and (5) operations and program development. Meanwhile, Kellam & Langevin (2003) offer a framework that is multidimensional in order to understand the meaning of evidence in prevention science research. Context, program efficacy, collaboration and acceptance are themes that overlapped with the proposal of MacQueen and Cates' (2005) multi-layered framework.

Analytical Notes

A comprehensive discussion of prevention science framework and its components can be found in the psychological articles. Without prejudice to the field, Coie et al (1993) and Heller (1996) discussed prevention science from the point of view of a continuum. Prevention research, with its concentration to prevention of disorders, these authors started with a step-back approach to the problem. Whereas prevention research does look into the risk factors and preventive factors of disorders, the only element common among all these studies, the way the framework was slated portrayed a full scenario of a research discipline known as prevention science. As if inching towards the disorder, the authors discussed developmental processes through theory and model explications without losing an eye at the big picture, the ecology of the dysfunction. They then proceed to the research arena discussion, explaining methodological rigors then close with a deliberate mention of prevention programming. I find the presentation fascinating.

Comparing and contrasting prevention science with positive youth development framework, Catalano, et al (2002) had may things to say. Although I have seen the effort to present these two related yet separate paradigms coherently, I find the presentation of the framework of prevention science enmeshed with many things at a time, like an excited kid who has a lot of stories to tell yet limited by time, space and attention. However, what I find incredible is the way the pieces come together to create a distinct prevention science framework. The paper also talks so little about the conduct of research aside from the mention of prevention programming.

The clinical researchers in the study (MacQueen and Cates, 2005; Herman et al, 2012) discussed with precision the framework of a prevention science research. MacQueen and Cates'

(2005) proposition of the layers of prevention science research present an apparent parsimony of prevention research only to be lost in the intricacies of the process. How they go back and forth to the layers of advocacy and policy, community participation, prevention research, acceptability, and program operations and effectiveness along the continuum of conceptual, experimental and applied stages felt like a waltz to the entire research process. The dance ends with program effectiveness, community engagement and policy at state levels for a bigger, wider audience feeling like an applause for the completion of the research.

Amidst the journey of a prevention science research, Herman et al (2012) interjects the role of assessment in a prevention science framework. As if walking along the research path, the authors describe what targets to look for; encourage a wide-eyed observation of the environment for what could be luring around the corner; and always on the look-out for answers.

Roumeliotis (2015) provided an eloquent deliberation and philosophical position when he critiqued the framework. It was obvious that the author was not a fan of prevention science as he prefers a deeper understanding of concepts and constructs that were presented as disorders, dysfunctions or problems. When he expounded his thoughts to the larger political spheres, I found it heavy to take in because his contentions on finding meaning and explications for what he calls the "problematic" were not addressed by prevention science. Many of his points, I see, are not within the primary focal concerns of the prevention science research paradigm. However, this calls for a louder voice towards more interdisciplinary ventures on reaching a wider scholarly sphere and answering questions from the joint perspectives of diverse experts.

Summary

Prevention science research in the different fields have yielded considerable similarities in the framework elements. The focal point has always been the emphasis for risk and protective factors. Developmental processes and models have to be considered when doing prevention science research in order to examine the normative and change processes. Ecological analysis need to be undertaken as there are various environmental considerations in crafting prevention intervention research. Good research practices that reflect sound methodology is well advocated with enlistment of processes for a programmatic intervention research.

Exploration of Preventive Science Research to Preventive Programs

The elements of a prevention science framework are examined in light of the student conduct prevention programs in a university. Undertaken to explore the possibilities of the framework to existing programs and its implications for program development, it aims to determine "feasible research designs, sampling methodology and data collection method" (Singh, 2003).

Programs aimed at preventing discipline violations were reviewed based on the program description, objectives, target behaviors, recipients and expected behavioral outcomes using the operations manual which includes a documentation of the program description, processes and practices was examined, including observations in implementation. Core programs were defined and identified.

Assignment to the core program required consideration of the program operations' cost to time, resources and implementation. Thus, with eight (8) identified preventive programs, the core

programs were limited to three (3) in which two run at many points in time during the academic year and, thus, are regularly being conducted, while one is conducted for an entire month.

Prevention Programs in Focus: University Student Conduct Violations

The three core preventive programs identified are the discipline education programs on the university policies, the non-fraternity program of the university and an advocacy program on discipline awareness and formation. These programs are being given to the general student population. However, in terms of implementation, the programs differ considerably.

The discipline education program which contains formation lectures, orientations, symposia, seminars including curriculum integration are designed to inculcate information dissemination on the different university policies on behavior, thus reinforcing the behavior of student compliance to these codes of conduct. Although given as a mass-based program for students, the lectures are mostly introduced during the students' freshmen year, during their early days in the university. It is in this early intervention phase that the goal of preventing conduct violations in order to attain a clean discipline record upon graduation is emphasized.

Especially highlighted in the university discipline expectations is the proscription against students' engagement to fraternities and sororities, thus, the implementation of the non-fraternity program. Aside from being included in the student handbook and covered in the education program, this is further stressed upon the students' submission of a notarized contract of non-fraternity involvement. Students are also randomly chosen for interviews regarding fraternities and possible participation to these non-acknowledged organizations. Students identified to be potential or suspected members are then placed under monitoring.

The advocacy program in the office contains activities and projects that are being run on different time frames. One outstanding annual project that the advocacy section runs for a whole month is known as the discipline awareness and formation month. Similar to the education program, information dissemination is furthered through the different activities that it presents, such as exhibits, interactive games, information booths, mini-concerts and the likes. Discipline formation is a goal to attain as the target recipients are more random and general, catering not only to the first year students but to the whole student body whose presence is randomly situated in the campus. Compliance to the rules of the university is also the slogan for this advocacy. While some students may have incurred infractions already, the month-long activity aims to provide a venue for students to interact with their discipline officers and to curtail or address possible culmination of minor offenses to major violations.

Prevention Science and Existing Prevention Programs

A. Discipline Education

Given a proper understanding of prevention science, a careful review of the program manual explicates the discipline education program is not a preventive program. With emphasis on compliance to the university rules and regulations, this program is not preventive in nature but is promotive. Prevention, as the World Health Organization (2002) defines it, is keeping something from happening, while promotion is to enable people to "increase control over, and to improve their health" or outcomes. In promotion and prevention, these concepts overlap and complement. However, promotion is more in line with the objectives of this program.

B. Non-Fraternity Program

The non-fraternity program, or for the sake of alignment with the goals of this paper, is a fraternity prevention program. As a cultural phenomenon, the prohibition to be part of fraternity or sorority memberships has been a response to the media hype on the disadvantages of the affiliations to such organizations where criminal acts have been tantamount to brotherhood ideology.

Viewed from the lens of prevention science intervention programming, much still needs to be done for one to say that a preventive program exists. A more comprehensive program development of the fraternity prevention program is needed where risk and protective factors can be discussed, developmental processes are shed to light given the life transitions of students from adolescent to emerging adults, and the socio-emotional benefits that fraternity memberships address. Ecologically, the pressures of academics and other impeding variables that effect membership to fraternities need to be further explored through literature review, interviews, focus groups or survey. Although there is a surveillance system in place for monitoring this behavior, good research practices and programmatic preventive intervention will need to identify predictors of this risk behavior and develop tools for monitoring and evaluation of this intervention. Other theoretically sound prevention interventions may also be developed that focus on the protective factors.

C. Advocacy Program

Somewhat similar to the discipline education program, the advocacy program concerns more about the promotion of good student discipline. However, given that this program caters to more random students, some of whom have incurred discipline violations already, prevention of possible culmination of minor offenses and commission of major violations is an objective to pursue. Thus, a student violation prevention program may be considered for development.

Given the range of student violations a student can commit, as stipulated in the university student handbook, research on most violated policies need to be undertaken in order to create a programmatic prevention intervention program. Intervention programs that may be given universally, selectively or indicatively need to be developed bearing in mind the different audience for the programs. Risk and protective factors should also be explored when crafting the student violation preventive intervention program. Acceptability of the program, advocated by MacQueen and Cates (2005), need to be ensured in all levels - hypothetically, clinically, experientially and for the long-term. Thus, program development and operations need to continuously be evaluated and modified to be assured of program effectiveness.

Outcome criteria may also need to be developed and tools for measuring the proposed outcomes. A programmatic preventive intervention program for this type of program may be more comprehensive and might require sub-levels to address individual or clustered violations. This has implications to the office's research agenda and resources (personnel, logistics, time) and other university stakeholders.

Conclusions and Recommendations

Prevention science research has been around for quite some time. The analysis of the framework showed that the components are centered around risk and protective factors,

developmental theory and processes, ecological analysis, good research practices and programmatic prevention intervention.

Existing programs aimed at preventing student violations in a university were examined in the light of the prevention science framework as critically analyzed. Of the three core programs aimed at prevention, only two of them were considered to be able to adopt prevention science framework.

Much work needs to be done. Adopting a prevention science framework needs to adhere to the rigorous methodological assumptions of its original proponents, clinical research. Thus, a positivist approach is expected in the conduct of this research. However, since social science research inevitably deals with unstructured data, a combination of both constructivist and positivist approaches may be undertaken - quantitative and qualitative research, triangulated in studies often produce studies that are rigorous and well-founded.

This study has been limited to the programs of the student discipline formation office in the current setting. There were currently eight classified preventive programs in the student conduct office. Three has been examined using preventive science research framework. It is recommended to consider conducting the same examination to the rest of the programs to shed light into further developing programs geared towards strengthening prevention of student conduct problems.

References

Cabote, C.J., Bramble, M., & McCann, D. (2015). Family caregivers' experiences of caring for a relative with younger onset dementia: A qualitative systematic review. *Journal of Family Nursing.* 1-26

Catalano, R.F., Hawkins, J.D., Berglund, M.L., Pollard, J.A., & Arthur, M.W. (2002). Prevention science and positive youth development: Competitive or cooperative frameworks? *Journal of Adolescent Health.* 31: 230-239

Cates, W. Jr. (1995). Prevention science: The umbrella discipline. *American Journal of Preventive Medicine.* 11 (4), 211-212

Coie, J.D., Watt, N.F., West, S.G., Hawkins, J.D. Asarnow, J.R., Markman, H.J., Ramey, S.L., Shure, M.B. & Long, B. (1993). The science of prevention: A conceptual framework and some directions for a national research program. *American Psychologist.* 48 (10): 1013-1022

Conyne, R.K. (2010). *Prevention Program Development and Evaluation: An Incidence Reduction, Culturally Relevant Approach.* SAGE Publications, Inc. p.30-32

Harachi, T.W. (2002). A prevention science framework aimed at delinquency. *118th International Training Course Visiting Experts' Papers. Annual Report for 2000. Resource Material Series No. 59.* Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders (UNAFEI) Fuchu, Tokyo, Japan October 2002. p.183

Heller, K. (1996). Coming of age of prevention science: Comments on the 1994 National Institute of Mental Health - Institute of Medicine Prevention Reports. *American Psychologist.* 51 (11): 1123-1127

Herman, K.C., Riley-Tillman, T.C. & Reinke, W.M. (2012). The role of assessment in a prevention science framework. *School Psych Rev.* 2012; 41(3): 306–314.

Kellam, S.G. & Langevin, D.J. (2003). A framework for understanding "evidence" in prevention research and programs. *Prevention Science.* 4 (3), 137-153

MacQueen K.M. & Cates W.Jr. (2005). The multiple layers of prevention science research. *American Journal of Preventive Medicine.* 28 (5): 491-5.

Miller, Gloria E., Brehm, K., & Whitehouse, S. (1998). Reconceptualizing school-based prevention for antisocial behavior within a resiliency framework. *School Psychology Review,* 02796015, 27 (3).

Perez-Gomez, A., Mejia-Trujillo, J., Brown, E.C., & Eisenberg, N. (2016). Adaptation and implementation of a science-based prevention system in Colombia: challenges and achievements. *Journal of Community Psychology,* 44 (4), 538–545

Prevention Science. (n.d.) Prevention Science | SPAN | Mapping Prevention Science across Europe (euspr.org) Retrieved from https://euspr.org/prevention-science/

Rivara, Frederick P. (2016). *Preventing Bullying Through Science, Policy and Practice.* Washington, DC: National Academies Press. p.179-184

Roumeliotis, F. (2015). Politics of prevention: The emergence of prevention science. *International Journal of Drug Policy.* 26, 746-754

Sanson, A.V., Havighurst, S.S., & Zubrick, S.R. (2011). The science of prevention for children and youth. *Australian Review of Public Affairs*. 10 (1), 79-93

Schwartz, S.J. & Petrova, M. (2019). Prevention science in emerging adulthood: A field coming of age. *Prevention Science*.

Singh, K. (2007). *Quantitative Social Research Methods.* SAGE Publications, p.64

Stebbin, R. (2001). *Exploratory Research in the Social Sciences.* SAGE Publications

World Health Organization. (2002). Promotion and prevention in mental health. Mental health: Evidence and research. Department of Mental Health and Substance Dependence. Geneva, Switzerland.

Why is Prevention Science So Important? (n.d.) Project TEACH. Retrieved from https://projectteachny.org/prevention-science/