



Ciencias Psicológicas

ISSN: 1688-4094

ISSN: 1688-4221

Facultad de Psicología - Universidad Católica del Uruguay.

Soares, Ana; Pais-Ribeiro, José L.; Silva, Isabel
Recursos do Desenvolvimento na Adolescência - Revisão Integrativa
Ciencias Psicológicas, vol. 12, no. 1, 2018, pp. 45-57
Facultad de Psicología - Universidad Católica del Uruguay.

DOI: <https://doi.org/10.22235/cp.v12i1.1594>

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Developmental Assets in Adolescence – Integrative Review

Recursos do Desenvolvimento na Adolescência – Revisão Integrativa

Recursos del Desarrollo en la Adolescencia – Revisión Integrativa

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Abstract: The framework of Developmental Assets® links positive ecological characteristics with personal skills and values in order to further the understanding of optimal development in adolescence. This review purpose to describe, analyze and discuss results from the utilization of this framework. As eligibility criteria was defined inclusion of studies that explore the framework of Developmental Assets adopting Positive Youth Development approach. Research of publications was conducted through consultation of the electronic databases Web of Science, ERIC, Science Direct and SciELO, during March and May of 2017. In this revision were included 29 articles published between 1998 and 2015. Results show the adoption of several methods regarding identification of resources, evaluation and applicability. The framework demonstrates to be culturally valid, relevant, in different contexts and socioeconomic characteristics, suggesting its applicability and utility as a strategy for a positive development in adolescence.

Keywords: developmental assets, positive youth development, integrative review

Resumo: O modelo de Recursos do Desenvolvimento - “Developmental Assets®” - associa características ecológicas positivas a competências e valores pessoais com o propósito de compreender um desenvolvimento ótimo na adolescência. O objetivo da presente revisão é descrever, analisar e discutir os resultados da utilização deste modelo. Como critério de elegibilidade definiu-se a inclusão de estudos que exploram o modelo de Recursos do Desenvolvimento no âmbito da perspectiva do Desenvolvimento Positivo na Adolescência. Considerou-se a pesquisa de publicações com recurso às bases de dados eletrónicas Web of Science, ERIC, Science Direct e SciELO, realizada entre Março a Maio de 2017. Nesta revisão foram incluídos 29 artigos publicados entre 1998 a 2015. Verifica-se a adoção de diversos métodos quanto à identificação de recursos, avaliação e aplicabilidade. O modelo demonstra ser culturalmente válido, relevante, em diferentes contextos e características socioeconómicas, sugerindo-se a sua aplicabilidade e utilidade como estratégia de um desenvolvimento positivo na adolescência.

Palavras-chave: recursos do desenvolvimento, perspectiva do desenvolvimento positivo dos adolescentes, revisão integrativa

Resumen: El modelo de Recursos del Desarrollo - “Developmental Assets®” - asocia características ecológicas positivas a competencias y valores personales con el propósito de comprender un desarrollo óptimo en la adolescencia. El objetivo de la presente revisión es describir, analizar y discutir los resultados de la utilización de este modelo. Como criterio de elegibilidad se definió la inclusión de estudios que exploran el modelo de Recursos del Desarrollo en el marco de la perspectiva del Desarrollo Positivo en la Adolescencia. Se consideró la investigación de publicaciones con recurso a las bases de datos electrónicas Web of Science, ERIC, Science Direct y SciELO, realizada entre marzo a mayo de 2017. En esta revisión se incluyeron 29 artículos publicados entre 1998 a 2015. Se verifica la adopción de diversos métodos en cuanto a la identificación de recursos, evaluación y aplicabilidad. El modelo demuestra ser culturalmente válido, relevante, en diferentes contextos y características socioeconómicas, sugiriéndose su aplicabilidad y utilidad como estrategia de un desarrollo positivo en la adolescencia.

Palabras clave: recursos del desarrollo, perspectiva del desarrollo positivo de los adolescentes, revisión integrativa

Received: 16/10/2017

Revised: 20/12/2017

Accepted: 04/03/2018

How to cite this article:

Soares, A., Pais-Ribeiro, J. L., & Silva, I. (2018). Recursos do Desenvolvimento na Adolescência – Revisão Integrativa. *Ciencias Psicológicas*, 12(1), 45-57. doi: <https://doi.org/10.22235/cp.v12i1.1594>

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Introduction

The perspective of Adolescent Positive Development originated as a conceptual alternative to mental health models that focus on developmental problems and deficits. By promoting a conception of the adolescent that is based on his or her strengths, it defines a new approach to research on adolescent development, and opens up a different perspective for the implementation of policies and programs aimed at enhancing the health of adolescents (Benson, Scales, Hamilton, & Sesma, 2006; Bonell et al., 2016; Damon, 2004; Duncan, 2007; Lerner & Steinberg, 2009).

Within the framework of this perspective, in 1990, the concept of “Developmental Assets”[®] was proposed by the Search Institute (Benson, 1990) with the objective of describing the elements that adolescents need for a successful development (Benson, 2006, 2007; Benson et al., 2006; Benson, Scales, & Syvertsen, 2011; Scales & Leffert, 2004). This model associates positive ecological characteristics (external assets) with skills, competences and values (internal assets) and assumes that these assets constitute dynamically interlocked “building blocks” (Benson et al., 2006, p.906) that when combined can prevent high-risk (Benson & Scales, 2009) and reinforce a successful development, i. e., “thriving” (Benson et al., 2006; Scales, Benson, Leffert, & Blyth, 2000). Reflecting the relational metatheory, which is framed by the systemic approach to development known as “Developmental Systems Theory” (Ford & Lerner, 1992; Gottlieb, 1997; Lerner & Steinberg, 2009), and central to the Developmental Assets Framework, lies the potential ontogenetic plasticity that recognizes the existence of relations of reciprocal interdependence between the biological, individual and contextual levels of organization. This presupposes that positive development can be promoted through a convergence between individual assets and favorable contextual conditions (Benson et al., 2006). According to the framework, this constitutes, «(...) the fusion of external (i.e., ecological) assets and internal assets (...)» (Benson, 2007, p. 38).

The framework, whose original configuration comprehended 30 Developmental Assets distributed in six categories, was revised in 1996 (Benson, 1997, 2006). This revision resulted in the identification of the 40 Assets distributed in

eight categories that compose the framework (Benson, 1997, 2006; Benson et al., 1998; Scales & Leffert, 2004), which constitutes both a theoretical structure and an applied research model. The 40 identified Assets are distributed into 20 External Assets and 20 Internal Assets. The External Assets consist in environmental health-enhancing characteristics, namely, experiences, relations, support and opportunities provided by persons in the family, school, community or peer groups. They include four categories: Support (family support, positive family communication, other adult relationships, caring neighborhood, caring school climate, parents involvement in schooling); Empowerment (a community that values adolescents, adolescents as resources, service to others, safety); Boundaries and Expectations (family, school and neighborhood boundaries, adults as role models for behavior, positive peer influence, high expectations), and Constructive Use of Time (creative activities, programs for adolescents, religious community, time at home).

Internal Assets consist in beliefs, values, competences and self-perceptions that adolescents develop gradually, over time, as a result of numerous experiences: the growth of these assets is an idiosyncratic process of self-regulation. They also include four categories: Commitment to Learning (achievement motivation, school engagement, homework, bonding to school, reading for pleasure), Positive Values (caring, equality and social justice, integrity, honesty, responsibility, restraint), Social Competences (planning and decision making, interpersonal and cultural competence, resistance skills, peaceful conflict resolution) and Positive Identity (personal power, self-esteem, sense of purpose, positive view of personal future). For a thorough analysis of the framework see Benson, 2006; Benson et al., 2006; Benson et al., 2011; Scales & Leffert, 2004; Soares, Pais-Ribeiro, & Silva, 2017.

It should be noted that apart from the conceptual and empirical study of the fundamental elements that are part of a positive development during adolescence, the way in which the Developmental Assets framework is organized reflects the purpose of its use for educational and public communication objectives (Benson et al., 2006).

The aim of the present research is to describe, analyze and discuss the results of the use of the Developmental Assets framework.

Method

Eligibility criteria

After defining the specific characteristics of the studies and publications to be considered for the review (Liberati et al., 2009; Pais-Ribeiro, 2014; Whittemore & Knafl, 2005), we selected the studies according to the following criteria: we included studies that explore the Developmental Assets framework within the perspective of Positive Development in Adolescence; studies that survey adolescent population (between the ages of 10 and 19 years); interventions based on the framework of Developmental Assets; studies to which we had full text access. There were no restrictions related to the type of setting; there were no restrictions regarding the date of the publication. We included articles published in English, Portuguese and Spanish. We excluded literature reviews, commentaries, editorials, summaries of conference proceedings and dissertations.

Sources of information and research strategy

Concerning the sources of information, we researched publications that were available in electronic databases, namely, Web of Science, ERIC, Science Direct and SciELO. The research was carried out during the period from March to May 2017. In the database Web of Science (24/04/2017), we followed the following procedure: (1) we entered the search terms *Developmental Assets Adolescence*, by using the option Search: All Databases, Timespan = All years (1900-2017), Search Language = Auto, obtaining as a result a total of 57 publications; (2) we entered the terms *Developmental Assets Adolescent*, with the option Search: All Databases, Timespan = All years, Search Language = Auto, and 204 publications were elicited.

In the ERIC database (05/02/2017): (1) terms entered: *Developmental Assets Adolescence*, 28 publications were elicited; (2) terms entered: *Developmental Assets Adolescent*, 99 publications were elicited.

In the Science Direct database (05/13/2017): (1) the terms entered were *Developmental Assets Adolescence*, 1350 publications were elicited, then the research was refined by using the filters: (*developmental assets adolescence*), [*All Sources (Psychology)*], AND LIMIT-TO (*topics, “social, adolescent, youth, behavior, student, mental health, developmental, mental, risk, sexu-*

al, young people, health”) AND LIMIT-TO (*content type, “JL, BS”, “Journal”*), 221 publications were elicited; (2) terms entered: *Developmental Assets Adolescent*, 2131 publications were elicited, then the research was refined using the filters: (*developmental assets adolescent*), [*All Sources (Psychology)*], AND LIMIT-TO (*topics, “social, youth, adolescent, program, student, mental health, behavior, mental, community”*) AND LIMIT-TO (*content type, “JL,BS”, “Journal”*) 260 publications were elicited.

In the database SciELO (05/13/2017): the terms entered were “*Developmental Assets*”, as a result a total of 10 publications were elicited.

Procedure for the selection of studies

From the research in the databases Web of Science, ERIC, Science Direct e SciELO a total of 879 results was elicited. In the initial selection phase, the titles and abstracts identified by the research were analyzed, and 755 publications were excluded, because they did not meet the defined criteria. Seventeen publications were additionally excluded, 15 were duplicated and 2 were unavailable in full text format. We examined the complete text of the remaining 107 publications and adopted the pre-defined eligibility criteria, and 74 studies were eliminated, as they did not meet the inclusion criteria described above. Twenty-nine studies complied with the eligibility criteria and were included in the review.

In Figure 1 we present the flowchart, in which the phases of the selection process are described (Liberati et al., 2009).

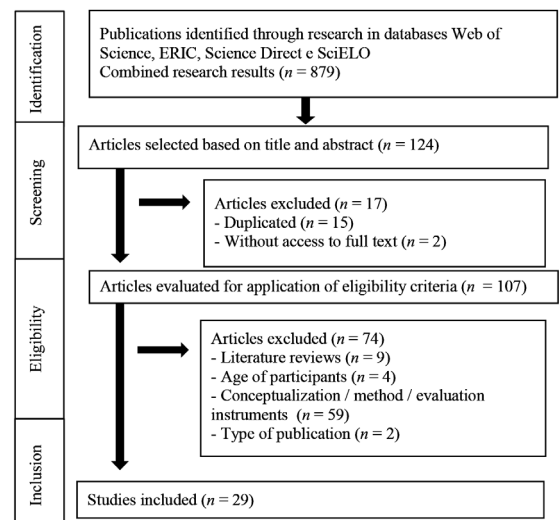


Figure 1
Procedure for the Selection of Studies

Results

In this review, 29 articles published between 1998 and 2015 were included. The search based on the terms *Developmental Assets* allowed us to identify research publications applied to adolescent development in 1998, of the *Search Institute* (Benson et al., 1998; Leffert et al., 1998). Four years later there were investigations that were based on the same framework, but which came from sources other than the *Search Institute* (Oman et al., 2002; Taylor et al., 2002). In general terms, it was found that diverse methods were adopted for the identification of resources and for their evaluation, as well as the use of quantitative as well as qualitative techniques for data collection were observed. The majority were studies with a cross-sectional observational design. However, a recent growing tendency to use longitudinal designs was detected. To a lesser extent, the publication of studies with prospective and experimental designs was observed.

In Table 1 *Studies included: Synthesis Identification of Developmental Assets, Method, Additional Variables and Results* (Appendix), we present a brief description of the studies included in the review.

Discussion

Conceptualization and operationalization of the concept developmental assets

We reviewed the publication of research applied to the development of adolescents using the Developmental Assets framework carried out in 1998, by the Search Institute, in studies by Benson et al. (1998) and Leffert et al. (1998). They were produced with the aim of describing the experience of Developmental Assets in the adolescent population, as well as its relation with positive developmental outcomes. With the purpose of evaluating the experience related to the 40 individual assets, the Search Institute developed the instrument *Profile of Student Life: Attitudes and Behaviors®* (A&B) (Benson et al., 1998; Leffert et al., 1998), which became the most extensively used instrument in research; it stood out on account of its clarity and simplicity for the interpretation of data with educational and public communication goals.

In the review, we found that there was the adoption of a diversity of methods used for the identification of assets. For instance, Theokas et al. (2005) applied the A&B questionnaire to a sample of early adolescent students and suggested to reduce the 40 assets to 14, which were grouped into two higher order dimensions representing the internal and external resources proposed a priori by the model (see Table 1).

As a continuation of this research, the *Search Institute* developed the questionnaire *Development Assets Profile* (DAP). Even though it is a useful instrument, it does not assess the totality of the experience encompassed by the 40 assets, since it focuses the evaluation on the categories that reflect the essence of the assets assessed by the instrument A&B (Scales et al., 2013).

Among the diverse methods adopted in the various studies reviewed, we observed a tendency to focus attention on the categories of assets identified in the framework (for instance, Murphey, Lamonda, Carney, & Duncan, 2004; Taylor et al., 2002; Taylor et al., 2005), which constitutes, according to Taylor et al. (2002), an indirect evaluation of the Developmental Assets

At the *Health Science Center* of the University of Oklahoma, Oman et al. (2002) developed the instrument *Youth Asset Survey* (YAS), which identifies 10 developmental assets (Table 1). The authors carried out the research on the relation between assets and risk behaviors (Aspy et al., 2010; Atkins, Oman, Vesely, Aspy, & McLeroy, 2002; Cheney, Oman, & Vesely, 2015), so that the information aimed at prevention programs could provide an input for developing strategies focused on those assets with higher impact for the protection of adolescents from their engagement in risk behaviors. Later on, Oman et al. (2010) added seven assets to the framework, which improved and expanded the YAS asset scale.

Reininger et al. (2003) developed the instrument *Adolescent Health Attitude and Behavior Survey* (AHABS) in which 7 assets are identified (Table 1). The section *Youth Assets* do AHABS was developed, and it was based on the constructs developed by the *Search Institute*. However, it tends to be focused on external assets. Even though its use to assess the impact of resources in diverse aspects of the life of adolescents has, apparently, a limited scope – which suggests its utility for programs that envisage the realization of thorough studies on sexual behavior in adoles-

cents -, Valois, Zullig, Huebner e Drane (2009) demonstrated that it can also be useful for research on the role of resources in relation to the outcomes of positive development in general.

It was observed that, having adopted a diversity of methods, the different studies highlighted the importance of a holistic approach for the identification of assets in adolescents, which takes into consideration the personal characteristics as well as the ecological context. Emphasis was placed on the adolescent's perception of the experience of assets, with the exception of two studies that present the evaluation of the parental perspective (Aspy et al., 2010; Atkins et al., 2002). It is deemed to be important that the identification of the resources focus on the diverse contexts of the life of adolescents, namely, family, social, school and community contexts.

Developmental assets and developmental outcomes

The fundamental assumption of the model is that the greater the number of positive experiences the adolescent reveals, the greater the likelihood of a successful development (Benson et al., 2006; Benson et al., 2011). In other words, we found that the underlying principle that "the more assets, the better" (Benson, 2007, p. 38) or the "vertical pile up of assets" is central to the theory, which suggests that assets are additive or cumulative. This reflects the fusion of assets at individual and ecological levels, and translates into the idea that a successful development is related to the experience of both external and internal assets (Benson, 2007; Benson et al., 2011). In this sense, it is relevant to analyze the data of empirical research data based on the experience of assets and its relation to developmental outcomes.

Research based on this approach tends to explore this additive principle related to assets, suggesting that the greater the number of assets that the adolescent experiences, the lower the likelihood of revealing his or her involvement in risk behaviors (Aspy et al., 2010; Atkins et al., 2002; Benson et al., 1998; Leffert et al., 1998; Macedo, & Kublikowski, 2009; Murphey et al., 2004; Oman et al., 2002; Reiningier et al., 2003) even in particular contexts (Chew, Osseck, Raygor, Eldridge-Houser, & Cox, 2010). This relation can also be observed prospectively (Cheney, Oman, & Vesely, 2015), even in adolescents from

particularly challenging social contexts (Taylor et al., 2002)

It is worth noting that, in addition to the research on risk or negative behaviors in adolescence, as well as on appropriate behaviors or competences, we observed the tendency of research to aim at focusing on what defines not only a normal or adequate development, but an optimal development, that is, thriving (Sesma et al., 2013; Scales et al., 2000). Since this concept is being currently under study (see, for instance, Bundick et al., 2010; Lerner et al., 2010; Sesma et al., 2013; Scales, Benson, & Roehlkepartain, 2011), in our review of literature related to the concept of *Developmental Assets*, we observed that the construal of thriving that was introduced by the Search Institute (Scales et al., 2000; Sesma et al., 2013) is the most frequently used in research. Some studies aim at expanding this notion by adding indicators to the research (Alvarado & Ricard, 2013; Scales, Leffert, & Vraa, 2003), which shows that they are attentive to the need of adapting this concept to the particular cultural context to which it is targeted (Taylor et al., 2005). The data suggest a positive relation between experience of assets and thriving behaviors (Alvarado & Ricard, 2013; Benson et al., 1998; Scales et al., 2000; Scales et al., 2003; Theokas et al., 2005), and it was found that assets and outcomes of thriving are prospectively related (Taylor et al., 2005).

Research has also evolved so as to include the evaluation of concepts that are established within the perspective of Positive Youth Development as indicators of a positive development (Park, 2004), the perception of life satisfaction (Oman, Vesely, Aspy, & Tolma, 2015; Santos & Gonçalves, 2016; Valois et al., 2009) and of positive mental health (Filbert & Flynn 2010) stand out.

Research indicates that adolescents who report having experienced a greater number of assets tend to reveal positive developmental trajectories, since they have better outcomes according to several behavioral, academic, psychological, socio-emotional and well-being indicators (Filbert & Flynn, 2010; Oman et al., 2015; Santos & Gonçalves, 2016; Scales et al., 2006; Taylor et al., 2002; Valois et al., 2009). Thus, research suggests that the total number of assets that the adolescent experiences has considerable implications for his health and well-being, independently

of the specific outcome under study. However, it was found that each outcome is not affected equally by the exact same assets, as shown in Table 1; several specific assets, or subsets of assets, are better predictors of outcomes concurrently (Aspy et al., 2010; Chew et al. 2010; Filbert & Flynn, 2010; Leffert et al., 1998; Scales et al., 2000; Taylor et al., 2002; Theokas et al., 2005; Murphey et al., 2004; Valois et al., 2009) and longitudinally (Cheney et al., 2015; Oman et al., 2015; Scales et al., 2006; Taylor et al., 2002; Taylor et al., 2005), while the assets vary according to the outcomes that are under study.

Asset experience and diversity

In turn, it is important to analyze the relevance and appropriateness of the Developmental Assets framework for *all* adolescents. In the various studies reviewed, we observed that the elements that constitute both external and internal assets tend to have a comparable validity for gender, educational level, ethnicity, geographical, cultural and socioeconomic context, although they are usually expressed or experienced differently among the different groups studied. This suggests that there are similarities and differences in the way in which different assets can function in different groups.

A relation between assets and diverse positive developmental outcomes was observed, which indicates that all adolescents benefit from the experiences, opportunities, types of support and personal characteristics included both in external and internal assets, when particular contexts are taken into consideration (Chew et al., 2010; Filbert & Flynn, 2010; Taylor et al., 2002; Taylor et al., 2005), and different ethnic groups (Benson et al., 1998; Leffert et al., 1998; Scales et al., 2000; Scales et al., 2003; Valois et al., 2009).

In turn, there are indications that different assets are more strongly related to specific outcomes, in different groups of adolescents. Gender differences were found in the relation between the experience of assets and outcomes, with girls tending to report that they experience a greater number of assets (Aspy et al, 2010; Benson et al., 1998; Leffert et al., 1998; Macedo & Kublikowski, 2009; Scales et al., 2000; Scales et al., 2003; Valois et al., 2009). The experience of assets can be contextually influenced by age and/or educational level, and we can observe that

younger students tend to report the experience of a greater number of assets (Aspy et al, 2010; Benson et al., 1998; Leffert et al., 1998; Macedo & Kublikowski, 2009; Scales et al., 2000; Scales et al., 2003; Valois et al., 2009). When different ethnic groups are considered, research suggests that there is specificity or singularity in the experience of assets, and it was observed that different assets appear to be more strongly related to specific outcomes only in the case of specific groups (Scales et al., 2000; Scales et al., 2003; Valois et al., 2009).

In short, these two types of results, which represent aspects of similarity and diversity, allow for the identification of assets relevant to *all* adolescents, while highlighting the importance of specific assets for adolescents with different characteristics. This furnishes the opportunity to develop strategies for the promotion of a positive development that are culturally relevant, appropriate regarding gender and age, sensitive to the needs of adolescents through the consideration of their specific characteristics

Applicability of the framework to intervention programs

Research suggests the utility of the Developmental Assets Framework as well as of the strategy for Asset-Building in programs focused on adolescent positive development. The model indicates the probability of effectiveness of a dual-strategy applied to policies and programs that, on the one hand, has the purpose of *building* all the 40 assets in the ecology of the adolescent, and, on the other, it has the specific goal of promoting specific sets of assets contingent on the objectives planned by programs, organizations or communities (Benson 2006; Benson et al., 2006; Benson et al., 2011).

The literature review allows us to verify the applicability of the model as a strategy for a positive development in adolescence, in different contexts and cultures. Atkiss et al. (2011) emphasized the importance of carrying out culturally sensitive interventions; they noticed that the needs and resources of each particular context are what shapes the activities of the programs. The authors explored the effectiveness of the framework's integration through a pilot program for adolescents and found that, at an individual level, adolescents reported an increase in their experience of inter-

nal and external assets through their involvement in the program. Through the implementation of the *Kishoree Kontha* program in villages in Bangladesh, Scales et al. (2013) observed that the intervention contributed to a significant increase in the assets that are experienced by the participants in the project; this suggests the effectiveness and utility of the framework as an approach that can promote positive development.

In the study carried out by Heinze's (2013) the utility of the framework in specific contexts was observed, when it was applied to adolescents in emergency shelters, a population that, as the author points out, is traditionally assessed from *deficit* based perspectives. In this study, the adolescents who were admitted to emergency shelters reported a lower number of assets compared to the general population. The observation of the results collected from the reports of the participants in the program evinced an improvement in positive developmental outcomes.

Acosta et al. (2013), Chinman et al. (2012) and Chinman et al. (2013) assessed the efficacy of the *Assets Getting To Outcomes* (AGTO) intervention, an approach to promote Developmental Assets as a strategy for a positive development with a focus on prevention. In these studies, the data collected regarding individual capacity of practitioners and the performance of the program suggest that the capacity of the practitioners predicts, in part, the performance of prevention programs. It was found that the utilization of the AGTO implementation support intervention produced improvements in the capacity of practitioners and consequently in the performance of the program.

Dell et al. (2013) explored the applicability and usefulness of the Developmental Asset framework for the identification of a program's goals and objectives, and they noted the importance of paying attention to align professional health care services with a theoretically informed evidence-base for evaluation purposes in order to establish a foundation required to measure the success of an intervention.

These studies suggest the applicability of the framework as a strategy for a positive development in adolescence; they confirm that the identification and evaluation of assets facilitate the development of programs based on culturally specific and inclusive Asset Building strategies.

Conclusion

In this review, we observed that the framework of developmental assets, which includes a set of experiences, relationships, skills and values that constitute the personal and ecological "nutrients" that are necessary for a successful development (Benson et al., 2011), has demonstrated to be culturally valid, relevant in different contexts and socioeconomic characteristics.

According to our observations, studies suggest that personal assets and those from the ecological contexts that are positively associated with the outcomes of healthy development and that are inversely related to problematic behaviors. Studies also suggest that many specific assets are better predictors of outcomes both, concurrently and longitudinally, these are assets whose contribution depends on the outcome that is specifically observed.

Beyond the importance of specific assets in relation to particular outcomes, and in spite of there being an acknowledgment of the usefulness of selecting specific asset to incorporate into programs, it is worthwhile to note that these experiences are an integral part of an encompassing set of assets that promote a healthy development. Studies indicate that none of the assets operates in isolation, this means that, for instance, some assets may function as precursors of other assets (Leffert et al., 1998). For this reason, further research is needed to understand the interaction among assets, their developmental sources and their role as mediators or moderators of behavior.

This framework allows for the identification of assets relevant to all adolescents, while highlighting the importance of specific resources in adolescents with different characteristics. This variety of relationships suggests that there is something that is distinctive regarding how some adolescents experience or express the assets, thus stressing the importance of considering differences in the experience of assets when seeking to promote a positive development in adolescents. Future research will be needed to understand how adolescents in different contexts and cultures experience in similar and in different ways their developmental assets, with an emphasis on the examination of both the unique characteristics as well as the common characteristics among them.

The applicability and the utility of the framework for the development of programs as

a strategy for a positive development are recommended. The results of the studies indicate that adolescents increase their experience of assets during their participation in a program aimed at promoting positive development, and have a greater probability of reporting outcomes associated with a successful development. Further longitudinal studies will be needed to explore the relationship between an increase of the experience of ecological and individual assets with outcomes of a positive development, as well as the effectiveness of programs in promoting the experience of these assets.

The Positive Youth Development perspective focuses its attention on the relationships between the individual and the context that are associated with positive developmental pathways throughout adolescence, “the adolescent decade” (Lerner & Steinberg 2009), and stresses that all adolescents have strengths that can be capitalized to promote healthy development (Damon, 2004).

The framework of Developmental Assets, with its focus on an approach on a positive development of adolescents, furnishes a holistic approach to the promotion of successful development, in various developmental domains, be it psychological, physical and/or socio-emotional, including multiple contexts, such as family, school and community, and encompassing diverse outcomes, from the prevention of problematic behaviors to the promotion of thriving behaviors. We recommend the consideration of the applicability and the usefulness of the framework as a strategy for a positive development in adolescence.

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Appendix

Table 1

Studies included: Synthesis Identification of Developmental Assets, Method, Additional Variables and Results

1) Author (s), Publication Date 2) Country of Origin	1) Research Design 2) Population	1) <i>Developmental Assets</i> 2) Evaluation Method	1) Additional Vari- ables 2) Evaluation Method	Results
1) Acosta et al., 2013 2) USA, Maine	1) I/RCT 2) Members and staff from 12 communities: 6 and respective 30 intervention pro- grams, 6 control; pre intervention n=376, post 1 year n=303, 2 n=315	1) <i>Intervention Assets-Get- ting To Outcomes – AGTO</i> ¹ 2) Assessment of practi- tioner capacity; exposure to and use of AGTO, practi- tioner perception of AGTO and performance of the program		No differences in prevention capacity between groups was found. AGTO group, differ- ences in groups with greater exposure to and use of AGTO. Use of AGTO produced im- provements in practitioner capacity and consequently in program performance.
1) Alvarado & Ricard, 2013 2) USA	1) OT/QT 2) n= 130, 11-20 years (M=15.6), Hispanics/Latinos	1) <i>Framework Search Insti- tute</i> ² 2) DAP ³	1) <i>Thriving</i> ⁴ 2) A&B ⁵ / Additional questions adapted from Benson e Scales (2009)	Positive correlation between assets and Thriving (internal assets and ethnic identity ac- count for 46% of the variance of Thriving).
1) Aspy et al., 2010 2) USA	1) OT/QT 2) n=2163 Adoles- cents, 12-17 years, n=2163 Parents	1) <i>Framework Oman et al.</i> (2002) ⁶ 2) YAS ⁷	1) Sexual risk behavior 2) 2 Questions	Non-Parental adult and peer role models, family commu- nication, use of time-religion and responsible choices as- sociated with abstinence in- dependently of age. Age dif- ferences.
1) Atkins et al., 2002 2) EUA	1) OT/QT 2) n=1350 Adoles- cents, 13-19 years, n=1350 Parents	1) <i>Framework Oman et al.</i> (2002) ⁶ 2) YAS ⁷	1) Tobacco use 2) 1 Question	Negative relationship be- tween assets and tobacco use. Cumulative effect of Assets. Exception cultural respect, assets predictive of nonuse.
1) Atkiss et al., 2011 2) EUA	1) I/QE/QL 2) n= 11, context escolar, 16-18 years	1) 40 Asset Framework <i>Search Institute</i> ⁸ / <i>Socio- Ecological Model</i> 2) Structured Interviews	1) Healthy behaviors 2) Structured Inter- views	Success related to the in- volvement of adolescents as program collaborators. Indi- vidual level, increase of assets (internal dominant) through the experience of building external support structures in school and community.
1) Benson et al., 1998 2) USA	1) OT/QT 2) n= 99462, Grades 6-12	1) 40 Asset Framework <i>Search Institute</i> ⁸ 2) A&B ⁵	1) Risk behaviors ⁹ and <i>Thriving</i> ⁴ 2) A&B ⁵	Prevalence of Assets in Gen- eral population, average n° reported 18. Differences in school grade and gender. Negative rela- tionship between assets and risk behavior; positive be- tween assets and <i>Thriving</i> . Cumulative effect of assets.
1) Cheney et al., 2015 2) USA	1) P/QT 2) n= 467, randomly selected ethnically diverse, 15-17 years at baseline (18-22 22 years old at Wave 5)	1) <i>Framework Oman et al.</i> (2002) ⁶ 2) YAS ⁷	1) Tobacco Use 2) 1 Item	Family communication as- sets, relationship with moth- er, aspirations for the future, parental monitoring and re- sponsible choices related to higher chances of tobacco nonuse. Family structure and gender can influence relation between assets and use.

Table 1
(Continuation)

1) Chew et al., 2010 2) EUA	1) OT/QT 2) n= 62 adolescents juvenile justice facility, 11-18 years	1) Framework <i>Search Institute</i> ² 2) DAP ³	Majority reported: lack of internal and social context assets; substance use problems and no positive parental or peer support; social context: desire to do well in activities; lower experience of service to others and involvement in religious activities. Lack of commitment associated with risk behaviors.
1) Chinman et al., 2012 2) EUA, Maine	1) I/RCT/QT/QL 2) 12 Community members: 6 and respective 30 intervention programs, 6 control, assessment after 6 months	1) Intervention <i>Assets-Getting To Outcomes</i> ¹ 2) Program performance and practitioner capacity: focus groups, semi-structured interviews with Project Leadership Team and technical assistance providers and supervisors	Individual and program performance capacity suggest that practitioner capacity partially predicts prevention programs performance.
1) Chinman et al., 2013 2) EUA, Maine	1) I/RCT/QT/QL 2) 32 Program Directors (16 intervention and 16 control); 1 year post-intervention; 12 communities	1) Intervention <i>Assets-Getting To Outcomes</i> ¹ 2) Prevention Capacity: Efficacy and behaviors of prevention; Survey Coalition: Assets Efficacy e GTO Efficacy: Behavior Scales: Assets, GTO, and AGTO; AGTO use and exposure: AGTO Participation Index; Program Performance: structured interviews	Capacity of practitioners did not differ among groups. AGTO ¹ practitioners who used the program, increase in self-efficacy to conduct asset building programs and increase in the frequency of behaviors related AGTO ¹ , compared to non-users. AGTO ¹ improvement in capacity of practitioners who used it.
1) Dell et al., 2013 2) USA	1) I/QE/QL 2) 4 staff, 2 managers and a program clinical supervisor, 9 school administrators, 8 principals, 2 superintendents e 23 professors (8 schools)	1) Definition of the program's goals and objective based on the framework <i>Search Institute</i> 2) Mixed-method: focus groups and interviews with program professionals, school administrators and professionals.	Importance of resorting to expert knowledge to develop prevention programs that target adolescents; pay attention to align the service of health professionals with a theoretical, evidence based model with evaluation goals.
1) Filbert & Flynn, 2010 2) Canada	1) OL/QT 2) n= 97 participants <i>living in foster care</i> (97%), 10-17 years	1) 40 Asset Framework <i>Search Institute</i> ⁸ 2) Section <i>Assets</i> (A&B ⁵) instrument <i>Canadian adaptation of the Assessment and Action Record</i> (2006) 1) <i>Cultural assets</i> 2) Index of frequency of opportunities.	1) Positive mental health 2) <i>Prosocial scale of the Strengths and Difficulties Questionnaire</i> ; <i>General Self-esteem Scale</i> ; <i>Educational Performance Scale</i> ; <i>Total Difficulties Scale</i> (evaluate by adoptive father)
1) Heinze, 2013 2) USA	1) I/QE/QT 2) n= 82 adolescents residing in emergency shelters	1) Framework <i>Search Institute</i> ² 2) DAP ³	1) Psychosocial functioning: distress, life satisfaction, health behaviors, program satisfaction, caregiver relationship and academic functioning; 2) <i>The General Health Questionnaire</i> ; <i>Students' Life Satisfaction Scale</i> ; <i>The Personal Lifestyle Questionnaire</i> ; <i>The Client Satisfaction Questionnaire</i> ; <i>Family and school functioning</i>
1) Leffert et al., 1998 2) USA	1) OT/QT 2) n=99462, Grades 6-12	1) 40 Assets framework <i>Search Institute</i> ⁸ ; 2) A&B ⁵	1) Risk behaviors ⁹ 2) A&B ⁵
			At admission, reported less n° of assets compared to general population. During stay, decrease in feelings of distress and increase in life satisfaction, health behaviors, positive caregiver relationship, internal assets. Utility of the framework in homeless adolescents.
			School grade and gender differences. Framework accounted for 21% to 41% variance individual risk patterns and 66% overall risk index. Subset of assets predictive utility for risk behaviors. Cumulative effect of assets.

Table 1
(Continuation)

1) Macedo & Kublikowski, 2009 2) Brazil	1) OT/QT 2) $n=2725$, 11-19 years	1) 40 Assets framework <i>Search Institute</i> ⁸ ; 2) A&B ⁵	1) Risk behaviors ⁹ 2) A&B ⁵ 1) Sao Paulo's Social Vulnerability Index	Gender and age differences. There were no difference related to vulnerability indexes. Independent of social condition and community, low average n° of assets. Inverse relationship between assets and risk behaviors.
1) Murphey et al., 2004 2) USA	1) OT/QT 2) $n=30916$, Grades 8-12	1) High school results, Parents conversation about school, Youth participation in programs, Volunteering, Helping to decide what happens in their school, Feeling they are valued community members. 2) Six questions	1) Risk behaviors (tobacco use, marijuana, alcohol, <i>binge drinking</i> , physical fighting, sexual behavior, plan to commit suicide) and health promoting behaviors (physical exercise, use of car safety belt, use of bicycle helmet) 2) <i>Youth Risk Behavior Survey</i>	N° of assets negatively related to risk behaviors, and positively to health promoting behaviors. Assets with independent effects to risk and health behaviors (academic success escolar, greatest effect)
1) Oman et al., 2010 2) USA	1) OT/QT 2) $n=1111$, age $M=14,3$	1) Framework Oman et al. (2010) ¹⁰ 2) <i>Expanded YAS</i> ⁷		Identification of 17 assets e validation of YAS questionnaire (<i>expanded</i>)
1) Oman et al., 2015 2) USA	1) P/QT 2) $n=651$, age $\Rightarrow 18$ years evaluation 5; 12-17 years 1st evaluation	1) Framework Oman et al. (2010) ¹⁰ ; 2) <i>Expanded YAS</i> ⁷	1) Successful transition to adulthood. Dimensions: general health, social support, life satisfaction and financial health 2) 4 Items adapted	Individual and community assets predicted successful transition to early adulthood 4 years later; higher n° of assets, better outcomes. Gender interaction for family level assets.
1) Oman et al., 2002 2) USA	1) OT/QT 2) $n=1350$, age $M=15,4$	1) Framework Oman et al. (2002) ⁶ 2) YAS ⁷	1) Risk behaviors 2) Not specified	Identification of assets and validation of YAS instrument. Significant negative relation between experience of assets and risk behaviors.
1) Reininger et al., 2003 2) USA	1) OT/QT 2) $n=4368$, Grades 9-12	1) Asset framework Reininger et al. (2003) ¹¹ 2) AHABS ¹²	1) Risk behaviors and attitudes towards sexual behavior 2) AHABS ¹¹	Relation between attitudes towards sexual behavior and assets. Greater n° of assets, less likely to report attitudes of support to peers engaged in sexual behaviors and lower engagement in risk behaviors.
1) Santos & Gonçalves, 2016 2) Portugal	1) OT/QT 2) $n=308$ participants, 12-18 years	1) Framework <i>Search Institute</i> ² 2) DAP ³ (version of Developmental Asset Profile)	1) Satisfaction 2) Sources of Enjoyment Youth Sport Questionnaire	Age group influence sources of satisfaction and developmental assets. Family support, positive identity and positive values predictors of satisfaction.
1) Scales et al., 2013 2) Bangladesh	1) I/RCT/QT 2) $n=600$ intervention, $n=400$ control, girls, age $M=13,5$ (10-19 years)	1) Framework <i>Search Institute</i> ² 2) DAP ³		<i>Kishoree Kontha</i> program efficacy: significant increase in assets of participants. Mean improvement of 22% in quantity of assets experienced (superior increase in external).
1) Scales et al., 2000 2) USA	1) OT/QT 2) $n=6000$, Grades 6-12	1) 40 Asset Framework <i>Search Institute</i> ⁸ 2) A&B ⁵	1) <i>Thriving</i> ⁴ 2) A&B ⁵	Framework accounted for 10% to 43% variance in individual thriving indicators and 47% (Native Americans) and 54% (Multiracial) overall thriving index. Differences in school grade, gender, ethnic group. Cumulative effect of assets on thriving.
1) Scales et al., 2006 2) USA	1) OL/QT 2) $n=370$, Grade 7-9 to 10-12 (3 year evaluation)	1) 34 de 40 Assets <i>Search Institute</i> ⁸ ; 8 factors: Family, School, Positive Identity, Youth perception of community, Social competence, Positive values, Connection to Community, Norms of Responsibility 2) A&B ⁵	1) Academic outcomes 2) Item A&B ⁵	Greater n° of assets at the beginning of the evaluation, better academic outcomes 3 years later. Increase of assets associated to better outcomes. Clusters of specific assets increased by 2 or 3 times the chances of high academic outcomes 3 years later.

Table 1
(Continuation)

1) Scales et al., 2003 2) USA	1) OT/QT 2) $n=5136$, Grades 6-12	1) 12 Domains: Having heard about Assets Building; Exposure to: Assets Building programs; Remunerated work; Family Assets Building; Parental service, education and vote; Relationship with school; Other adults Assets Building; Community pride; Positive view of future 2) <i>Youth Supplement Survey</i>	1) <i>Thriving</i> ⁴ 2) A&B ⁵ 1) <i>Active coping</i> 2) <i>Youth Supplement Survey</i> -YSS	Theoretical validity of the model: greater exposure to assets, better wellbeing outcomes. Positive relation between Assets and Thriving. Differences in gender and school grade.
1) Taylor et al., 2002 2) USA	1) OL/QT 2) $n= 45$ gang members, $n= 50$ de community organization, African-American male youth; 14-18 years ($M= 15,82/ M=16,31$, resp.) 1 st wave	1) 8 Category model <i>Search Institute</i> ⁸ 2) 24 Items related to one of the 8 categories	1) Positive functioning/ positive developmental trajectories 2) Not specified	Changes over time in positive functioning were more strongly related to assets for gang members. Assets present at the beginning related to improvement in positive functioning outcomes at the end of a year period.
1) Taylor et al., 2005 2) USA	1) OL/QT 2) $n= 45$ gang members, $n= 50$ community organizations; African-American male youth; 14-18 years ($M= 15,82/ M=16,31$, respect.) 1st evaluation; 3 years of evaluation.	1) 8 Category model <i>Search Institute</i> ⁸ 2) 8 questions representing each category.	1) <i>Thriving</i> ⁴ 2) A&B ⁵ 1) Positive functioning among African-Americans: health, positive relation with neighbors and friends, self-regard, awareness of being able to cope with racism 2) Spencer et al. (2003).	Comparable levels of assets across the 3 waves in both groups. Community-based adolescents reported higher outcomes in assets and thriving. Assets and thriving outcomes were related.
1) Theokas et al., 2005 2) USA	1) OT/QT 2) $n= 50000$, Grads 6-8 (age $M=12,7$)	1) Individual Attributes: Social Conscience, Risk Avoidance, Interpersonal Values, Activity Participation, Personal Values, Boundaries and Expectations and Involvement with school. External Conditions: Community Connection, Parent Involvement, School Connection, Adult Mentors, Positive Identity, Relationship with Family, Contextual Safety. 2) A&B ⁵	1) <i>Thriving</i> ⁴ 2) A&B ⁵	The model accounts for 38% of the variance in the thriving index, individual assets are stronger predictors. Gender and age differences. High individual assets, with low discrimination in thriving between groups with low and average levels of ecological assets.
1) Valois et al., 2009 2) USA	1) OT/QT 2) $n= 3477$, 14-17 years	1) Framework Reininger et al. (2003) ¹¹ 2) AHAB ¹²	1) Life Satisfaction 2) Brief Multidimensional Students' Life Satisfaction Scale	Association between perception of life satisfaction and 5 out of 7 assets. Associations varied according to gender and ethnic group.

Note: OT: Observational Transversal; OL: Observational transversal; P: Prospective; I: Intervention; QE: Quasi-experimental; RCT: Randomized Controlled Trial/Design; QT: Quantitative Method; QL: Qualitative Method; 1- Intervention framework *Search Institute* for implementation support, aimed at developing the capacity of practitioners to implement practices oriented towards a positive development; 2- 8 personal perspective factors, 2 dimensions: external, internal (Support, Autonomy, Boundaries and expectations, Constructive use of time, Commitment to Learning, Positive Values, Social Competences, positive identity), 5 contextual perspective factors (personal, social, family, school, community), *Search Institute*; 3-*Developmental Assets Profile*; 4- Thriving Indicators: school success; helping others; value diversity; preserve health; demonstrate leadership; coping with danger; delaying gratification; overcoming adversity; 5-*Profiles of Student Life: Attitudes and Behaviors*; 6- Assets: Family Communication, Aspirations for the future, Responsible Choices, Good health practices, Use of time (religion), Use of time (sports/groups), Non-parental adult role models, Peer role models, Community Involvement, Cultural Respect; 7-Youth Asset Study; 8- Consult description 40 Asset Framework *Search Institute* introduction section; 9- Risk behavior patterns: alcohol, tobacco use, illegal substances; sexual, antisocial and gambling behavior; depression and/or suicide attempt; violence; school problems; driving and alcohol use; 10- 17 Asset Framework: Framework Oman et al. (2002)⁶ additionally 7: Individual: educational aspirations, general self-confidence, religiosity; Family: Relationship with mother, Relationship with father, Parental monitoring; Community level: Relationship with school; 11- Parents and other adults support, responsibility for other adults, empowerment, school support, values related to risk behaviors, other adult support and empathic relationships; 12-Health Attitude and Behavior Survey