

# The factor structure of the revised Kenny Music Performance Anxiety Inventory

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This study assessed the factor structure of the revised Kenny Music Performance Anxiety Inventory (KMPAI) using a sample (n=151) of tertiary music and dance students attending the National Institute of Creative Arts and Industries, University of Auckland. The scale consists of 40 items that assess the factor structure of the revised, expanded KMPAI to ascertain whether it captured the latent etiological factors identified by emotion theory underlying performance anxiety. Students completed the (revised) Kenny Music Performance Anxiety Inventory at the commencement of the 2009 academic year. Principal component analysis (with varimax rotation) of the KMPAI revealed three latent factors and 12 underlying factors, as follows: early relationship context comprising generational transmission of anxiety and parental empathy; psychological vulnerability comprising controllability, depression, hopelessness, and trust; and proximal performance concerns comprising somatic anxiety, pre- and post-performance rumination, self/other scrutiny, performance outcome concerns, memory reliability, and commitment to performance. These results provide initial evidence of the complex structure of music performance anxiety, particularly in its severe form, and indicate that management and treatment of the condition will need to be tailored to the individual's pattern of contributing causal features.

*Keywords:* music performance anxiety; Kenny Music Performance Anxiety Inventory; factor structure; musicians; dancers

Current conceptualizations of music performance anxiety tend to focus on state cognitive and somatic anxiety prior to or during performance and fail to

take account of the etiological complexity of the condition (Kenny and Osborne 2006). Kenny (2004, 2009) developed the Kenny Music Performance Anxiety Inventory (KMPAI) to include the assessment of underlying psychological vulnerabilities according to Barlow's emotion based theory of the etiology of anxiety disorders, as well as pre-performance experiences, as a step in aiding the development of a more comprehensive conceptualization of the condition and to provide a more appropriate focus for comprehensive treatments for performing artists suffering from performance anxiety. The aim of this study was to assess the factor structure of the revised, expanded KMPAI to ascertain whether it captured the latent etiological factors identified by emotion theory (Barlow 2000).

## METHOD

### Participants

The sample comprised music and dance students in all years who were attending the National Institute of Creative Arts and Industries, University of Auckland, in March 2009. The sample comprised 151 students: 109 (72%) music and 42 (28%) dance students. These numbers represented 48% (music) and 79.2% (dance) of the total cohort. There were 54 (36%) males and 97 (64%) females. They ranged in age from 17-50 years, with a mean age of 21.44 years ( $SD=5.9$ ).

### Materials

Students completed the revised Kenny Music Performance Anxiety Inventory (KMPAI, Kenny 2009) as part of a comprehensive survey of at the commencement of the academic year. This is a 40 item version of the earlier inventory (see Table 1).

### Procedure

Ethics approval for the study was granted by the University of Auckland Human Participants Ethics Committee. The study was introduced to students in the first lectures of the semester through brief presentations to class groups by lecturers and researchers. Participation information sheets were distributed to all eligible students and those who were interested were invited to attend classes set aside for the completion of the surveys.

Table 1. Rotated factor structure of the revised 40 item Kenny Music Performance Anxiety Inventory.

<i>Factor</i>	<i>Factor loading</i>
<i>1. Depression/hopelessness (psychological vulnerability)</i>	
I often feel that I am not worth much as a person	0.665
Sometimes I feel depressed without knowing why	0.646
I often feel that I have nothing to look forward to	0.602
I often feel that life has not much to offer me	0.542
I often find it difficult to work up the energy to do things	0.474
Sometimes I feel anxious for no particular reason	0.460
I worry that one bad performance may ruin my career	0.426
I am often concerned about a negative reaction from the audience	0.335
I find it easy to trust others (-)*	0.332
<i>2. Worry/dread (negative cognitions)</i>	
Thinking about the evaluation I may get interferes with my performance	0.630
During a performance I find myself thinking about whether I'll get through it	0.613
I often prepare for a concert with a sense of dread and impending disaster	0.600
Even in the most stressful performance situations, I am confident that I will perform well (-)*	0.586
My worry and nervousness about my performance interferes with my focus and concentration	0.540
Even if I work hard in preparation for a performance, I am likely to make mistakes	0.417
<i>3. Proximal somatic anxiety</i>	
Prior to, or during a performance, I experience increased heart rate like pounding in my chest.	0.761
Prior to, or during a performance, I experience shaking or trembling or tremor	0.609
Prior to, or during a performance, I feel sick or faint or have a churning in my stomach	0.582
Prior to, or during a performance, I get feelings akin to panic	0.573
Prior to, or during a performance, I have increased muscle tension	0.425
Prior to, or during a performance, I experience dry mouth	0.411
I remain committed to performing even though it terrifies me	0.399

Note. (-)\* indicates reverse scored items.

Table 1 (cont.)

<i>Factor</i>	<i>Factor loading</i>
<i>4. Parental empathy</i>	
My parents were mostly responsive to my needs (-)*	0.836
My parents always listened to me (-)*	0.704
My parents encouraged me to try new things (-)*	0.660
<i>5. Memory</i>	
When performing without music, my memory is reliable (-)*	0.901
I am confident playing from memory (-)*	0.802
<i>6. Pre- and post-performance rumination</i>	
After the performance, I replay it in my mind over and over	0.619
I worry so much before a performance, I cannot sleep	0.524
<i>7. Generational transmission of anxiety</i>	
One or both of my parents were overly anxious	0.638
Excessive worrying is a characteristic of my family	0.624
As a child, I often felt sad	0.431
<i>8. Self/other scrutiny</i>	
I am concerned about my own judgment of how well I will perform	0.638
After the performance, I worry about whether I played well enough	0.413
I am concerned about being scrutinized by others	0.323
<i>9. Controllability</i>	
I generally feel in control of my life (-)*	0.609
I never know before a concert whether I will perform well	0.478
<i>10. Opportunity cost</i>	
I give up worthwhile performance opportunities due to anxiety	0.534
<i>11. Trust</i>	
I find it difficult to depend on others	0.641
<i>12. Pervasive anxiety</i>	
From early in my music studies, I remember being anxious about performing	0.515

## RESULTS

Principal axis factoring (with varimax rotation) of the KMPAI revealed 12 underlying factors, which can be subsumed under the following categories (number in parentheses indicates subscale number as indicated in Table 1):

- Early relationship context: (7) Generational transmission of anxiety, (4) Parental empathy
- Psychological vulnerability: (1) Depression/hopelessness, (9) Controllability, (11) Trust, (12) Pervasive performance anxiety
- Proximal performance concerns: (3) Proximal somatic anxiety, (2) Worry/dread (negative cognitions), (6) Pre- and post-performance rumination, (8) Self/other scrutiny, (10) Opportunity cost, (5) Memory reliability

## DISCUSSION

These results provide initial evidence of a complex structure for music performance anxiety, particularly in its severe form, that is consistent with the emotion based theory of the anxiety disorders. These data indicate that management and treatment of music performance anxiety will need to take account of multiple factors in its etiology and maintenance, with a broader focus than proximal performance concerns. Results of this study will need to be replicated on other samples and tested on professional musicians to cross-validate the factor structure of the revised KMPAI beyond student populations.

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