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# Predictors of Psychosocial Adjustment in Adolescents in Residential Care: A Systematic Review

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## ABSTRACT

Adolescents in residential care have an increased risk of developing psychosocial problems, however, not all adolescents are equally vulnerable. This study aims to provide a review and methodological evaluation of current studies, which focus on protective and risk factors associated with the psychosocial adjustment of adolescents in residential care. Relevant literature was searched in five databases and we identified 25 publications, which met the inclusion criteria. Information regarding direct/indirect risk and protective factors was organized at the individual, social and contextual levels for different outcomes. The results showed that risk and protective factors, were mainly social and contextual factors. Moreover, very few individual factors were found to be related to psychosocial adjustment. Qualitative content analysis was used to analyze each study and showed that some data was poorly or inconsistently reported. This review showed that research on risk and protective factors related to adolescents living in residential care is still limited. Therefore, longitudinal studies with high-quality design and power are needed.

## KEYWORDS

Systematic review; residential care; protective factors; risk factors; adolescents

## Introduction

The residential care of young people is a troubling social phenomenon in today's world (Unicef, 2003). However, research in this field faces several obstacles, starting with the definition of residential care, as there is no clear operational distinction between different out of home placements (Curtis, Alexander, & Lunghofer, 2001; Lee & Thompson, 2008). There is marked variability in the use of certain terms according to lexical habits from different geographical areas. For instance, group care is a term used in the United States of America, whereas residential care is used in other countries (e.g. European countries) (Dozier et al., 2014). This limitation leads to the aggregation of diverse programs under a unique term, as group care or residential care was a uniform or indistinguishable construct. However, these terms can be very heterogeneous, depending on the target population, length of stay, level of restrictiveness and treatment approach (Butler & McPherson, 2007; Lee & Thompson, 2008). For the purpose of this review, we focused and

collected information in more generic residential care, group care and children's homes. Thus, the sample characteristics are more homogeneous: orphaned, abandoned and/or abused children under protection measures in custodial care settings. This allows to control and compare institutions, due to their more similar organizational characteristics.

According to recent data reported by the United Nations Children's Fund—UNICEF (Petrowski, Cappa, & Gross, 2017; Unicef, 2009), it is estimated that over 2.7 million children and adolescents (between 0 and 17 years of age) around the world are living in residential care institutions in the custody of the state. However, due to lack of records, this situation represents an underestimate of the real number of children living in institutions worldwide. Save the Children estimates about 8 million children and adolescents residing in institutions, which is four times larger than UNICEF's estimates (Save the Children, 2009). Residential care is more prevalent in Central and Eastern Europe, although Central Asia presented the highest rate all around the world (Unicef, 2009).

These aspects are particularly important, given the difficulty and complexity of developing strategies to combat a problem, when its length and depth is not accurately known. Although some countries and studies recognized that institutional environments are not the best developmental contexts, nor in the best interest of children (Nathanson & Tzioumi, 2007), they are often the first and only solution in many countries. Adolescence is a period of physical, emotional, cognitive and social transitions, with significant implications for development and psychological adjustment (Crockett & Silbereisen, 2000; Lerner & Galambos, 1998). These transitions are particularly challenging for adolescents in residential care, as they must live in a new home that they did not choose. This may activate a sense of abandonment and rejection, which might increase situations of risk and vulnerability (Mota, 2008). Furthermore, it makes sense to focus on the adolescence period, since adolescents manifest significantly more emotional and behavioral problems than other age groups (McRoy, Grotevant, & Zurcher, 1988; Van der Vegt, Van der Ende, Ferdinand, Verhulst, & Tiemeier, 2009).

In psychological research, adjustment refers to the mental health of the individuals, namely their state of mind and overall well-being (e.g. Arbuckle & Vries, 1995; Hatch, 2000). Moreover, it reflects how an individual is able to cope with the demands of the environment. Empirical literature often measures psychological adjustment using different outcomes as indicators of adjustment, such as self-esteem, anxiety or depression and school problems. Although adolescents in residential care tend to have an increased risk for the development of psychological problems, they are not equally vulnerable. The social importance of this phenomenon and the need to analyze the whole system of protection must become a central issue for social policies. Similarly, it justifies the need to study risk and protective factors for children and adolescents' development and adjustment. This study presents a systematic review of existing literature on risk and protective factors for the adolescents' psychological adjustment in residential care settings.

## **Risk and protective factors in residential care**

Residential care is an integrated social response of the child protection system, whose obligation and duty is to ensure a qualified and adjusted response to the needs of unprotected children and adolescents (Eurochild, 2010). In industrialized countries, children and

adolescents enter residential care mostly due to neglect, maltreatment, as well as psychological, physical and sexual abuse (Gilbert et al., 2009). Several systematic reviews and meta-analyses have shown that the institutionalization experience is associated with insecure attachment patterns (Carr, Duff, & Craddock, 2018; Lionetti, Pastore, & Barone, 2015; Van den Dries, Juffer, Van IJzendoorn, & Bakermans-Kranenburg, 2009), suicide attempts (Evans et al., 2017; Kääriälä & Hiilamo, 2017), delays in intellectual functioning (Van IJzendoorn, 2008), mental health and developmental problems (Kääriälä & Hiilamo, 2017). Many of these difficulties are largely due to the inadequacies of early childcare with primary caregivers and lack of support during the transition (McLean, 2003).

Conceptually, risk factors represent variables, events and mechanisms that tend to be related to higher negative outcomes, affecting the development of the individual (Garmezy, 1985; Rutter, 1999). According to the ecological perspective of human development by Bronfenbrenner (1979), risk can be considered in the various systems in which the individual develops and interacts, such as individual (e.g. intelligence, gender), interpersonal (e.g. social isolation), family (e.g. family conflicts), school (e.g. school failure) and community systems (e.g. poverty). Adolescents living in residential care may have been exposed in their life trajectories to risk factors, such as negligence, deprivation, poverty, violence and abuse (McLean, 2003), which have effects on their psychosocial adjustment. It should be noted that, despite the vast number of risk factors, their impact depends on individual characteristics and the features of these factors (Rutter, 1987).

Despite previous adversity, some children who enter residential care may experience positive outcomes. There is some evidence that institutional childcare can be viewed as a positive resource (Martins & Szymanski, 2004; Newcomb, 1990; Siqueira & Dell'Aglio, 2006). A recent critical review suggests that emotional and social development can be positively affected by residential care (Steels & Simpson, 2017). The services provided in the institution can contribute to the emotional and cognitive reworking of past situations, preventing the emergence of psychosocial problems in the future. Research related to protective factors emphasizes three important processes of protection, which are providing role models, monitoring and offering support. Therefore, having good models, routines and supportive adults seem to be crucial protective factors for the adolescents' positive development in residential care (Jessor et al., 2003). Accordingly, residential care can be a source of developmental opportunities for young people who benefit from them (Knorth, Harder, Zandberg, & Kendrick, 2008). In many cases, these adolescents are able to overcome some difficulties and achieve positive adaptation (Luthar, Cicchetti, & Becker, 2000; Mota, 2008), thus exhibiting resilience. Resilience constitutes a dynamic process, able to modify the effect of certain life circumstances, which involves an interaction between risk and protective factors (Olsson, Bond, Burns, Vella-Brodrick, & Sawyer, 2003). Protective factors are related to positive outcomes or consequences from exposure to risk, thus conceptually operating as opposite strength to risk (Garmezy, 1983).

There is, however, no systematic review that has examined risk and protective factors with this particular population and in this unique developmental period (Pinchover & Attar-Schwartz, 2014). To understand what can cause or affect the development of adolescents is a matter of undoubted theoretical interest, but especially with undeniable practical implications, should the interventions with adolescents, professional caregivers and organizational environments be rooted in scientific knowledge. According to the literature, studies that have been conducted on risk and protective factors in relation to negative

and positive outcomes among residential care adolescents are diverse and results need to be integrated. To address this critical need, the present study aims to provide a systematic and critical review on studies that analyze risk and protective factors at the individual, social and contextual levels in evaluating the outcomes of adolescents in residential care.

## Method

### *Criteria for selection of articles*

Given the variability and heterogeneity of group care settings, in the current review, we focused on “conventional” institutions, and collected information from more generic residential care, group care and children’s homes.

Thus, the inclusion criteria used for the studies were the following: (a) the term institution and residential care referred to a multiple-caregiver rearing context, in contrast, a biological or adoptive family environment; (b) the studies explored risk factors and/or protective factors for the development of adolescents in residential care; (c) adolescents’ ages ranged from 11 to 18 years old. Studies were excluded if: (a) adolescents were involved in an experimental intervention program; (b) adolescents were not living in an institution during the data collection; (c) the term institution or residential care referred to corrective situations, psychiatric hospitals or other mental health facilities; (e) studies without predictors (i.e. descriptive studies); (f) literature reviews; (g) case studies; (h) qualitative studies; (i) books; (j) unpublished articles; (k) doctoral theses; (l) young people with disabilities.

### *Search strategy*

The current study was conducted in accordance with the Cochrane Collaboration guidelines for systematic reviews and meta-analyses (Higgins & Green, 2011). The following general and specific databases in the field of psychology were searched for studies published between 1911 and 2017: Medline, Academic Search Complete, PsycInfo, PsycArticles, Psychology and Behavioral Sciences Collection (until November 2017). The keywords used were: residential care OR group care OR children’s homes OR institutionalization OR adolescents institutionalized in the titles of articles, abstracts and keywords in combination with the terms: AND protective factors OR risk factors OR emotional regulation OR self-esteem OR behavior problems OR delinquency OR depressive symptoms OR psychopathology OR mental health OR stress OR deprivation OR violence OR poverty OR abuse OR maltreatment OR quality of the caregiving OR coping skills OR cognitive abilities OR absence OR neglect OR social environment OR social support OR peers OR predictors OR adjustment OR well-being. The search was forced to exclude the following words: elderly OR older OR adults OR older persons OR geriatrics OR prisons OR hospitalization OR hospitals OR residential treatment. No linguistic or geographical constraints were made, as to minimize publication bias.

### *Risk of bias within studies*

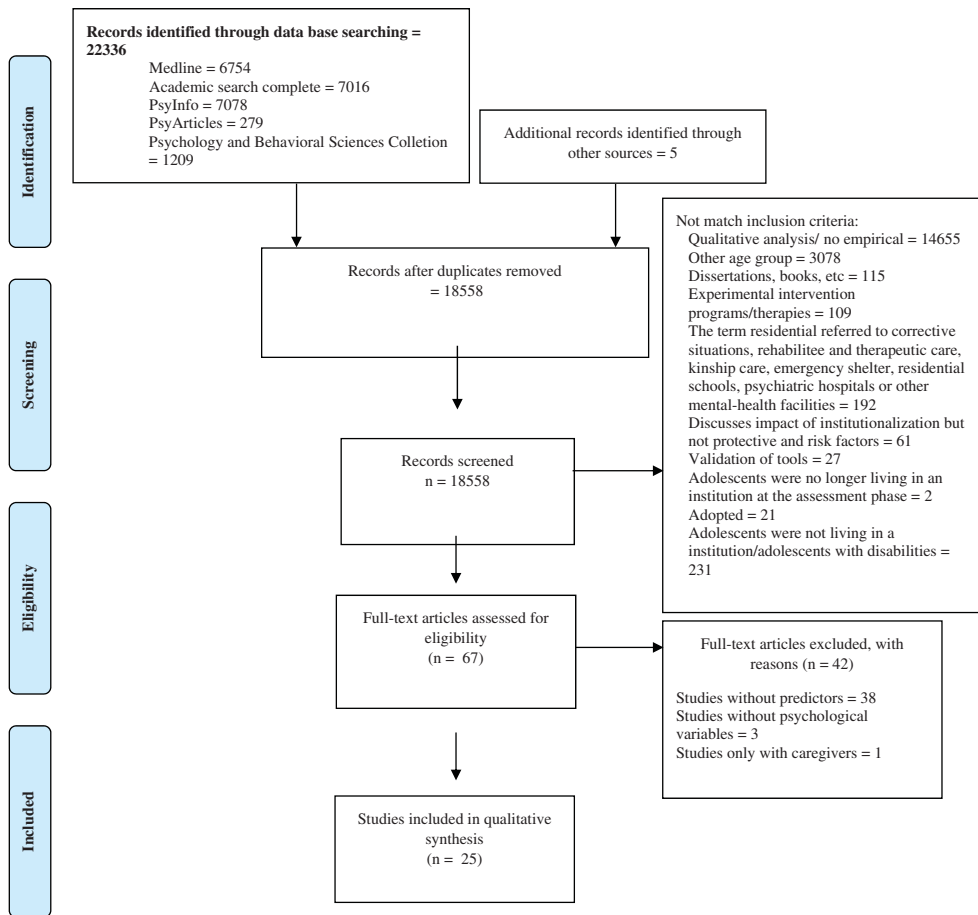
Critical appraisal was conducted using appropriate tools to assess the quality of reporting (Lohr, 2004). The Strengthening the Reporting of Observational Studies in Epidemiology initiative (STROBE) checklist was used to assess the quality of each study ( $N = 25$ ) (Von

Elm et al., 2007). This tool allowed for a critical appraisal regarding the appropriateness of the background/rationale of the study, methods of data collection and analysis, participant and setting selection, results, interpretation and generalizability of the results.

## Results

The search strategy identified 22,336 references. Of these, 3782 were automatically eliminated because they had the same title and 18,558 were excluded as they did not meet the inclusion criteria. The reasons for exclusion were as follows: 14,655 qualitative studies or non-empirical studies, 3078 not adolescents, 109 experimental intervention program for adolescents, 192 the term residential referred to juvenile justice situations, psychiatric hospitals or other mental health facilities, 61 did not report risk and protective factors (without predictors), 27 studies addressed validation of instruments, in two studies adolescents were no longer living in an institution during the data collection, 21 adolescents were adopted and 231 studies for including adolescents who were not living in the institution. Firstly, we thoroughly analyzed headings and abstracts, and selected 67 potentially eligible articles to apply the stated inclusion and exclusion criteria (Figure 1). Finally, 42 were excluded for not meeting the inclusion criteria (i.e. studies without predictors—analysis focusing only on trajectories of specific outcomes; studies without psychological variables; studies only with caregivers). This resulted in 25 articles identified as eligible (Table 1). The detailed information retrieved from the studies regarding risk and protective factors for adolescents in residential care is presented in Table 2. Although no temporal restrictions were placed, the studies found are recent. The studies were conducted in several countries, namely Brazil, Croatia, France, Islamic Republic of Iran, Israel, Korea, Japan, Portugal, Spain, United Kingdom and USA. The number of participants per study ranged from 66 to 3803 adolescents and the mean age ranged from 11.70 to 19.50. Most studies comprised only adolescents in residential care; however, some studies used, as a comparison group, adolescents living with their biological families ( $n = 9$ ) (Table 1). Eight major themes emerged from the analysis of the included studies: (1) well-being, (2) social adaptation, (3) self-esteem, (4) coping strategies, (5) risk behaviors, (6) adjustment difficulties to the residential care setting, (7) future expectations/worries about transition and (8) behavioral and emotional problems. The information was organized according to protective and risk factors related to the previously identified outcomes (see appendix). Table 2 presents the global risk and protective factors in terms of the individual, social and contextual domains.

The results showed that none of the included studies addressed all of the STROBE criteria. The scores ranged between 5 and 20, with most studies exhibiting scores above 14. Some data was poorly or inconsistently reported: the articles did not provide participants' demographic, clinical or social characteristics, which may compromise and limit generalizability of the results. Furthermore, the articles did not present efforts to address potential sources of bias, nor did they indicate missing data information. Overall, the settings, including periods of recruitment and data collection, were poorly reported. Finally, no articles used a flow diagram to demonstrate the sample recruitment. Moreover, it should be noted that only two studies present the effect sizes for the results obtained (Davidson-Arad & Klein, 2011; Segura, Pereda, Guilera, & Abad, 2016). The degree of significance of these effects for the results obtained varied from medium to strong (Davidson-Arad & Klein, 2011; Segura et al., 2016).



**Figure 1.** Flow diagram of the literature search process.

### Outcome: well-being/quality of life/happiness/ life satisfaction

Only two studies included in this review examined predictors of well-being and/or quality of life for adolescents in residential care (Davidson-Arad & Klein, 2011; Mota & Matos, 2015b). The first study examined the role of sibling relationships in the residential care setting and suggests that self-esteem, sibling closeness and higher frequency of meetings with siblings were associated with quality of life and well-being. Furthermore, findings revealed that quality of life tends to be higher for those who perceived their parental economic status as average, comparatively to those who perceived it as poor (Davidson-Arad & Klein, 2011). Another study confirmed the importance of the quality of relationships between adolescents and significant figures (i.e. institution staff and teachers) as fundamental for the adolescents' well-being (Mota & Matos, 2015b). Finally, a comparative study with adolescents from biological families showed that family structure is the most important predictor when considering life satisfaction. Participants living at home with their families reported higher life satisfaction than adolescents living in residential care (Sastre & Ferrière, 2000). Moreover, structural analysis revealed four factors with a

**Table 1.** Studies characteristics ( $N = 25$ ).

Authors	Year	Country	Sample	Age	Residential care	Control Group	Reason for protection measure
Bick, Fox, Zeanah & Nelson	2017	Romania	69	8–10 12–14	26	23 (foster care) 26 (institutional care) 20 (biological families)	NR
González-García, Bravo, Arrubarrena, Martín, Santos & Del Valle	2017	Spain	1216	6–18 ( $M = 13.43$ ; $SD = 2.97$ )	1216	X	– Psychological (or emotional) abuse – Physical abuse – Abandonment – Maltreatment
Moreno-Manso, García-Baamonde, Guerrero-Barona & Pozueco-Romero	2017	Spain	66	12–17	66	X	– Psychological (or emotional) abuse – Physical abuse – Neglect – Parental inability to care
Lino, Nobre-Lima & Mónico	2016	Portugal	100	12–18 ( $M = 14.75$ ; $SD = 1.88$ )	100	X	NR
Moreno-Manso, García-Baamonde, Blázquez-Alonso, Pozueco-Romero & Godoy-Merino	2016	Spain	66	12–17	66	X	– Psychological (or emotional) abuse – Physical abuse – Neglect – Parental inability to care – Parents' renunciation
Segura, Pereda, Guilera & Abad	2016	Spain	127	12–17 ( $M = 14.60$ ; $SD = 1.61$ )	127	X	– Physical and sexual abuse – Neglect – Unaccompanied immigrant children – Labor exploitation – Witnessing domestic violence
Zappe & Dell'Aglio	2016	Brazil	503	11–19 ( $M = 14.91$ ; $SD = 1.52$ )	75	376 (biological families) 52 (under educational measures)	NR

(Continued)



Table 1. Continued.

Authors	Year	Country	Sample	Age	Residential care	Control Group	Reason for protection measure
Mota & Matos	2015a	Portugal	387	12–18 ( <i>M</i> = 14.93; SD = 1.81)	387	X	– Neglect – Abandonment
Mota & Matos	2015b	Portugal	246	12–18 ( <i>M</i> = 14.87; SD = 1.79)	246	X	– Neglect – Abandonment
Mota, Serra, Relva & Fernandes	2015	Portugal	387	12–18 ( <i>M</i> = 14.72; SD = 1.63)	172	215 (biological families)	– Neglect – Abandonment
Suzuki & Tomoda	2015	Japan	342	9–18 ( <i>M</i> = 13.5 ± 2.4)	342	X	NR
Costa & Mota	2014	Portugal	311	14–18 ( <i>M</i> = 16.01; SD = 1.14)	145	166 (biological families)	NR
Pinchover & Attar-Schwartz	2014	Israel	1324	11–19 ( <i>M</i> = 14.06; SD = 1.95)	1324	X	NR
Mota & Matos	2013	Portugal	109	12–18 ( <i>M</i> = 16.19; SD = 1.37)	109	X	– Parental inability to care
Costa & Mota	2012	Portugal	311	14–18 ( <i>M</i> = 16.01; SD = 1.142)	145	166 (biological families)	NR
Aguilar-Vafaie, Roshani, Hassanabadi, Masoudian & Afruz	2011	Islamic Republic of Iran	140	11–18 ( <i>M</i> = 15.4; SD = 1.54)	140	X	– Death of mother and/or father or both – Addiction, deviant behavior of one or both of the parents – Parental inability to care
Davidson-Arad & Klein	2011	Israel	194	12–14 ( <i>M</i> = 13.5; SD = 2.24)	194	X	NR
Sulimani-Aidan & Benbenishty, Tulviste	2011 2011	Israel Estonia	277 215	17–22 ( <i>M</i> = 19.5) 15–20 ( <i>M</i> = 16.18; SD = 1.25) 15–19 ( <i>M</i> = 16.21; SD = 0.82)	277 109	X 106 (home-reared)	NR – Maltreatment – Parental problems with alcoholism

(Continued)

**Table 1.** Continued.

Authors	Year	Country	Sample	Age	Residential care	Control Group	Reason for protection measure
Abaid, Dell'aglio & Koller	2010	Brazil	127	7–16 ( $M = 11.07$ ; $SD = 2.07$ )	127	X	NR
Han & Choi	2006	Korea	202	11–14	97	105 (biological families)	NR
Franz	2004	Croatia	463	10–14	263	200 (biological families)	NR
Burns, et al.	2004	USA	3803	2–14	X	X	– Sexual abuse – Maltreatment
Sastre & Ferrière	2000	France	100	12–19	50	50	– Deterioration of the family environment
Robinson	2000	West Midlands (United Kingdom)	80	13–16	40	40 (biological families)	– Parental neglect/inadequacy

Note: NR: Reason for protection measures was not reported.

**Table 2.** Identification of risk and protective factors at the levels of the individual, social and contextual domains.

Protective factors		
Individual	Social	Contextual
<ul style="list-style-type: none"> <li>• Gender (male)</li> <li>• Secure attachment</li> <li>• Higher self-esteem</li> <li>• Positive coping strategy</li> <li>• Social skills</li> <li>• Emotional competence/intelligence</li> <li>• Personal growth/autonomy</li> <li>• Positive attitude toward school</li> <li>• Importance of religion</li> </ul>	<ul style="list-style-type: none"> <li>• Relationship to significant figures (teachers, school and institution staff)</li> <li>• Quality of sibling relationship</li> <li>• Peer attachment</li> <li>• Staff support</li> <li>• Monitoring by caregivers at the residential care</li> <li>• Peer expectations against use of drugs</li> <li>• Satisfaction with family life</li> </ul>	<ul style="list-style-type: none"> <li>• Living in the institution</li> <li>• Positive perceptions of the residential care social climate</li> <li>• Staying longer in residential care</li> <li>• Living at home</li> <li>• Parents' economic status (average)</li> </ul>
Risk factors		
Individual	Social	Contextual
<ul style="list-style-type: none"> <li>• Avoidant and ambivalent attachment</li> <li>• Low self-esteem</li> <li>• Negative coping skills</li> <li>• Intellectual disability</li> <li>• Maltreatment (sexual abuse, emotional abuse)</li> <li>• Neglect</li> <li>• Suicidal behaviors</li> <li>• Lower school achievement</li> <li>• Attitudinal intolerance against deviance</li> <li>• Experiences of previous foster care or adoption breakdown</li> </ul>	<ul style="list-style-type: none"> <li>• Alienation to peers/ feeling rejected by colleagues and friends</li> <li>• Peer victimization</li> <li>• Peer models for risk behavior</li> <li>• Having problems with teachers</li> <li>• Sibling dominance</li> <li>• Social communication disorders</li> <li>• Difficulty in the resolution of social problems</li> </ul>	<ul style="list-style-type: none"> <li>• Living in institution</li> <li>• Unfavorable institutional climate</li> <li>• Risk-poverty</li> <li>• One of the parents has to live far away</li> <li>• Parents' economic status (poor)</li> <li>• Mental health disorders in the family</li> <li>• Availability of drugs and alcohol at the residential care institution</li> <li>• Higher level of every day stress</li> </ul>

significant contribution to life satisfaction: family life, personal and social growth, work, and self-affirmation, although this was negatively related to life satisfaction. According to the authors, self-affirmation (a factor composed by rather different items) expresses the idea of struggling with the need of freedom justifying the negative correlation (Sastre & Ferrière, 2000).

### Outcome: social adaptation/loneliness

Four studies included in this review analyzed predictors of social adaptation and loneliness (Han & Choi, 2006; Lino, Nobre-Lima, & Mónico, 2016; Moreno-Manso, García-Baamonde, Blázquez-Alonso, Pozueco-Romero, & Godoy-Merino, 2016; Moreno-Manso, García-Baamonde, Guerrero-Barona, & Pozueco-Romero, 2017). One study examined how the cognitive dysregulation of adolescents in care affected the quality of relationships established with their peers, and found that it was moderated by length of stay. However, this effect was only significant in boys (Lino et al., 2016). When boys' cognitive dysregulation is higher, staying longer in residential care improved communication, trust and perceptions of attachment to peers (Lino et al., 2016). Two studies highlighted communication as an important factor for child development and

essential for interacting with peers. Social communication was significantly predicted by dimensions of emotional intelligence (emotional attention, clarity of feelings and emotional repair), as well as cognitive and affective empathy (adoption of perspective, emotional understanding, empathic stress, empathic joy and global empathy dimension) (Moreno-Manso et al., 2017). A different study found that global attribution of failure (as opposed to specific) in adolescents in care is a predictor of loneliness (Han & Choi, 2006). Finally, adolescents' social communication significantly predicted all prosocial attitudes (social conformity, social sensitivity, help and collaboration, self-confidence and firmness, and prosocial leadership). In turn, social communication negatively predicted impulsiveness, rigidity of thought, social distrust and suspicion, as well as different strategies for solving social problems (difficulty to obtain information, difficulty to find solutions, difficulty to anticipate consequences and difficulty to choose adequate means) (Moreno-Manso et al., 2016).

### **Outcome: self-esteem/ self-concept**

The variables self-esteem and self-concept were analyzed in five studies and identified not only as a motivating variable, but also as an important protective factor for adolescents living in residential care (Luke & Coyne, 2008). These studies suggested that peer attachment (communication and trust), positive reinterpretation (Costa & Mota, 2014; Mota & Matos, 2013), deidealization and behavioral autonomy (Tulviste, 2011), and internalization attitudes (Robinson, 2000) were associated with self-esteem and self-concept. Self-esteem was also predicted by male gender (Costa & Mota, 2014) and being home-reared. Adolescent males presented higher scores compared to females, and home-reared adolescents also scored higher than institution-reared adolescents (Tulviste, 2011). On other hand, self-esteem was negatively predicted by alienation to peers (Costa & Mota, 2014; Mota & Matos, 2013) and pre-encounter attitudes of devalue (Robinson, 2000). Finally, adolescents who stay emotionally close to siblings during residential care exhibit higher levels of self-concept and resilience. Resilience mediates the association between emotional contact with siblings and self-concept (Mota & Matos, 2015a).

### **Outcome: coping strategies**

We have found two studies which examined predictors of coping strategies of adolescents in residential care (Costa & Mota, 2012; Mota & Matos, 2013). Peer attachment (communication and trust), social skills (assertion, empathy) and self-esteem revealed a significant and positive direct effect on active coping (Mota & Matos, 2013). Finally, alienation in peer relationships showed a significant effect on avoidant coping, and communication with peers predicted using emotional support as a coping strategy (Costa & Mota, 2012).

### **Outcome: risk behaviors**

One study examined the predictors of risk behaviors. The findings revealed that the institution can be a protective factor, to the extent that adolescents presented a significant decrease of risk factors (e.g. violence) over time (10-12 months later) (Zappe & Dell' Aglio, 2016).

### **Outcome: adjustment difficulties to the residential setting**

One of the studies included in this review examined protective and risk factors for overall adjustment difficulties (Pinchover & Attar-Schwartz, 2014). The findings revealed that positive perceptions of the social climate experienced at the residential care (i.e. less strict rules, more supportive staff; friendly and less poorly behaved peers; greater general satisfaction with the setting) are associated with fewer adjustment difficulties. This study also found that social climate is negatively associated with peer victimization, and peer victimization, in turn, is positively associated with adjustment difficulties (Pinchover & Attar-Schwartz, 2014).

### **Outcome: future expectations/worries about transition**

One study analyzed the personal (e.g. optimism) and environmental variables (e.g. support from peers and staff) that predicted future expectations of young people while still in residential care, as well as their worries about transition to independent living. Results showed that perceived readiness for independent life and optimism are the most significant predictors of future expectations, while readiness for independent life and staff support were the highest predictors of worries about leaving residential care. Adolescents who reported higher staff support and readiness for independent life also reported less worries about pending transition (Sulimani-Aidan & Benbenishty, 2011).

### **Outcome: behavioral and emotional problems**

Eleven studies focused on the prediction of behavioral and emotional problems. The results showed that behavioral and emotional problems are predicted by higher levels of stress in everyday life, coping with stress and using avoidant coping strategies. Furthermore, adolescents who reported having more problems came from larger families, often coped with stress by seeking social support and by using frequent expression of emotions, and had poorer academic achievement. Findings also showed that an unfavorable institutional climate (rigid and unpleasant) predicted behavioral and emotional problems. According to the childcare workers' perspectives, the strongest predictors of behavioral and emotional problems are poorer academic achievement and rare use of avoidance as a stress coping strategy (Franz, 2004), although the authors do not explain how these variables were assessed by the childcare workers.

Of ten studies, three identified predictors of adolescents' psychopathology (Aguilar-Vafaie, Roshani, Hassanabadi, Masoudian, & Afruz, 2011; Mota, Serra, Relva, & Fernandes, 2015). The first study identified that sibling relationships guided by dominance of one of the siblings and, simultaneously, by significant closeness may produce emotional insecurities and vulnerability in adolescents. Finally, somatic, anxiety, depression and interpersonal sensitivity symptoms were higher in institutionalized adolescents, compared to adolescents from biological families (Mota et al., 2015).

Another study identified several aspects at individual, peer, residential care, and community levels that serve as risk and protective factors to externalizing and internalizing problems, as well as prosocial behavior (see appendix). The most important protective factors were: religiosity (importance of religion), positive attitudes toward school,

caregivers' monitoring at the residential care institutions, attitudinal intolerance to deviance, peer expectations against drug use and feelings of intimacy and connectedness with teachers. The results identified perceived stress, opportunity risk-poverty, availability of drugs at residential care and peer models for risk behavior as the most important risk factors (Aguilar-Vafaie et al., 2011).

Two studies included in this review also reported risk and protective factors associated with depressive symptoms (Abaid, Dell'Aglio, & Koller, 2010; Suzuki & Tomoda, 2015). In Suzuki and Tomoda's (2015) study, maltreatment (sexual abuse, emotional abuse), low self-esteem, avoidant and ambivalent attachment positively predicted depressive symptoms. In turn, the secure attachment was negatively associated with depressive symptoms. Moreover, one longitudinal study (Abaid et al., 2010) identified some risk factors for depressive symptoms, namely problems with teachers, feeling rejected by peers and friends, and living far away from the parent(s) (e.g. the institution can be located geographically far from the family residence).

Another study identified several aspects serving as risk factors for mental health symptoms, particularly thought problems, rule-breaking behavior, anxious/depressive symptoms, withdrawal/depression, aggressive behavior and attention problems (Segura et al., 2016).

Two studies examined the factors predicting the use of mental health services. Individual factors, such as intellectual disability, history of suicidal behavior or sexual abuse, experiences of previous foster care or adoption breakdown (González-García et al., 2017), and background of mental health disorders in the family (Burns et al., 2004; González-García et al., 2017) all increase the likelihood of receiving/using mental health services.

Finally, a study by Bick, Fox, Zeanah, and Nelson (2017) examined whether severe neglect may influence normative brain development. The results indicated that early neglect experiences are associated with atypical brain development, increasing the likelihood of children and adolescents to develop internalizing symptoms.

## Discussion

This study aimed to provide a systematic review and methodological evaluation of current studies examining protective and risk factors associated with psychosocial adjustment of adolescents in residential care. To our knowledge, this is the first review addressing these questions. Although, it is extremely difficult to accurately compare results and to make generalizations, the current systematic review provided relevant information regarding several risk and protective factors, at the individual, social and contextual levels. Firstly, findings regarding individual variables will be addressed. Individual-level characteristics, such as gender, self-esteem, social skills, coping strategies, optimism, maltreatment and global attribution of failure, were identified as major risk and protective factors. These factors are correlated with psychosocial adjustment. The association between gender and self-esteem showed that male adolescents presented higher self-esteem (Costa & Mota, 2014; Tulviste, 2011). This is consistent with literature on adolescence, which demonstrates that girls tend to report lower self-esteem (Quatman & Watson, 2001) and more depressive symptoms (Baron & Campbell, 1993; Marcotte, Fortin, Potvin, & Papillon, 2002). Self-esteem has a crucial influence on actions, constituting an important

factor for success or failure (Costa & Mota, 2014; Mota & Matos, 2013; 2015a). Literature suggests that high self-esteem functions as a mechanism, capable of reducing suffering and/or enhancing a faster recovery from stressful events (Arndt & Goldenberg, 2002). Conversely, low self-esteem may be a risk factor with severe damage for development, being associated with depression, failure to achieve one's own potential, exclusion from others and insecurity (e.g. Marshall, Parker, Ciarrochi, & Heaven, 2013; Meegan & Kashima, 2010).

The literature has emphasized the relevance of social skills, showing that adolescents with more social abilities are more able to solve difficulties, through seeking emotional assistance and to actively cope with problems (Mota & Matos, 2013). These findings are consistent with the literature, which shows that the development of socially appropriate behaviors contribute to greater emotional stability in adolescents (Luke & Coyne, 2008). Social skills were also identified as a potential protective factor in the development of adolescents living in residential care (Luke, Maio, & Cannelley, 2004). Furthermore, this review highlighted the relevance of emotional skills and social communication for adolescents' social adaptation (Moreno-Manso et al., 2016; Moreno-Manso et al., 2017). These results are in line with other findings which showed that, to be socially competent, every individual must have a variety of cognitive, emotional and behavioral resources (García-Sáiz, 2011). The results of the present review showed that adaptive coping strategies can be a key protection mechanism in restoring the lost balance and dealing with adversity, thus confirming previous empirical studies with adolescents' samples from the general population (Pesce, Assis, Santos, & Oliveira, 2004). Therefore, coping illustrates the importance of individual differences and should be viewed as an important predictor of psychological adjustment in adolescents in residential care (Costa & Mota, 2012; Mota & Matos, 2013).

Findings also showed that personal variables, such as a personality trait of optimism, may predict future expectations and worries of adolescents (Sulimani-Aidan & Benbenishty, 2011). On the other hand, psychological adjustment can be affected by these expectations (Sulimani-Aidan & Benbenishty, 2011). The literature about children and adolescents in distress within the general population has demonstrated that optimism contributes to resilience and positive expectations about the future (Boman, Smith, & Curtis, 2003). Thus, optimism has been associated with adjustment in diverse life domains and positive outcomes (Ben-Zur, 2003).

Other important risk factors identified in this study are maltreatment, particularly sexual and emotional abuse (Burns et al., 2004; Segura et al., 2016; Suzuki & Tomoda, 2015), and severe parental mental illness (Burns et al., 2004; González-García et al., 2017). These confirm previous empirical studies undertaken with samples within juvenile correctional facilities and adolescents with adverse childhood experiences. Thus, results showed that child maltreatment and adverse experiences widely affect several emotional and behavioral issues during human life (Burke, Hellman, Scott, Weems, & Carrion, 2011; González-García et al., 2017; Matsuura, Hashimoto, & Toichi, 2009).

According to the literature, the confrontation with a new home, where adolescents did not choose to be, may leave them feeling abandoned and lonely (Alberto, 2002; Shaver & Rubenstein, 1980). Therefore, some studies described loneliness as an indicator of social maladaptation (Jones & Carver, 1991). However, some adolescents' characteristics may help them cope

with loneliness, increasing their adaptability and acting as self-protection during hard situations (Han & Choi, 2006). Some studies on depression and attributional styles have tested the association between negative emotions and attributions. As previous studies have indicated (Heyman & Dweck, 1998; Skinner, 1995), loneliness is related with the generalization of results from interpersonal events. In this sense, global attribution of failure is a significant predictor of loneliness in institutionalized adolescents (Han & Choi, 2006).

The construction of social relations may constitute an indicator of psychological adaptation in adolescents, since their social world quantitatively and qualitatively expands (Furman & Buhrmester, 1985). Social-level characteristics, such as staff support, problems with teachers, feeling rejected by peers and friends, peer attachment, victimization by peers, parent(s) living far from the institution, and sibling relations were identified as major risk and protective factors, correlating with psychosocial adjustment of institutionalized adolescents.

Institutional caregivers will be the primary support network during the transition from living with biological families to residential care. The institutional staff can promote feelings of safety and security, by encouraging positive adaptation to the institution (e.g. Fergus & Zimmerman, 2005; Luthar et al., 2000). Relevant adult figures, such as institutional staff and teachers, who accompany the development of adolescents, were identified as protective factors for self-esteem in institutionalized adolescents (Aguilar-Vafaie et al., 2011; Mota & Matos, 2015b; Pinchover & Attar-Schwartz, 2014; Sulimani-Aidan & Benbenishty, 2011).

Siblings were identified as other important figures in the relational world of adolescents. Quality sibling relationships contributed to positive development outcomes, such as well-being and self-esteem (Costa & Mota, 2014; Davidson-Arad & Klein, 2011; Mota & Matos, 2015a). An overview of international research indicated that siblings can constitute an important source of support when placed together in the same institution. Furthermore, siblings' proximity can reduce adolescents' feelings of abandonment by providing a sense of emotional stability in the new context (Hegar, 2005). These results are consistent with our findings, which reveal that keeping siblings together in an institutional environment provides better outcomes compared to having siblings in different placement locations (Davidson-Arad & Klein, 2011).

The transition into adolescence may bring new potentially significant figures into their relational network, while facilitating the fulfillment of emotional needs (Rocha, Mota, & Matos, 2011). Peers are extremely relevant to adolescents, due to experiences of similitude, reciprocity and sharing that may facilitate closeness and feeling supported (Wilkinson & Parry, 2004). Therefore, the results showed that rejection by peers can have adverse effects on psychosocial adaptation, constituting a potential risk factor for development (Abaid et al., 2010). However, when adolescents feel rejected or experience physical victimization by peers, they tend to seek social acceptance in other ways, often characterized by indiscipline (Carroll, Houghton, Hattie, & Durkin, 1999). Thus, significant relationships can function as a protective factor when they promote feelings of security and self-esteem. According to the literature, these relationships tend to be related to more adaptive outcomes (Costa & Mota, 2012; 2014; Mota & Matos, 2013). Alternatively, significant relationships can also function as a risk factor with damage to development, when they induce suffering, insecurity and vulnerability in the individual (Abaid et al., 2010; Costa & Mota, 2012; 2014; Pinchover & Attar-Schwartz, 2014).



Finally, the findings about contextual aspects that serve as risk and protective factors will be addressed. Although contextual factors constitute a relevant factor in explaining adolescents' development (Bronfenbrenner, 1979), empirical literature barely analyzes the risk and protective factors in residential care. The few studies that examined these aspects concluded that the characteristics and the quality of the relational context of the institutions may be significant factors for explaining the behavior and development of adolescents (Aguilar-Vafaie et al., 2011; Franz, 2004; Pinchover & Attar-Schwartz, 2014). The results emphasized the relevance of a positive social climate for successful out of home placements. Examples of this are: less authoritarian and more supportive staff, friendly and less poorly behaved peers, and greater general satisfaction with the setting (Pinchover & Attar-Schwartz, 2014). Other variables, such as availability of drugs and alcohol at the residential care institution, poverty and high levels of everyday stress, may be risk factors for adolescents' development (Aguilar-Vafaie et al., 2011). On the other hand, variables such as peer expectations against drug use, monitoring by caregivers attitudinal intolerance to deviance are important protective factors for positive development (Aguilar-Vafaie et al., 2011).

The findings revealed that living in residential care may increase the likelihood of receiving mental health services (Burns et al., 2004) and increase low self-esteem, compared to adolescents living with their biological families (Tulviste, 2011). In contrast, the results also showed that institutions may allow a positive developmental path, as adolescents in residential care presented the most significant decrease in risk behavior compared to adolescents living with their families (Zappe & Dell'Aglío, 2016). Furthermore, some findings showed that living in the institution for a longer period of time can have a positive influence in adolescents' development. Living in a group context may promote greater communication, trust, and perceptions of attachment to peers, favoring the adaptive functioning of adolescents in residential care (Lee & Thompson, 2008; Lino et al., 2016). However, this inconsistency of results is in line with the literature, which shows that both family and residential care can promote positive or negative adolescent developmental trajectories depending on the quality of the environment provided, namely the quality of relationships, the presence of affection and possible reciprocity (Poletto & Koller, 2008).

The studies included in this review exhibited some limitations and methodological constraints regarding quality, namely participants' demographic, clinical or social characteristics (poorly or inconsistently reported), they did not indicate missing data information and the settings, including periods of recruitment and data collection were poorly reported. Thus, results presented here should be interpreted with prudence. Only two of the twenty-five studies used a longitudinal design in testing risk and protective factors associated with psychosocial adjustment of institutionalized adolescents (Abaid et al., 2010; Zappe & Dell'Aglío, 2016). Few studies considered age, gender, and time of institutionalization in the analyses, and most studies relied exclusively on adolescents' reports. In addition, studies presented different objectives and considerable methodological variability. Studies used different assessment measures and nine studies compared groups with different characteristics (e.g. institutionalized vs biological family). Overall, the volume of scientific publications in peer reviewed journals on the subject is scarce, despite the social and scientific relevance of the topic, especially considering the excessive rate of children and adolescents living in residential care worldwide. Scientific concern about this subject is recent, mainly between the years of 2010 and 2017.

## Limitations

Nonetheless, although a thorough and comprehensive search of all potentially relevant articles was conducted, and reproducible and explicit criteria were used in the selection of articles, like any systematic review, this is not without limitations. The Cochrane Collaboration recommends the search to be conducted on the most relevant databases of recognized quality. This was the case, but nevertheless, it is possible that relevant studies may have not been included in this review. Furthermore, it is possible that research without significant results is not included in this review. Given the difficulty that exists in publishing these results, publication bias is difficult to overcome. Although this review was about adolescents, other ages were included as long as the studies included the adolescent period. This criterion was adopted, since there is no uniformity between the studies in terms of sample ages. Due to the cross-sectional nature of most of the data, causal relationships between the variables could not be determined. In order to establish causal conclusions, longitudinal designs should be adopted, following adolescents over the time spent in residential care. Finally, it is important to note that results presented here should be interpreted with caution, since the studies varied in sample sizes and most did not present the effect size for the results obtained.

## Conclusions and implications for practice

This review allowed us to conclude that, to date, few studies have been conducted on risk and protective factors in relation to negative and positive outcomes among adolescents in residential care. However, it was possible to identify important protective and risk factors at the individual, social and contextual levels. Numerous methodological limitations hinder the advancement of scientific knowledge in the field of residential care. It is important to further test models that include other important figures in the relational world of institutionalized adolescents, such as professional caregivers. Caregiver participation is essential, since their perception about developmental and experiential aspects of adolescents, as well as their own personal characteristics, influence the way they provide secure emotional foundations for the adolescents. Thus, future studies should include information from more informants. Moreover, time is an important factor in the cognitive-emotional elaboration process of institutionalization and in building relationships with caregivers. Future studies should also include other aspects of the residential care experience, such as the role of contextual factors for understanding the development and functioning of adolescents.

Concerning practical implications, this study provides scientific support for guiding services, technical decisions and specific interventions with this population. Furthermore, we emphasize the relevance of identified individual, relational and contextual characteristics, in order to discuss models that are more effective and better predict psychosocial and developmental outcomes. It also allows to increase the awareness of political decision makers as to the importance of creating the best opportunities for children and adolescents living in residential care, particularly with regard to its functional and relational characteristics.

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## Appendix. Main results of each study

	Well-being		Social adaptation		Loneliness	
	Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
Davidson-Arad & Klein, 2011	<ul style="list-style-type: none"> <li>– sibling relations (closeness)</li> <li>– siblings' meetings</li> <li>– self-esteem</li> <li>– Parents' economic status (average)</li> </ul>	<ul style="list-style-type: none"> <li>– Parents' economic status (poor)</li> </ul>				
Mota & Matos, 2015b	<ul style="list-style-type: none"> <li>– relationship to significant figures of affection (teachers, school and institution staff)</li> </ul>					
Sastre & Ferrière, 2000	<ul style="list-style-type: none"> <li>– family life</li> <li>– growth</li> <li>– work</li> </ul>	<ul style="list-style-type: none"> <li>– self-affirmation</li> </ul>				
Lino et al., 2016			<ul style="list-style-type: none"> <li>– staying longer in the residential</li> </ul>	<ul style="list-style-type: none"> <li>– cognitive dysregulation</li> </ul>		
Moreno-Manso et al., 2017			<ul style="list-style-type: none"> <li>– emotional attention</li> <li>– clarity of feelings</li> <li>– emotional repair</li> <li>– adoption of perspective</li> <li>– emotional understanding</li> <li>– empathic stress</li> <li>– empathic joy</li> <li>– global empathy dimension</li> </ul>			
Moreno-Manso et al., 2016			<ul style="list-style-type: none"> <li>– social conformity</li> <li>– social sensitivity</li> </ul>	<ul style="list-style-type: none"> <li>– impulsiveness</li> <li>– rigidity of thought</li> </ul>		

(Continued)

Continued.

Well-being		Social adaptation		Loneliness	
Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
		<ul style="list-style-type: none"> <li>– help and collaboration</li> <li>– self-confidence</li> <li>– firmness</li> <li>– prosocial leadership</li> </ul>	<ul style="list-style-type: none"> <li>– social distrust and suspicion</li> <li>– difficulty to obtain information</li> <li>– difficult to find solutions</li> <li>– difficulty to anticipate consequences</li> <li>– difficulty to choose adequate means</li> </ul>		
Han & Choi, 2006					<ul style="list-style-type: none"> <li>– global attribution of failure</li> </ul>

	Self-esteem		Coping strategies		Risk behaviors	
	Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
Costa & Mota, 2014	<ul style="list-style-type: none"> <li>– peer attachment (confidence, communication in peer relationships)</li> <li>– positive coping strategy (positive reinterpretation)</li> <li>– gender (male)</li> <li>– contact with sibling</li> <li>– quality of sibling relationship</li> </ul>	<ul style="list-style-type: none"> <li>– Alienation to peers</li> </ul>				
Mota & Matos, 2013	<ul style="list-style-type: none"> <li>– peer attachment (communication and trust in peer relationships)</li> </ul>					
Mota & Matos, 2015a	<ul style="list-style-type: none"> <li>– Sibling relationship</li> </ul>		<ul style="list-style-type: none"> <li>– residential care</li> </ul>			
Robinson, 2000	<ul style="list-style-type: none"> <li>– Internalization attitudes</li> </ul>	<ul style="list-style-type: none"> <li>– Pre-encounter attitudes</li> </ul>				
Tulviste, 2011	<ul style="list-style-type: none"> <li>– Deidealization</li> <li>– Behavioral autonomy</li> <li>– Home reared</li> <li>– Gender (male)</li> </ul>					
Mota & Matos, 2013			<ul style="list-style-type: none"> <li>– Peer attachment</li> <li>– Social skills (assertion, empathy)</li> </ul>			
Costa & Mota, 2012			<ul style="list-style-type: none"> <li>– peer attachment (communication and trust in peer relationships)</li> <li>– Self-esteem</li> </ul>	<ul style="list-style-type: none"> <li>– alienation to peers</li> </ul>		
Zappe & Dell'Aglio, 2016					<ul style="list-style-type: none"> <li>– residential care</li> </ul>	

	Adjustment difficulties to the residential setting		Future expectations/worries about transition		Behavioral and emotional problems	
	Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
Pinchover & Attar-Schwartz, 2014	– positive perceptions of the residential care social climate (less strict, more supportive staff; friendly and less poorly behaved peers; greater general satisfaction with the setting)	– peer victimization				
Sulimani-Aidan & Benbenishty, 2011				– Perceived readiness to independent life – Optimism – staff support		
Bick et al., 2017						– Neglect experiences
Suzuki & Tomoda, 2015					– Secure attachment	– avoidant and ambivalent attachment – low self-esteem – maltreatment (sexual abuse, emotional abuse)
Mota et al., 2015						– company/intimacy in sibling relationships – sibling dominance – family structure (institutionalized)
Abaid et al., 2010						– Having problems with teachers – Feeling rejected by colleagues and friends – One of the parents has to live far away
Segura et al., 2016				–		– thought problems – rule-breaking behavior

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Continued.

	Adjustment difficulties to the residential setting		Future expectations/worries about transition		Behavioral and emotional problems	
	Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
González-García et al., 2017				–		<ul style="list-style-type: none"> <li>– anxious/depresses symptoms</li> <li>– withdrawn/depression</li> <li>– aggressive behavior</li> <li>– attention problems</li> <li>– intellectual disability</li> <li>– suicidal behaviors</li> <li>– sexual abuse</li> <li>– experiences of previous foster care or adoption breakdown</li> <li>– background of mental health disorders in the family</li> </ul>
Burns et al., 2004			–		<ul style="list-style-type: none"> <li>– African-American race</li> <li>– living at home</li> </ul>	<ul style="list-style-type: none"> <li>– sexual abuse</li> <li>– white race</li> <li>– youths placed out of home</li> <li>– parent with severe mental illness</li> </ul>

	Childs` perspective		Parents, child care-workers`perspective	
	Protective factors	Risk factors	Protective factors	Risk factors
Franz, 2004	<ul style="list-style-type: none"> <li>– coping by avoiding</li> </ul>	<ul style="list-style-type: none"> <li>– lower school achievement</li> <li>– higher level of every day stress</li> <li>– coping with stress</li> <li>– avoiding coping strategy</li> <li>– coping by expressing emotions</li> <li>– unfavorable institutional climate (rigid and unpleasant)</li> <li>– Coping by social support</li> </ul>	<ul style="list-style-type: none"> <li>– Rare use of avoidance as a stress coping strategy</li> </ul>	<ul style="list-style-type: none"> <li>– lower school achievements</li> <li>– higher level of every day stress</li> <li>– coping by expressing emotions</li> <li>– Perceived social support</li> <li>– Number of siblings</li> </ul>

	Externalizing symptoms		Internalizing symptoms		Prosocial behavior	
	Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
Aguilar-Vafaie et al., 2011	<ul style="list-style-type: none"> <li>– importance of religion</li> <li>– positive attitude toward school</li> </ul>		<ul style="list-style-type: none"> <li>– caregivers` monitoring at the residential care</li> <li>– risk-poverty</li> <li>– perceived stress</li> </ul>		<ul style="list-style-type: none"> <li>– attitudinal intolerance against deviance</li> <li>– caregivers monitoring at the residential care</li> </ul>	
	Female		Female		Female	
	Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
-	<ul style="list-style-type: none"> <li>– importance of religion</li> <li>– positive attitude toward school</li> </ul>		<ul style="list-style-type: none"> <li>– peer expectations against use of drugs</li> <li>– monitoring by caregivers at the residential care</li> </ul>		<ul style="list-style-type: none"> <li>– attitudinal intolerance against deviance</li> <li>– adolescents` feelings of intimacy and connection with teachers</li> </ul>	
	Male		Male		Male	
	Protective factors	Risk factors	Protective factors	Risk factors	Protective factors	Risk factors
				<ul style="list-style-type: none"> <li>– Perceived stress</li> <li>– Risk-poverty</li> </ul>		

Note. The result of studies is in accordance with the order presentation of the topics in the article.