

## **Strategies for Universal Prevention of Depression in Adolescents**

**Patrick Pössel**

Dep. Clinical and Developmental Psychology,  
Eberhard-Karls-University, 72072 Tuebingen, Germany

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### **ABSTRACT**

**Background:** The occurrence of depressive disorders in adolescence is of high individual and social importance because of their prevalence and persistence into adulthood and their co-morbidity with other psychological disorders and psychosocial problems. International researchers have recognized the seriousness of depressive disorders in adolescence and thus have been involved in the development and evaluation of prevention programs.

**Methods:** This article will present the difficulties encountered in prevention research with adolescents and in the determination of prevention program efficacy. The main focus will be an overview of current prevention programs and their efficacy with special attention paid to programs featured in the German language literature. Finally, this article will highlight future directions for prevention research.

**Conclusions:** In spite of some critical points, there appears to be a positive outlook for depression prevention programs for adolescents. There is currently support for universal depression prevention programs that may be incorporated into school settings and on which future research may build. It is expected that the methodological problems highlighted in this article may be corrected in the next few years, which may result in more effective, easily integrated programs and a more thorough understanding of adolescent depression.

**Keywords:** Depression, universal prevention, adolescents

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The Global Burden of Disease Study of the World Health Organization (WHO) and the World Bank has shown that depression is one of the most common and limiting disorders worldwide (Murray & Lopez, 1997). Further, due to the high direct and indirect costs incurred by this disorder, depression is an important public health issue. According to international epidemiological studies, 15-20% of minors (individuals younger than 18 years) have experienced at least one depressive episode (Birmaher et al, 1996); the incidence rises steeply after 13 years of age (Wade et al, 2002). A depressive disorder during adolescence increases the long-term risk for the recurrence of a depressive episode during adulthood (Weissman et al, 1999) as well as for other psychological disorders (Birmaher et al, 1996; Kasen et al, 2001; Orvaschel et al, 1995). Depressive symptoms and disorders also interfere with interpersonal functioning and school performance (Birmaher et al, 1996; Last et al, 1997). Additionally, three-fourths of minors do not receive any or adequate treatment, which causes more stress on the individual and social system (Rohde et al, 1991). Of the treated adolescents, many receive treatment only after they have experienced considerable difficulties in school or with the legal system; these

difficulties may then escalate their problems (Greenberg et al, 2001).

Considering these data, there is a pressing need for efficacious treatment and especially for effective depression prevention in adolescents. Taking such steps could result in a reduction in depressive disorders and their associated problems in adults.

### **Operationalization of Terms and Background: Prevention Programs**

Prevention has been traditionally divided into three types: primary, secondary, and tertiary prevention. Due to the unclear division between prevention and treatment, however, these classifications have been viewed as problematic and have been replaced with a new classification system that differentiates among prevention, treatment, and maintenance interventions (Munoz, Mrazek & Haggerty, 1996).

The term, *prevention intervention*, describes all interventions that take place before the first symptoms of a psychological disorder appear. A *treatment intervention* is an intervention that is initiated during an active psychological disorder, and *maintenance interventions* include aftercare and relapse prevention programs. Compared to the numerous treatment and maintenance depression interventions for adolescents, the literature on prevention interventions is rather rudimentary (Wiesner & Reitzle, 2001).

Prevention interventions also vary according to the population to which they are applied. Selective prevention programs are employed for groups at-risk for a certain disorder. For example interventions for adolescents with sub clinical depression (Clarke et al, 1995; Jaycox et al, 1994; Lewinsohn et al, 2000) and children with depressed parents (Klein et al, 2001). On the other hand, universal prevention programs are applied to a general population, regardless of individual risk.

It is important to differentiate between selective or universal prevention programs at the beginning of program development so that the target population may be defined. One advantage of selective prevention is that it is more cost-efficient than universal prevention because it is only applied to a specific risk group instead of the general population. Second, adolescents who are currently experiencing problems may have higher motivation to take part in such a program (Jaycox et al, 1994). Moreover, it is expected that the effect sizes for a universal prevention program would not be as high as those for selective programs. This expectancy arises from the consideration that fewer adolescents in the general population have high depression scores and the average level of depression is lower than in at-risk adolescent populations. Thus, the evaluation of a universal prevention program requires a much larger sample than is necessary for a selective program.

On the other hand, even low-risk adolescents may benefit from the skills training in depression prevention programs (Harrington & Clark, 1998). Gillham et al (2000) argue that selective programs may have larger effects for individual participants, but universal programs have multiple smaller effects on a larger number of participants, which may, in turn, have an enormous effect on the larger society. Furthermore, adolescents with more developed skills in a particular area may serve as models for peers who have less

developed skills (Lowry-Webster et al, 2001). All of these arguments were supported by a meta-analysis conducted by Jane-Llopis et al (2003), which indicated effect sizes of  $d = 0.31$  and  $d = 0.21$  for universal and selective prevention programs, respectively. It is also important to consider the methodological challenges typical of selective prevention programs, such as difficulty building a sufficient sample size (recruitment) and high attrition rates that may limit the generalizability of the results and thus the wider use of selective programs.

According to Shochet et al (2001), these challenges may be rooted in the importance of peer acceptance among adolescents and in the fear of stigmatization as a result of participation in a selective program. Such an interpretation points to the potential difficulty in applying a selective prevention program outside of a controlled trial. The labelling of adolescents as “at-risk” may lead to negative self-evaluations and may adversely impact the adolescents’ social networks. Such a combination of individual and environmental effects could precipitate future depressive episodes (Harrington & Clark, 1998).

On the other hand, a universal prevention program may positively affect the social environment of at-risk adolescents (Spence, 1998). The previously discussed points have led some researchers to favour universal prevention programs in the school setting, in which a great number of adolescents may be reached (Hurrelmann & Settertobulte, 2000; Shochet et al, 2001). The current report will thus focus on evaluations of universal prevention programs. Reviews of the literature on selective programs have been previously published elsewhere (e.g., Greenberg et al, 2001; Possel & Hautzinger, 2003).

In the evaluation of the efficacy of prevention programs in general and universal programs in particular, it is important to be aware that the prevalence of depression in the normal population is not high enough to be able to document the efficacy of the prevention program in terms of the emergence or prevention of diagnosable anxiety or depression according to the DSM-IV (Saß et al, 1996) or ICD-10 (Dilling et al, 1992). In order to document such changes, researchers would need unrealistically large samples. Accordingly, the goal of a universal program is typically to reduce or hold constant the experience of depressive symptoms; not to reduce the number of depressive episodes in nonclinical or sub clinical adolescent populations.

### **Universal Prevention Programs in an Adolescent Population**

In the following section, I will present the research groups involved in universal prevention program development, their programs, and the results of their studies (Refer to table **Table 1**).

**Table 1:** Summary of the Prevention Programs and Results of Efficacy Studies

<b>Program Name</b>	<b>Authors</b>	<b>Target Group</b>	<b>Program Description</b>	<b>Trainer/ Group Size</b>	<b>Results</b>

Group program for Depression Prevention	Clarkes et al (1993)	9 <sup>th</sup> & 10 <sup>th</sup> graders	1. Program: 3, 50-minute sessions 2. Program: 3, 50-minute sessions	1. Program:-/ complete classes 2. Program:-/ complete classes	Both Programs: No effects on depressive symptoms
Resourceful Adolescent Program (RAP)	Shochet et al (1997); German Version	9 <sup>th</sup> graders	a) 11, 40-50-minute sessions (pupils) b) See a) & 3, 180-minute sessions (parents)	a) -/8-12 pupils b) See a) & parents sessions two trainers/-	Reduction in Depressive symptoms, no parent session effects
Problem Solving for Life Program (PSFL)	Spence et al (2003)	8 <sup>th</sup> grade	8,45-50-minute sessions	teacher/complete classes	Short-term improvement of depressive symptoms, no long-term effects
Lust An Realistischer Sicht & Leichtigkeit Im Sozialen Alltag (LARS&LISA)	Pössel et al (2003)	7 <sup>th</sup> & 8 <sup>th</sup> graders	10, 90-minute sessions	2 trainers/classes divided by gender	Improvement in depressive symptoms

*Note.* - = no data

### **Universal group programs for depression prevention**

Clarke and colleagues (Clark et al, 1993) developed two school-based cognitive group treatments for universal depression prevention in adolescents in the 9th and 10th grades. Both programs were based on the multifactorial depression model (Lewinsohn et al, 1985) and included all students of a class. The programs built on one another such that the second program was improved based on the experiences gained in the first. The first of these school-based groups consisted of three, 50-minute sessions. A psychoeducational model was used to convey information about depression to the participants, including symptoms, causes, and treatment of depression. The evaluation of this program indicated no effect of the treatment on the adolescents' depressive symptoms. Thus, Clark et al (1993) developed a second program, which consisted of five, 50-minute sessions. The original psychoeducation module was abbreviated and presented in conjunction with behavioral skills training that focused on an increase in the number of positive activities. This program did not have an effect on the adolescents' depressive symptoms.

The findings of Clarke et al. (1993) indicated that neither pure psychoeducation, nor the addition of positive activity building are effective methods for depression prevention in

the context of universal prevention programs. The finding that a positive activity module had no effect on the development of depression in the context of a universal prevention program may have resulted from the fact that there are few adolescents in a sample of the general population who evince pronounced social withdrawal. Although these first attempts to develop a school-based, behavioral universal prevention program did not appear to be effective, they laid the groundwork for later, more effective programs.

### **Resourceful Adolescent Program (RAP)**

Two versions of the “Resourceful Adolescent Program” (RAP) were developed and validated with 9th grade adolescents (Shochet et al, 1997a; Shochet et al, 1997b). The “Resourceful Adolescent Program-Adolescent” (RAP-A) is a school-based group program run by a trainer with 8-12 pupils at a time. RAP-A consists of 11, 40-50 minute sessions. The goal of RAP-A is to develop and support resilience factors in the students. To this end, the first seven sessions are strongly cognitive-behaviorally based and teach the students self-management and problem-solving skills; two of the sessions are especially focused on cognitive restructuring. Sessions 8-10 address interpersonal risk factors and strengthen protective factors in adolescent development. In doing so, these sessions enrich participants’ ability to build and maintain a social network and teach skills in conflict de-escalation within the family.

The “Resourceful Adolescent Program – Family” (RAP-F) consists of the RAP-A as well as three group sessions involving the parents of the participants. The 3-hour parent sessions are led by two trainers and are held in the evening, to facilitate parent participation. The foci of the first session include identification of the existing strengths of the participating parents, determination of problem situations and how to deal with them, and instruction on effective parenting skills. In the second session, parents learn about normal development during puberty, strategies to support adolescent self-esteem, and balance between independence and attachment in the parent-adolescent relationship. In the third session, trainers and parents discuss strategies for the promotion of positive family relationships and conflict resolution.

The first evaluation study of this program indicated that participation in the RAP-A and RAP-F led to a decrease in depressive symptoms at the posttest and 10-month follow-up (Shochet et al, 2001). Differences in the efficacy of RAP-A and RAP-F were not found. Specifically, parent involvement in this prevention program did not further decrease depressive symptoms in adolescents. In interpreting the results of the Shochet et al (2001) study, it should be pointed out that (a) clinically affected adolescents were not included in the data analyses and (b) the authors did not report controlling for potential correlations among students in a class (Hopkins, 1982). The latter issue may have confounded the findings, because the grouping of the students (e.g., in a class) may lead to a transactional process of influence between an individual student and the group. Thus, individuals in a specific group may differentiate themselves from other groups (Goldstein, 1995). Furthermore, the authors did not make any alpha adjustments in the posthoc tests performed, which may have led to an overestimation of the treatment effect (Shochet et al, 2001).

Such methodological shortcomings may also limit the interpretability of the second evaluation of the RAP, which was conducted in New Zealand (Merry et al, 2004). The authors of this study trained teachers in the RAP method and compared the RAP with a placebo intervention. Immediately following the program, participants reported fewer depressive symptoms. At the 18-month follow-up, persistent improvements were found on the Reynolds Adolescent Depression Scale (RADS) (Reynolds, 1986), but not on the Beck Depression Inventory (BDI) (Beck et al, 1988). This study also did not take into account the intercorrelations among students in a particular class, which, as mentioned above, could lead to difficulties in interpreting the findings (Hopkins, 1982). Additionally, no Bonferroni adjustments were applied to the posthoc tests. After adjusting the alpha level, there remains only a significant effect for the pre-post, but not the follow-up comparison for the BDI. A positive aspect, however, should be acknowledged; unlike many other studies, this study used a placebo control group. These methodological shortcomings, however, make it difficult to interpret the findings in the context of other studies.

### **Problem Solving for Life Program (PSFL)**

In the “Problem Solving for Life Program” (PSFL) (Spence et al, 2003), 8th graders learn to identify thoughts, feelings and problem situations. Participants learn about the associations among these variables as well as cognitive restructuring and problem-solving techniques. The entire program consists of 8, 45-50 minute sessions and is conducted in class by teachers.

In one efficacy study, 1500 adolescents between 12-14 years old were divided into high and low depressive-symptom groups (Spence et al, 2003). The criteria for the high and low depressive-symptom groups were BDI scores of  $\geq 13$  and  $< 13$ , respectively. Participants in the high depressive-symptom group were administered structured interviews to diagnose major depression, dysthymia and bipolar disorders at pretest and 12-month follow-up.

Among the high depressive-symptom adolescents, the pre-posttest comparison evinced a significant decrease in depressive symptoms in the PSFL group versus the no-treatment control group. At the 12-month follow-up, however, the authors could no longer detect an effect of the intervention among high depressive-symptom participants (Spence et al, 2003). Further, there was no significant difference between the groups on incidence rates of depressive disorders at the 12-month follow-up (PSFL: 9.9 %; control group: 8.4 %). In the low depressive-symptom group, there was an increase in depressive symptoms in the control group between pre- and posttest, which was not observed in the PSFL group. At the 12-month follow-up, there were no significant differences in self-reported depressive symptoms. In conclusion, the PSFL program had short-term, but no long-term effects on the depressive symptoms in adolescents. One possible reason for the lack of long-term effects may have been the brief nature (8, 45-minute sessions) of this intervention.

### **Desire for a Realistic View and Ease in Social Aspects of Everyday Life [Lust An Realistischer Sicht & Leichtigkeit Im Sozialen Alltag (LARS&LISA)].**

LARS&LISA (Pössel et al, 2004) is a depression prevention program based on the social information processing model (Dodge, 1986; 1993). This program was designed for 8th graders and consists of 10, 90-minute sessions that take place once a week during school time. The classes are split according to gender and are led by 2 trainers. The first hour provides an introduction to the program and to each other, and the following sessions cover five main themes: (a) “Find your aims!” (formulating and defining personal goals) (b) “magical loop” (association between thoughts, feelings, and behavior), (c) “THINK!” (Identification of dysfunctional thoughts, reality testing of dysfunctional thoughts, development of functional thoughts, rehearsal of functional thoughts), (d) “Just do it!” (Training of self-confident behavior), and (e) “Get in touch!” (developing and maintaining relationships).

In the first efficacy study, the authors reported positive effects on the participants’ social network immediately following participation in LARS&LISA (Pössel et al, 2003). Moreover, improvements in depressive symptoms were shown at the 3- and 6-month follow-ups (Pössel et al, 2004). Differential analyses indicated that both adolescents with low global self-efficacy (as defined by Schwarzer, 1994) as well as those with and without subclinical depression symptoms benefit from this intervention. Clinically affected adolescents, however, did not show any positive effects of the intervention in comparison to a no-treatment control group. A second efficacy study involving 7th graders showed significant improvements in self-worth and aggressive behavior at a nine-month follow-up (Groen et al, 2003). Because there was no increase in depressive symptoms in either group of adolescents in this study, no increase in depressive symptoms could be prevented in the intervention group, and thus no intervention effect on depressive symptoms was observed.

## **Conclusions and Outlook**

The literature on universal prevention of depression among adolescents shows that effective universal programs have only existed for a short time, and therefore a few questions remain unanswered. For example, longer-term follow-up data, which has become the gold standard in clinical research, is not yet available for any of the universal programs presented here.

Unfortunately, most of the programs named in this review are based on adult models that have been adapted to an adolescent population, and thus, developmental psychopathology has not typically been considered in treatment development and implementation. The LARS&LISA universal prevention program represents an exception to this pattern (Pössel et al., 2004). Further the examination of mediators and moderators is highly advisable. It seems fitting that prevention research focus on detecting underlying mechanisms and generalizable effects, as this has long been the standard in treatment research (Lewinsohn, Clarke & Hautzinger, 1999).

A further problem with universal prevention programs is their diversity, that is if and under what circumstances these programs may be integrated into the everyday adolescent experience. The universal programs presented in this article are all school-based

prevention programs; thus the deciding factor for the applicability of these interventions will depend on whether they can be led by teachers and be integrated into school curricula. The integration of a cognitive behavioral program into the school setting has been complicated thus far by the fact that the implementation requires broad background knowledge of therapeutic methods.

One important goal of future research on universal prevention programs may therefore be the adaptation of current programs to fit the needs of the school setting. A first and important step in this direction was taken during the evaluation of the FRIENDS for Children program (Barrett & Turner, 2001). The authors found that psychologists and teachers who led an anxiety prevention program achieved similarly positive results in preventing anxiety symptoms in students. This finding indicated that effective teacher-led prevention programs are possible and may facilitate the integration of depression prevention programs into the school setting.

In spite of some points of criticism, universal depression prevention programs for adolescents appear to be promising. This article presented evidence that these programs may be implemented in an adolescent population and that future studies may build constructively on these findings. It is expected that the noted points of criticism may be resolved within the next few years, which could result in more effective, practical, and flexible programs, as well as in an increase in knowledge about depression.

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**Address for correspondence:**

Patrick Pössel, Eberhard-Karls-University, Dep. Clinical and Developmental Psychology, 72072 Tuebingen, Germany. E-mail: [patrick.poessel@uni-tuebingen.de](mailto:patrick.poessel@uni-tuebingen.de)