Functional profiles of school refusal behavior and their relationship with depression, anxiety, and stress

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ABSTRACT

Negative emotional states are common among youth with problematic school absenteeism, but little is known about their presence across different school refusal behavior profiles. The aim of this study was twofold: to identify different cluster solutions across functional profiles of school refusal behavior (I. Avoidance of Negative Affectivity, II. Escape from Social and/or Evaluative Situations, III. Pursuit of Attention, and IV. Pursuit of Tangible Reinforcement) and to determine whether these profiles differ from each other based on dimensions of depression, anxiety, and stress. The sample consisted of 1582 Ecuadorian adolescents aged 12–18 years ($M = 14.83$; $SD = 1.86$) who completed the School Refusal Assessment Scale-Revised (SRAS-R) and the Depression, Anxiety and Stress Scale-21 (DASS-21). Latent class analysis revealed three school refusal profiles: non-school refusal behavior, school refusal behavior by tangible reinforcements, and school refusal behavior by multiple reinforcements. The last group displayed the most maladaptive profile and revealed highest mean scores on the three dimensions of the DASS-21 compared to other groups. To promote mental health in this group it is a necessary goal due to their link with these negative emotional states. Prevention measures to strengthen emotional self-regulation should be considered in these cases.

1. Introduction

School refusal behavior refers to youth who have difficulties attending classes or remaining in school (Kearney, 2001). The heterogeneous nature of this problem has led to multiple and significant efforts across decades to determine the characteristics of this population (Elliot and Place, 2017). Different taxonomic systems have been proposed to facilitate the understanding and classification of different subtypes of children and youth with school attendance problems (Kearney, 2016).

Different perspectives over many decades have been proposed to conceptualize school refusal behavior. Initial classification systems were proposed using demographic data, parental reports, and clinical observations to determine groups (Coolidge et al., 1957; Granell de Aldaz et al., 1987). However, these classification systems were limited by their non-empirical base, lack of inclusion of all cases of school absenteeism, and imprecise evaluation strategies. Empirical systems based on multivariate analyses (Atkinson et al., 1989; Kolvin et al., 1984) and diagnostic models (Bernstein, 1991; Last et al., 1987; Last and Strauss, 1990) were subsequently proposed. These classification systems were based on the numerous forms of clinical symptoms that these youths display and revealed that separation anxiety, phobic, and mood disorders were commonly associated with this population (Bernstein and Garfinkel, 1986; Last and Strauss, 1990). Although these diagnostic systems have been applied in numerous studies, one of their main limitations is that they are commonly restricted to young people who refuse to attend school due to emotional disorders (e.g., anxiety, anxiety, fear, depression), what is known as school refusal. However, difficulty attending school or remaining in classes is a multifaceted problem.

The present study thus investigated school attendance problems understood as via the broader construct of school refusal behavior (Kearney and Albano, 2007). Kearney and Silverman (1990) proposed a functional approach as a classification model for school refusal behavior that covers a greater percentage of youth with school attendance problems. This model proposes four functional conditions that underlie

school refusal behavior: 1) avoidance of school-based stimuli that provoke negative affectivity (e.g. distress, anxiety, depression), (2) escape from aversive social and/or evaluative situations (e.g., tests, peer interactions), (3) pursuit of attention from significant others (e.g., parents), and/or (4) pursuit of tangible reinforcers outside of school (e.g., sleeping, playing video games). The first two factors refer to school refusal behavior based on negative reinforcement or to avoid aversive situations. The latter two factors refer to school refusal behaviour based on positive reinforcement or obtain something positive outside the school (Kearney, 2002a). This functional approach is a classification system commonly utilized to assess school refusal behavior (Díaz-Herrero et al., 2018; Sanmartín et al., 2018).

The School Refusal Assessment Scale-Revised was developed to measure the relative strength of these functional conditions for a particular case (SRAS-R; Kearney, 2002b). The benefits of this system include greater attention to the substantial heterogeneity that characterizes cases with school refusal behavior (not only focused on anxiety-based school refusal), linkage to specific assessment and treatment strategies, and a specific measure for this model, the SRAS-R, with adequate psychometric properties supported in eight different countries (Gonzálvez et al., 2016, 2017, 2018; Haight et al., 2011; Heyne et al., 2016; Kim, 2010; Richards and Hadwin, 2011; Seçer, 2014; Walter et al., 2017).

1.1. Profiles derived from the functional model

Identifying school refusal behavior profiles is important to identify the psychological profile of these students and to delineate targeted assessment, prevention, and intervention efforts. Although previous research has identified profiles of children with severe school attendance problems (Berg et al., 1993; Bools et al., 1990) and truants (Maynard et al., 2012), only one study examined the school refusal behavior profiles based on the functional model (Dube and Orpinas, 2009). This study included 99 American students with school attendance problems aged 8–15 years. The analyses identified three profiles: a multiple school refusal behavior profile (17.2%) that combined explanatory factors characterized by positive and negative reinforcement, a school refusal behavior profile by positive reinforcement (60.6%), which only included factors related to parental attention or tangible rewards, and a non-school refusal behavior profile (22.2%). The authors noted that subsequent research should examine these profiles in other countries and utilize larger samples (Dube and Orpinas, 2009) and more precise statistical analyses such as latent class analysis (Schreiber, 2017). Defining more specific groups may aid in more targeted and efficient interventions (Park et al., 2015).

1.2. School refusal behavior and negative emotional states

Students with school attendance problems appear likely to have emotional difficulties (Havik et al., 2015). Depression and anxiety are considered the most common emotional difficulties for students who do not attend school (Nayak et al., 2018). However, great heterogeneity in diagnoses marks this population (Romani et al., 2017). Kearney and Albano (2004) found, among 143 American youth, that the most common diagnoses across the four functions of school refusal behavior were anxiety-related diagnoses regarding negatively reinforced school refusal behavior, separation anxiety disorder regarding attention-seeking behavior, and oppositional defiant and conduct disorder regarding pursuit of tangible reinforcement outside of school. Dube and Orpinas (2009) found, among their sample of elementary and middle school students with attendance problems, that students with negatively and positively reinforced school refusal behavior obtained higher scores in behavioral difficulties, were more frequently victimized, and experienced more traumatic or stressful events compared with those with positively reinforced school refusal behavior and no profile of school refusal behavior.

These studies, while useful, have largely involved Caucasian samples and generally indicate no major cultural differences among the results. A recent study from multi-ethnic Ecuador reaffirmed the psychometric properties of the SRAS-R in an adolescent sample and confirmed that, school refusal behavior was significantly and positively correlated with different negative emotional states (e.g. anxiety, social anxiety, school anxiety, depression and stress) (Gonzálvez et al., 2018). Due to the small sample size in the studies about identification of school refusal behavior profiles and the little previous research regarding its relationship with emotional variables, however, further research remains needed in larger populations and different countries.

The present study thus sought to address these limitations with two main aims. The first aim was to verify whether there are different school refusal behavior profiles with respect to the four functional conditions established by Kearney and Silverman (1990). The second aim was to examine differences between identified school refusal behavior profiles and their scores on dimensions of depression, anxiety, and stress. The first hypothesis was that a latent class method would generate three school refusal behavior profiles (a multiple school refusal behavior profile, a positive reinforcement school refusal behavior profile, and a non-school refusal behavior profile) according to the results reported by Dube and Orpinas (2009). The second hypothesis was that an identified multiple profile of school refusal behavior would be associated with statistically significant higher scores in depression, anxiety, and stress (Heyne et al., 2016; Dube and Orpinas, 2009; Kearney, 2002b; Kearney and Silverman, 1993, Kearney and Albano, 2004; Walter et al., 2017).

2. Method

2.1. Participants

Ecuadorian adolescents were recruited by random cluster sampling in 11 secondary education centers of Quito. The participation rate was high; only 3.6% of students were excluded due to lack of paternal consent and 2.1% were excluded due to omissions and mistakes in their answers. A normative sample of 1582 participants included 964 males and 618 females aged 12–18 years ($M = 14.83$; $SD = 1.86$). The majority of students came from urban areas (86.4%). Socio-economic distribution it was assessed according to the parent's level of academic qualification corresponding to school graduate (23%), secondary studies (56%) and university studies (17%).

2.2. Measures

School Refusal Assessment Scale-Revised (SRAS-R; Kearney, 2002b). The SRAS-R is a 24-item self-report measure with a 7-point Likert scale that assesses the relative influence of four functional conditions of school refusal behavior (I. Avoidance of stimuli that provoke negative affectivity; II. Escape from aversive social and/or evaluative situations; III. Pursuit of attention from significant others, and IV. Pursuit of tangible reinforcement outside of school). In this study, the Spanish version developed by Gonzálvez et al. (2016), whose levels of reliability range from 0.70 (factor I) to 0.87 (factor III), was used. The coefficients of internal consistency of this measure in this study were 0.74, 0.68, 0.81 and 0.67, respectively, for the four factors of the SRAS-R.

Depression, Anxiety and Stress Scale-21 (DASS-21; Lovibond and Lovibond 1995). The DASS-21 is a self-report questionnaire with 21 items that measure depression, anxiety, and stress on a 4-point rating scale. In this study, the Spanish version provided by Fonseca et al. (2010), whose levels of reliability range from 0.73 (Anxiety) to 0.81 (Stress), was used. The coefficients of internal consistency of this measure in this study were 0.76 (Depression), 0.75 (Anxiety) and 0.75 (Stress).

2.3. Procedure

A letter was sent to the principals of the 11 schools that participated in this study requesting their collaboration and authorization to administer the questionnaires. Written parental informed consent was obtained from all parents or legal custodians of the minors that participated in the study. Prior to the completion of these, the students were informed that their participation was voluntary and they were assured of the confidentiality of the data. The administration of the two questionnaires was carried out collectively, in groups of 15 to 30 students, during school hours. At least one member of the research team was present at all times to resolve problems. All procedures were performed according to the ethical standards of the 1964 Helsinki Declaration. The research study protocol was approved by the ethical committee with the reference number UA-2017-09-05.

2.4. Statistical analyses

To identify the school refusal profiles, a non-hierarchical method quick cluster analysis was conducted based on standardized scores of the four functional conditions from the SRAS-R. This method of conglomerate analysis is considered the most adequate procedure to establish profiles in a large sample of participants (Hair et al., 1998). The school refusal behavior profiles were defined based on high, low, and moderate scores in the SRAS-R factors. Specifically, z scores below or equal -0.50 were considered to have low scores in a certain factor, over or equal to $+0.50$ were considered to have high scores and between -0.49 and $+0.49$ were considered moderate levels (Vicent et al., 2017). Additionally, the cluster solutions were analyzed according to the relationship identified by previous theoretical and empirical studies between the four functional conditions from the SRAS-R.

Second, an analysis of variance was conducted to examine whether DASS-21 scores in depression, anxiety, and stress would differ across identified subgroups. In addition, post hoc tests (Scheffé's method) were performed and an effect size was calculated using the d index, which was analyzed according to Cohen's interpretation (Cohen, 1988), distinguishing between a small $(0.20 \leq d \leq 0.49)$, moderate $(0.50 \leq d \leq 0.79)$, and large magnitude $(d \geq 0.80)$.

3. Results

3.1. School refusal behavior profiles

Three school refusal behavior profiles were identified through the combination of high, low, and moderate z scores on the four functional conditions from the SRAS-R (see Fig. 1). The largest cluster included 709 participants (44.82%) characterized by low scores in school refusal behavior across the four conditions. This group was labeled as a non-school refusal behavior profile (Non-SR). The next largest cluster included 680 participants (42.98%) characterized by high scores on the fourth factor of the SRAS-R and moderate levels for the rest. This group was labeled as a school refusal behavior profile by tangible reinforcements (Tangible-SR). The final cluster included 193 participants (12.20%) with combined high scores for the first three factors of the SRAS-R and moderate levels for the fourth factor. This group was labeled as school refusal behavior by multiple reinforcements (Multiple-SR).

3.2. Intergroups differences in depression, anxiety, and stress

Means and standard deviations for depression, anxiety, and stress by school refusal behavior clusters are in Table 1. Statistically significant differences among school refusal behavior profiles were found on all three variables. The Multiple-SR group obtained the highest means in depression, anxiety, and stress. In contrast, the Non-SR group displayed the lowest means.

Post hoc comparisons revealed that the Multiple-SR group scored significantly higher than the Non-SR group, with a large effect size in all dimensions of the DASS-21 (depression $d = 1.05$; anxiety $d = 1.12$; stress $d = 0.84$). Similarly, the Tangible-SR group scored significantly higher than the Non-SR group but with a small effect size in the three dimensions of the DASS-21 (depression $d = 0.31$; anxiety $d = 0.41$; stress $d = 0.34$). Finally, a comparison of the Multiple-SR and Tangible-SR groups revealed the former to have higher scores, with large magnitude in depression and anxiety ($d = 0.71$ and $d = 0.61$, respectively), but small magnitude in the stress dimension ($d = 0.44$). Table 2

4. Discussion

This study improves upon and extends current knowledge about the existence of different school refusal behavior profiles based on the four-functional model (Kearney and Silverman, 1990), and examined the relationship between the identified subgroups and depression, anxiety, and stress. Previous research has not examined subgroups of school refusal behavior from the four-factor model using a latent profile methodology. Maynard et al. (2012), who employed latent class analysis but with truant youth utilizing multiple indicator variables, contended that this statistical analysis achieves more precise identification and description of distinctive subgroups. However, previous studies have not applied these analyses across combinations of scores in the four-functional model (I. Avoidance of Negative Affectivity, II. Escape from Social and/or Evaluative situations, III. Pursuit Attention and IV. Pursuit Tangible Reinforcement), despite this being one of the most recognized classification systems (Inglés et al., 2015; Sanmartín et al., 2018).

Three school refusal behavior profiles (non-school refusal behavior, tangible reinforcement, and multiple reinforcement) were expected in line with results from Dube and Orpinas (2009), who identified different subgroups of school refusers through the four-functional model but utilized average scores in each of the four factors to distinguish groups. Consistent with our first hypothesis, three-school refusal behavior profiles were identified among Ecuadorian adolescents. The group with the highest number of students (44.82%) included non-school refusal behavior. However, the percentage of students who presented a profile of school refusal behavior due to tangible reinforcements was also considerably high (42.98%). These results could be explained by the fact that higher scores in the fourth factor of the SRAS-R (IV. Pursuit Tangible Reinforcement) are more frequent during adolescence than childhood (García-Fernández et al., 2016). The school refusal behavior profiles from this study mirror to some extent those found by Dube and Orpinas (2009). However, differences regarding the proportion of students belonging to each profile were found. In particular, the largest group of students in the present study (44.8%) were in the non-school refusal behavior group, whereas the largest group of students in the Dube and Orpinas study (2009) (60.6%) were in the positive reinforcement group. This difference could be due to the normative sample of the present study.

Regarding the results for each class, inter-class differences were found for all of the dimensions considered in this study. The multiple reinforcements school refusal behavior profile reported higher scores on all negative emotional states (depression, anxiety, and stress), proving to be the most maladaptive group. In contrast, the non-school refusal behavior profile displayed the lowest scores in the three emotional dimensions, indicating better psychological adjustment. Finally, the school refusal profile by tangible reinforcements emerged as the second most maladaptive profile. These results are consistent with the second hypothesis in which the multiple reinforcements profile was proposed as the most maladaptive group (Dube and Orpinas, 2009). This subgroup was comprised by students with high scores in the first three factors of the SRAS-R (I. Avoidance of Negative Affectivity, II. Escape from Social and/or Evaluative situations, III. Pursuit Attention)
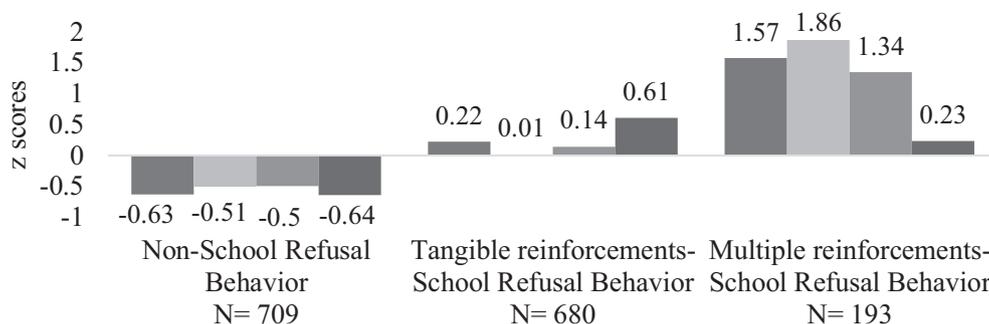
Fig. 1. School refusal profiles in Ecuador.

that combined positive and negative reinforcements. Numerous prior research has noted the relationship between high scores in the first three factors of the SRAS-R and internalizing problems such as anxiety disorders, depression, stressful events, and other social and phobic disorders (Dube and Orpinas, 2009; Heyne et al., 2016; Kearney, 2002b; Kearney and Silverman, 1993, Kearney and Albano, 2004; Walter et al., 2017). In contrast, the positive reinforcement profile, defined in this study by high scores in the fourth factor of the SRAS-R (IV. Pursuit Tangible Reinforcement), has been more associated with externalizing problems such as oppositional disorders and conduct disorder (Heyne et al., 2016; Kearney, 2002b; Kearney and Silverman, 1993; Kearney and Albano, 2004).

Several limitations of the study should be noted. First, evaluation in a larger and more diverse sample is recommended from students in other countries and age ranges. Despite the fact that school refusal behavior can appear at any age and across any socioeconomic level or ethnicity (Kearney and Bates, 2005), other studies have found differences according to age (García-Fernández et al., 2016) and with respect to social or ethnic groups (Balfanz and Byrnes, 2012; Lyon, 2010). Second, school refusal behavior was identified based on a self-report measure. Multi-source (e.g. youth, parents and teachers, school attendance records) and multi-method assessment (e.g. self-reports, interviews, self-registrations) should be considered. Finally, several studies have shown that school refusal behavior is associated with both internalizing and externalizing problems (Higa et al., 2002; Ingul and Nordahl, 2013; Maynard et al., 2012), though the present study examined only internalizing emotional difficulties. Therefore, other psychological variables related to externalizing behavior problems (e.g. oppositional defiant disorder, conduct disorder) should be examined and vis-a-vis the DASS-21 among students with school attendance problems.

Despite these limitations, findings from this study offer novel information using a more sophisticated statistical method and a more

Table 2
Cohen's d value for post hoc contrasts between cluster groups on DASS-21 dimensions.

DASS-21 dimensions	Multiple reinforcements-SRB vs Tangible reinforcements-SRB	Multiple reinforcements-SRB vs Non-SRB	Tangible reinforcements-SRB vs Non-SRB
Depression	.71	1.05	.31
Anxiety	.61	1.12	.41
Stress	.44	.84	.34

Note: SRB = school refusal behavior

nuanced understanding of the characteristics of school refusal behavior in Ecuadorian adolescents. Identifying different profiles of students who refuse school allows psychologists and educational professionals to offer a more targeted response adapted to these characteristics. Prevention and intervention strategies such as the Fortius Program, for psychological strength and prevention of emotional difficulties (Méndez et al., 2013), as well as promoting positive interaction experiences with both parents and friends, can help improve mental health and emotional self-regulation among youth.

Declarations of interest

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Table 1
Means and standard deviations obtained by the three clusters in DASS-21 dimensions.

DASS-21 dimensions	Multiple reinforcements-SRB		Tangible reinforcements-SRB		Non-SRB		Statistical significance		
	M	SD	M	SD	M	SD	$F_{(2,1579)}$	η^2	p
Depression	9.82	4.69	6.72	4.24	5.45	3.99	83.99	.10	< 0.001
Anxiety	8.26	4.61	5.65	4.16	4.09	3.44	91.70	.10	< 0.001
Stress	10.51	4.17	8.54	4.51	7.09	4.02	54.69	.07	< 0.001

Note: SRB = school refusal behavior

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.psychres.2018.08.069.

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