

The influence of the wider context of learning, gender, age, and individual differences on adolescent musicians' performance anxiety

Ioulia Papageorgi

School of Arts and Humanities, Institute of Education, University of London, UK

To date, most research on musical performance anxiety has focused on adult professional musicians, disregarding how anxiety might affect younger performers. As a result, a clear understanding of how it develops in adolescent musicians and which performers are more prone to it has not yet been established. The aim of this study was to explore the influence of the wider cultural context of learning, gender, age, and individual differences on adolescent musicians' experiences of performance anxiety as evidenced through their self reports on a newly-developed self-report questionnaire and the Adolescent Musicians' Performance Anxiety Scale (AMPAS). Participants included 410 young musicians between the ages 12-19 in two geographical locations (UK and Cyprus). Results from statistical analyses suggest that the wider context of learning, gender, age, personal characteristics, and individual differences arising from self-concept, self-efficacy beliefs, susceptibility to situational factors in performance, and parental expectations should be taken into account when assessing performance anxiety in adolescent musicians and within educational settings.

Keywords: performance; anxiety; measurement; prediction; adolescents

A number of studies examining professional and higher education student musicians have indicated that performance anxiety can negatively affect the quality of performance (Fishbein *et al.* 1988, Schulz 1981, Wesner *et al.* 1990). Musical performance anxiety seems to be a critical problem for 15% to 25% of musicians (Steptoe 2001). Musicians of different musical genres seem to have different performance anxiety experiences, with classical musicians appearing to be more anxious compared to musicians of other-than-classical genres (jazz, popular, and Scottish traditional music) (Welch *et al.* 2006). To date, most research has focused on adult professional musicians, disregarding

how anxiety might affect younger performers and how early experiences might affect anxiety in subsequent years. No clear understanding has yet been established of how performance anxiety develops in adolescent musicians, under what conditions and in which performers (Kenny and Osborne 2006).

The aim of this study was to explore the influence of the wider cultural context of learning, gender, age, and individual differences on adolescent musicians' experiences of performance anxiety as evidenced through their responses to a newly-developed self-report questionnaire and the Adolescent Musicians' Performance Anxiety Scale (AMPAS; Papageorgi 2007).

METHOD

Participants

Four hundred and ten students participated in the study. Of these, 51.5% were Cypriot-based and 48.5% were British-based students; 57.8% of the participants were female, and 42.2% were male. Ages of the participants ranged from 12-19 years, with the mean age at 15.33 years. All students were attending junior conservatoires and/or youth orchestras. Instruments that participants played included the piano/keyboard, string, woodwind, brass, and percussion instruments, guitar, voice, bouzouki, and harp.

Materials

A newly-developed self-report questionnaire was used to gather information on a range of learning and performance issues (see Papageorgi 2007). A scale measuring performance anxiety levels was also developed, as no other performance anxiety instrument focusing on adolescent musicians existed in the literature. The Adolescent Musicians' Performance Anxiety Scale (AMPAS; Papageorgi 2007) included twenty items that dealt with maladaptive performance anxiety related issues, such as negative outcome expectancies, negative experiences in performance, evidence of pre-evaluation anxiety, experience of physiological symptoms of anxiety, concern about others' judgment and negative perception of anxiety. The design of the scale followed recognized criteria for the development of psychometric tests (see Papageorgi 2007). Measures of internal consistency after the main data collection were highly satisfactory (Cronbach $\alpha=0.86$).

Procedure

Statistical analyses were carried out on the data obtained from the questionnaire and the AMPAS: (1) a 3-way analysis of variance (ANOVA) was

Table 1. Descriptive statistics on performance anxiety groups.

	Score range	Whole sample (n=410)	Cypriot students (n=211)	British students (n=199)
Highly anxious students	74-100	10.8	15.0	6.3
Moderately anxious students	47-73	69.3	70.0	68.4
Low anxious students	20-46	19.9	15.0	25.3

conducted to evaluate the effects of nationality, gender, and age on students' total score on the AMPAS, (2) a stepwise multiple regression was conducted with musicians' AMPAS score as the dependent variable, and (3) a discriminant function analysis was conducted to determine which variables differentiated between anxiety groups as measured by the AMPAS. For the purposes of the discriminant analysis, students were placed into one of three anxiety groups according to their overall score on the AMPAS (see Table 1).

RESULTS

Influence of the wider context of learning, gender, and age

A 3-way ANOVA was conducted to evaluate the effects of the wider context of learning, gender, and age on students' total score on the AMPAS. The wider context of learning was represented by the location in which students received their music education and developed as musicians and "nationality" was used to denote this. Results indicated a significant main effect for nationality, $F(1,349)=14.44$, $p<0.0001$, partial $\eta^2=0.04$, and gender, $F(1,349)=14.87$, $p<0.0001$, partial $\eta^2=0.04$. Cypriot students had a higher score on the AMPAS (mean=60.06, SD=13.46) compared to British students (mean=54.63, SD=11.17), and female students appeared to be more anxious (mean=59.68, SD=13.18) compared with male students (mean=54.53, SD=11.42). A significant interaction was found between nationality and age group, $F(1,349)=8.45$, $p<0.005$, partial $\eta^2=0.02$. British students were more anxious as they became older: 12-15 years (mean=51.95, SD=10.01), 16-19 years (mean=57.43, SD=11.69). The opposite was the case for Cypriot students: 12-15 years (mean=61.18, SD=14.19), 16-19 years old (mean=58.88, SD=12.61). There was no significant effect for age group or any other significant interactions.

Table 2. Contribution of individual variables in prediction of total score on the AMPAS.

	<i>β</i> weight	<i>t</i> -value
Low perceived level of anxiety	-0.34	-8.63***
Experience of heightened anxiety in the presence of an audience	0.29	6.70***
Positive self-concept in music	-0.13	-3.36**
Sensitivity to degree of self-exposure	0.12	3.18**
Low self-efficacy in music	0.10	2.75**
Effect of environment quality on anxiety levels	0.10	2.80**
Nationality	-0.10	-2.69**
Perfectionism	0.10	2.78**
Perception of critical parents with high expectations	0.09	2.46*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.0001$

The prediction of musical performance anxiety

A stepwise multiple regression was conducted with musicians' AMPAS score as the dependent variable. The regression model was statistically significant, $F(9,338)=59.93$, $p < 0.0001$. The effect size, as calculated by the multiple R , was 0.78, $R^2=0.62$ and adjusted $R^2=0.60$, indicating that the model explained 60% of the variance. Contributions of individual predictors are summarized in Table 2.

Variables differentiating between anxiety groups

Discriminant function analysis was conducted to determine which variables differentiated between the three performance anxiety groups (low, moderately, and highly anxious) as measured by the AMPAS. Two discriminant functions were calculated, with a significant overall Wilk's lambda ($\Lambda=0.52$, $\chi^2(36)=183.22$, $p < 0.0001$). After removing the effects of the first function, the second discriminant function did not reach statistical significance. The first function had an eigenvalue of 0.81 and a canonical correlation of 0.67; η^2 was 0.45, indicating that 45% of the variability of the scores was accounted for by differences among the three groups. Correlations between predictors and discriminant function are shown in Table 3.

DISCUSSION

Findings indicate that the wider context of learning and gender is an important influence on performance anxiety. Age, in itself, did not appear to

Table 3. Correlations between predictor variables and functions.

	<i>Function 1</i>
Low perceived level of anxiety	-0.68*
Experience of heightened anxiety in the presence of an audience	0.64*
Sensitivity to degree of self-exposure	0.46*
Low self-efficacy in music	0.35*
Positive self-concept in music	-0.32*
Perception of receiving positive feedback from teacher	-0.31*
Perfectionism	0.29*
Effect of performance environment quality on anxiety levels	0.28*
Concern about others' responses to playing	0.24*
Entity theory of ability	0.17*
Effort in practice	-0.23
Intrinsic motivation to learn a musical instrument	-0.12
Perception of supportive and encouraging parents	0.06
Perception of being under pressure to continue with music lessons	0.11
Development of musical identity	-0.16
Incremental theory of ability	0.06
Perception of critical parents with high expectations	0.08
Negative perception of anxiety	0.10

* Largest absolute correlation between each variable and any discriminant function.

be a key factor. A significant proportion of the participant musicians (over 10%) experienced considerable levels of maladaptive performance anxiety.

Results from the regression analysis suggested that anxiety level could be predicted by (a) students' self-perceptions, as evidenced by their perceived level of anxiety, self-concept, self-efficacy, and perfectionism, (b) situational parameters such as the influence of audience presence, the degree of self-exposure and the influence of the venue, (c) the wider cultural context of learning, evidenced by nationality, and (d) family environment, evidenced by parental attitudes toward the student.

The discriminant analysis revealed one significant function, which differentiated highly anxious performers from the other musicians and was related to the experience of maladaptive musical performance anxiety. Highly anxious performers acknowledged themselves as being highly anxious. Their anxiety was influenced by situational parameters such as audience presence, high self-exposure, and performance environment quality. They held negative views of themselves and their ability (had negative self concept and low self-

efficacy), perceived the feedback they received negatively, expressed concern over others' responses to their playing, and put less effort into practicing.

Overall, research findings support earlier literature relating to the identification of factors affecting performance anxiety. This research is unique in considering these factors collectively in adolescents and ascribing weightings to each. Findings highlight the importance of understanding how performance anxiety affects individual musicians and of a personal assessment of anxiety susceptibility when planning for performance. Individual characteristics shaping anxiety vulnerability should be taken into account in educational contexts so that we can successfully support musicians as they cope with performance anxiety and maintain wellbeing.

Address for correspondence

Ioulia Papageorgi, Department of Arts and Humanities, Faculty of Culture and Pedagogy, Institute of Education, University of London, 20 Bedford Way, London WC1H 0AL, UK; *Email*: i.papageorgi@ioe.ac.uk

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