

**Sing out loud, sing out long – A profile of professional
contemporary gig singers in the Australian context**

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Abstract

Globally and nationally, the vast majority of professional singers work in the contemporary commercial music industry, yet little is known about them as a population. This research project sought to create an accurate profile of professional contemporary gig singers (PCGS) as a population in the Australian context by giving voice to the lived-experience of PCGS. Using a mixed-methods model, the study collected data from 102 PCGS who met the criteria for inclusion by performing, “6 or more hours per week” calculated as an annual average. The participants provided information about current and past career characteristics including: singing training and performance styles, performance environments, on the gig and after the gig behaviours, voice problems and symptomology, and beliefs about factors which affected their vocal health. They did this by completing a survey questionnaire and their responses to the closed and open question format were analysed using quantitative and qualitative methods.

This research led to a number of outcomes. It provides the first profile of the professional attributes and experiences of a representative group of Australian PCGS. Importantly, the knowledge gained from the self-reports of the 102 PCGS participants in this study highlights the complexities of their performance working lives and challenges the widely asserted view in the literature that there is an ‘inevitability of vocal damage’ resulting from the performance of contemporary music styles. In so doing, it provides an important context for the development of an effective and appropriate pedagogy for PCGS and all singers of Contemporary Commercial Music styles.

Statement of Originality

This work has not been submitted previously for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Irene BARTLETT

Date

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1 Introduction

Since the 1930s, rapid advances in the development of audio-visual technology and the proliferation of electronic media have enabled world audiences to listen to, watch and read about the phenomenon that is “popular” music. Today, more than at any time in the past recordings of the singing voice dominate the commercial music industry and “stars” create, or are created by an ever-evolving range of music styles. The majority of these “stars” do not sing classical repertoire; they belong to the field of contemporary commercial music (LoVetri, 2002) encompassing a wide range of non-classical vocal styles including pop, rock, country, R&B, dance, rap, jazz, musical theatre and numerous associated sub-styles.

The exponents of contemporary commercial music (hereafter referred to as CCM) industry create a market for their music through the development of specific stage personae where their vocal individuality and style innovation often determine their career success and longevity. These singers have high public profile, high marketability and public appeal and earn many millions of dollars collectively yearly through concert performances, recordings, public appearances and product endorsements. They are highly regarded by their public, and much is known about their lifestyles from media reports; yet very little empirical information exists about them as professional voice users.

Along with the phenomenal success of contemporary commercial recorded music, the commercial live music industry has also flourished. This area of the industry is populated generally by professional contemporary gig singers (hereafter referred to as PCGS); these are singers who earn their income through regular performances of CCM styles in local, national and sometimes international contexts, either emulating the ‘star’ recording artists as singers in covers bands, or performing their original music in various band combinations in a range of “live music”, commercial venues (pubs, clubs, hotels etc.). In spite of their significant

number and high public visibility, PCGS have been overlooked or excluded from pedagogical studies by researchers and their distinct pedagogical needs have been disregarded by those pedagogues who dominate the singing voice literature (Lobdell, 2006; Williams, 2003). In undertaking this study, I intend to document this inequity and to provide a data-informed account of PCGS that may help to correct the imbalance.

With the exception of some ethnographic reports (Fiske, 1989; Shuker, 2001), researchers have not afforded singers of CCM the same attention as their classical music counterparts. Much has been written about professional singers of classical styles, yet published research on the group of singers most commonly heard by the general public (PCGS who sing non-classical styles) is sparse and under-theorised (I. Bartlett, 2010; Phyland, Oates, & Greenwood, 1999; Thalen & Sundberg, 2001; Wilson, 2003). Despite this lacuna in extant knowledge, commentators across a range of voice professions (voice teachers, speech pathologists and otolaryngologists) have expressed the opinion that CCM singing styles are inherently damaging for the voice (for example, Batza, 1971; Miller, 2004; Osborne, 1979a, 1979b; Ruhl, 1986; The American Academy of Teachers of Singing, 1986). In the absence of data to support it, this documented opinion is contentious rather than compelling in its authority. It may reflect an aesthetic bias against the produced vocal tone, registration and sound qualities of CCM singing, which in turn may be a reflection of the commentators' classical backgrounds. Without an appreciation for differences in genre these commentators may have measured CCM vocal production against traditional classical singing standards. Evidence of such bias will be presented in a review of literature in Chapter 2.

1.1.1 The etic/emic dilemma

This is the first study to report on PCGS in Australia as a discrete population from either an etic or emic perspective. The two terms originated in the field of linguistics (Pike, 1990) and are derived from the linguistic terms ‘phonemic’ and phonetic respectively. Anthropologists apply these linguistic terms to processes of observation of cultural meaning and behaviour. From an anthropological perspective, an emic or “insider” account comes from a person within the culture; an etic account comes from an “outsider” or observer from outside the culture (Goodenough, 1980; Harris, 1976). These perspectives are qualitatively different with respect to the locus of connections; that is - why and how something is done by a group, what is said about a group and by whom be it the experiencer or the commentator.

PCGS rely on their voices as a means of artistic expression and income. I claim insider knowledge through my extensive experience as a performer and teacher of non-classical styles. This experience has provided me with an emic insight into the field through personal involvement in, and a continuing observation of my fellow performers in the CCM industry (a detailed description of my experience follows later in this chapter). Additionally, my extensive career as a voice teacher has brought me into contact with many PCGS who have sought my assistance as a teacher in the development, maintenance and technical extension of their voices in the practice of their chosen CCM singing styles.

To date, few studies of singers have incorporated CCM singers into their participant samples. When CCM singers have had some small representation, the researchers have been “outsiders” and reports have featured either laboratory-based testing of small participant samples, or investigation of symptomology from patients seeking treatment in voice clinics. For the most part, this etic reporting lacks consideration of the “real world” performance contexts and environmental conditions of PCGS’ worklife. Further, the focus on laboratory

testing and clinical observations might account for the paucity of research concerning PCGS as an occupational group. Because of my position as both singer and empathetic observer of colleague PCGS, I am able to present an insider's view of PCGS as a population.

1.1.2 Legitimizing contemporary commercial music

Recently, some authors have challenged the proposition of inevitable association between contemporary singing styles and voice damage. For example, Jeanette LoVetri, a prominent U.S. based singing teacher and researcher, has written widely on the need for a developed pedagogy for singers of non-classical styles, one that recognises the differences of vocal production and technique. To focus this need and to delineate the genres (classical music from the non-classical), she proposed “contemporary commercial music” (LoVetri, 2002) as a generic term to describe the range of non-classical music styles. In a later article (LoVetri, 2008), she outlined her intended use of the term:

Contemporary Commercial Music (CCM) is the new term for what we used to call nonclassical music. This is a generic term created to cover everything including music theater, pop, rock, gospel, R&B, soul, hip hop, rap, country, folk, experimental music, and all other styles that are not considered classical. (p. 260)

CCM has been accepted as a descriptive terminology in the literature of the voice field and has been useful in focusing discussion and research into aspects of vocal technique and vocal health specific to singers of commercial styles (Edwin, 2003; Gilman, Merati, Klein, Hapner, & Johns, 2009).

For purposes of this study, “CCM” (Contemporary Commercial Music) is used to describe my participants' music styles, while the key contextual descriptor, “PCGS” (Professional Contemporary Gig Singers), is used to identify the singers themselves. I have added professional to LoVetri's (LoVetri, 2008, p. 260) definition while using gig instead of

the term commercial believing the combination better describes the career-orientation and type of performance common to the target population of singers.

1.1.3 Defining the status of a singer as professional

Macquarie Dictionary (Professional, 2010) defines the term ‘professional’ as “following an occupation as a means of livelihood or for gain: [as in] *a professional actor*” and, “someone who makes a business of an occupation etc., especially of an art or sport, in which amateurs engage for amusement or recreation”. Moore and Thompson (2001) in the The Australian Pocket Oxford Dictionary describe ‘professional’ as, “engaged in a specified activity as one’s main paid occupation (opp. AMATEUR)”; while Soanes and Stevenson (2009) in The Concise Oxford English Dictionary explain it as, “Of a person or persons: that engages in a specified occupation or activity for money or as a means of earning a living, rather than as a pastime. Contrasted with amateur”. Phyland (1998) found variations in the literature where some authors (e.g. Flach, 1992) used the label when referring to a single genre of singing, excluding all but classically-trained singers in their definition of “professional”, while others (M. C. L. Greene & Mathieson, 1989; Lacina, 1982) applied the metric of intensity and length of training, and proficiency of singing technique. Teachey, Kahane and Beckford (1991) included yearly income earned from performance regardless of style of singing. More commonly, the professional status of a singer has been measured by the length of time spent in performance and the performer’s reliance on voice for occupational purposes (Sataloff, 1984, 1991). I believe that Sataloff’s description captures the essence of the dictionary meanings as well as other usages and I have applied it as the basis for the descriptor “professional” in this study.

1.1.4 Defining the “gig” singer

The PCGS participants in my research were paid to deliver singing performance in response to audience demand. These performance situations are termed colloquially as “gigs”. Early examples of this usage may be seen in *A Jazz Lexicon: An A-Z Directory of Jazz Terms* (Gold, 1964) and *Webster’s Dictionary* (1988). A more recent reference is provided in the fourth edition of *The Australian Pocket Oxford Dictionary* (2001) where “gig” is described as usually an engagement “for one night”. *The Macquarie Dictionary* (Gig, 2003) elaborates: “1. a booking for a musician or comedian, etc. to perform at a venue. 2. the performance itself. 3. any job or occupation – verb (gigged, gigging). 4. to perform a gig [origin unknown]”.

‘Gig’ has become a descriptive term commonly used in the everyday language of CCM musicians globally. Until the advent of digital backing tracks, the term ‘gig singer’ was commonly used to describe a singer who worked within a ‘band’ environment, that is, as one of a collective group of musicians. This traditional model continues, but pre-recorded backing tracks have allowed CCM singers to work independently of supporting instrumentalists, so that “gig” is used now to also describe any paid performance in a commercial venue whether the singer is “one out” (a solo performer playing an instrument and singing, or a singer performing with backing tracks only), or a band singer accompanied by a full rhythm section (piano or keyboard, electric or acoustic bass, electric or acoustic drums, and possibly guitar). Interestingly, the term “gig” has become so widely used that it has been assimilated into the language of performers generally to describe any type of commercial engagement, regardless of art form.

Because of this colloquial application, it is uncertain whether all users of the language have a clear understanding of what being a professional, contemporary gig singer (PCGS)

means. In this dissertation, professional contemporary gig singer is used to describe a particular type of performer - a solo performer or band singer (lead or back-up) and/or session singer (e.g., singer employed for advertising jingles, back-up singer on a recording) who sings across a range of CCM styles within a wide range of commercial performance environments (such as a club, pub, restaurant, function room or recording studio).

Live commercial music venues are the major employers of gig singers and these venues use media advertising to reach their target audience. For example, a search of the *Australian Gig Guide* (H. W. W. Private Limited, 2009) for three weeks in September 2009 (7th to the 30th) revealed more than 2000 listings for CCM music in commercial venues across Australia. In the State of Queensland alone there were 615 individual entries over the three-week period. These Queensland-based gigs ranged from one band per venue in pubs and clubs, to major festivals that had multiple-band programmes (from 10-21 bands listed). Although most advertisements feature the name of the band, some listings advertise also the names of featured singers. My insider knowledge can confirm that in nearly all cases, each band would feature a “lead” singer and in the case of pop, rock, dance/funk, R&B and country gigs, it is not unusual for the instrumentalists to perform as back-up (or harmony) singers for the lead vocalist.

Jazz-style gigs (60 listed) may differ in terms of the CCM singer dominated band line-up. Many jazz bands (small combo to big band) do feature singers but wholly instrumental groups are still common. The listings for jazz gigs in the *Australian Gig Guide for September 2009* (H. W. W. Private Limited, 2009) did not detail whether the performance was wholly instrumental or inclusive of a singer.

This snapshot of the frequency and range of PCGS’ gig work supports my contention that these CCM singers comprise a significant group within the population of professional

voice users. This contention is important, because it underscores the problem of neglect evidenced by the lacuna in the singing voice literature especially in relation to PCGS' vocal health care. Sataloff (1991) spoke to a range of factors that may influence a singer's career success:

Although a singer's voice is his or her most important commodity, other factors distinguish the few successful artists from the multitude of less successful singers with equally good voices. These include musicianship, reliability, and "professionalism". Cancelling a concert at the last minute may seriously damage a performer's reputation. Reliability is especially critical early in a singer's career. (p. 6)

While focused on the "concert" performer, Sataloff's observation is equally relevant for PCGS where the same performance and contractual reliability is important for career development. Vocal health is paramount to performance reliability and the singer's vocal health is dependent on a robust vocal instrument, which in turn is greatly aided by development of an efficient and appropriate technique. Although vocal health management strategies are well documented and widely acknowledged for classically trained professional singers, this is not the case for PCGS. Their vocal health needs remain under-documented and under-researched especially with reference to style and environmental factors specific to this population of singers.

1.1.5 The historical resistance to contemporary commercial singing styles

Some early examples of the prevailing negativity of commentators to contemporary commercial vocal music can be found in the discourse on musical theatre. In the 1940's, belted singing, as performed by respected musical theatre artist Ethel Merman, gained wide public interest and popularity. Prior to the Merman phenomenon, belted singing (a loud, bright, speech dominant singing style) had been primarily the domain of Black American jazz and blues singers such as Bessie Smith, Ma Rainey and Louis Armstrong. Because of the social constructs of the time, belted singing was dismissed as an inferior or uneducated form

of vocal production. This negative view was reflected in the literature (see for example, Osborne, 1979a, 1979b; Ruhl, 1986) where some writers promoted an opinion of the popular music styles of the era as dangerous for the “uneducated” singer. Such reports of popular and Broadway singing styles appear to have been coloured by aesthetic bias and suggest that normative concepts of “correct” vocal production taken directly from the classical tradition were the basis for the critical commentaries. The application of classical pedagogy to a systematic, objective study of CCM styles is contentious (I. Bartlett & Bartlett, 2002; Lebon, 1986; McCoy, 2004; The American Academy of Teachers of Singing, 2008). Any positive development of CCM vocal pedagogy is more likely to be focused on the experienced phenomena where commentators have an “insider” view, that is, where they have experience in and an emic understanding of the specific issues and challenges faced by performers within that style group. Such an understanding is evident in much of the literature for classical style singing. However, it is not currently available for singers of CCM styles.

Writing in the field of vocal pedagogy is quite centralized with the most prominent texts emanating from the U.S. (for example, Benninger, Jacobson, Jacobson, Johnson, & Johnson, 1994; Melton, 2007; Miller, 2004; Radionoff, 2006). U.K. based pedagogue Chapman (2006) is the exception. All are classically oriented pedagogues who exert great influence on the singing voice community. The knowledge that they bring to the field is invaluable, however their opinion of style production and the vocal health implications that they promote regarding CCM typically has been focused by the classical tradition. In the absence of alternative commentary from authors with an insider knowledge and conceptualization of the CCM field, I suspect that, singing teachers have been influenced by views which promote a general disregard for CCM styles based on aesthetic bias and a fear of vocal damage as a likely outcome for singers of CCM styles. In his regular column in *The Journal of Singing*, Robert Edwin from 1982-2011 has continued to reflect on this aesthetic

divide and in one early report he expressed a suspicion that traditional singing teachers in the U.S. were reluctant to assist singers of pop and rock styles: “Whatever the reasoning, I suspect that a majority of NATS [National Association of Teachers of Singing] members have a closed-door policy with regard to pop and rock vocalists” (Edwin, 1985, p. 60). This “closed door” pedagogical attitude towards mainstream contemporary commercial styles has had a tangible impact on training opportunities for singers and has hindered the development of a specific pedagogy for the CCM field.

In advocating the proposition that the western classical tradition offers the only legitimate and healthy vocal technique for singers, singing voice pedagogues have failed to recognize the inherent style differences of classical and non-classical vocal music. This is problematic for PCGS who need to develop reliable technique but who have difficulty in finding relevance in traditional classical singing methods (I. Bartlett, 2010; Sullivan, 1989). Edwin (2000) has suggested that teachers of singing have been reluctant to move away from their traditional ideas of registration, tone and voice quality and have either excluded singers of non-classical styles from their studios or given them a technique that is inappropriate when applied to CCM styles. Anecdotally, I can report that many singers of non-classical styles have rejected voice training that might make them sound, “trained” (i.e., to sing with developed vibrato, legato line and consistent tone). Typically, they perceive traditional classical techniques as lacking relevance to their contemporary commercial performance styles as they strive for a necessary individuality in tone and voice quality (I. Bartlett, 2010).

1.1.6 The relevance of singing teachers’ backgrounds

LoVetri & Weekly (2003) established a strong probability that many of those who are teaching CCM styles are either self-taught performers with no training, or if they have training, this training is in classical style. In seeking to establish who was teaching what in

non-classical vocal music they conducted a survey-based investigation of 139 teachers of singing “from colleges, universities, conservatories, and private studios, both nationally [U.S.A] and in several foreign countries” (LoVetri & Weekly, 2003, p. 207). The researchers defined CCM as any kind of music that was not classical, inclusive of the following styles: Cabaret, Country, Experimental, Folk, Gospel, Jazz, Musical Theater (MT), Rock, and R&B (Rhythm and Blues). In discussing the results of their survey they identified two elements of concern. First, there were no schools in the U.S. offering specific CCM pedagogy courses or degree programmes and second, they found that the teachers who claimed to teach CCM styles formed four discreet categories:

- those with both formal training [style not specified] and CCM performance experience,
- those with CCM performance experience only (no formal training),
- those with formal training only [style not specified] and no CCM performance experience, and
- those with neither performance experience nor formal training.

(LoVetri & Weekly, 2003, p. 209)

No specific statistics were given for the first three categories, however the researchers did make an important observation on the fourth category: “The most interesting data of this research are that there are a significant number (19%) of people teaching CCM/MT who have no professional experience and no training at all related to it” (p. 214). Commenting on the limitations of their study they raised the issue of validity in respondents’ claims regarding training backgrounds and experience levels:

Due to the design of the survey, someone who had taken one seminar of only a few hours duration, or attended one master class, was still in the category designated "trained." The category regarding experience qualified the respondents a little more by asking what type of CCM experience they had, professional or nonprofessional, but it did not ask

where it took place. Again, someone with only a minimum of experience in a relatively unknown venue might still be designated "experienced." Many of the respondents have obtained training through various types of informal adult education. The methods included attending master classes, workshops, and seminars of lengths varying from a few hours to several days (some seminars are sponsored by accredited universities; others are not). Some of the respondents have taken classes from private individuals offering certification in a specific methodology of CCM, and some have talked to colleagues. Some have experimented with their own singing and with the voices of their students. Some have done all of these.

(LoVetri & Weekly, 2003, p. 213)

This study is useful as a first step in revealing the backgrounds of those who by their self-report, claim to teach contemporary commercial styles. However, as the authors state, the reliability of the terms "trained" and "experienced" as accurate descriptors is tenuous, given the broad categorization and the lack of qualifying questions in the research questionnaire. LoVetri and Weekly (2003) found that a substantial percentage of those teaching music theatre styles thought the music itself was the biggest difference between classical music and CCM "although there is ample scientific evidence that the biggest difference is technical (i.e. vocal production)" (p. 214). The second part of this survey was focused on those teachers in the sample who taught music theatre styles. As with the CCM teachers, this group had neither professional experience, nor formal education in teaching that style. Additionally, many of the respondents indicated that they were "conflicted" about the two disciplines (classical and CCM). The researchers suggested that this conflict might have been a result of a variety of opinions presented at various workshops and seminars by a range of experts who do not agree on basic vocal functions for CCM (p. 214). Chapter 2 of this dissertation will report further on the "variety of opinions" as reflected in the reports in the literature of the field.

1.1.7 The current status of research

Although music theatre styles have received growing attention from researchers and pedagogues, the many other CCM styles have not. Most often, the wide range of styles within the dynamic CCM genre are conflated and generalized, and the diverse nature of the music

and the singers who work within it generally continue to be overlooked by researchers. For example, singers of mainstream CCM styles (for example, rock and its sub-sets) have been largely excluded (Phyland, 1998) or mentioned only in a passing fashion by researchers in the field (Bjorkner, Sundberg, Cleveland, & Stone, 2006). However, a positive advance for CCM singers has come by way of a softening of the seeming aesthetic resistance to non-classical style. Some writers in the field of voice science (Benninger, et al., 1994; Miles & Hollien, 1990; Sataloff, 1997; Schutte & Miller, 1993; Sundberg, Gramming, & Lovetri, 1993) and vocal pedagogy (Edwin, 2000; LoVetri, 2002, 2008; LoVetri & Weekly, 2003; The American Academy of Teachers of Singing, 2008) have recognised the emergence of CCM as a legitimate area of study. Although for the most part this remains an etic view of the field, these writers are considerate of the valid characteristics of style and vocal production that exist for PCGS. This shift in pedagogical perspective will be reported further in Chapter 2.

1.2 Background to this study

The lack of published research relevant to PCGS and the often evident aesthetic bias in much existing literature caused me to ponder on my own performance experience of 42 years in the contemporary commercial music industry. Throughout this lengthy career, I have met other PCGS of both genders, who enjoy long careers singing the range of styles that have been consistently reported in the literature as inevitably damaging to vocal health. I continue to meet and speak with them about our work. I decided to use my insider position to gather solid data on PCGS in Australia, allowing PCGS to define their work-life environments, their performance practice, and their general lifestyles, through both statistical description and through self-reported, opinion-based responses to a detailed survey.

1.2.1 My practice

I began singing professionally at age 16 years through bi-weekly appearances on commercial teenage TV shows. These were recorded live, played by delayed telecast, and featured Australian rock and pop stars of the day. The publicity from my regular T.V. appearances quickly led to bookings for “live” performances at teenage discos and commercial clubs. With the changing music eras, I “fronted” rock bands, toured the Queensland/New South Wales country/pop circuit and appeared for up to five shows a week as a freelance singer in Cabaret venues. This regime changed over time where my performance work became focused on corporate performances (for example at conventions and conferences) predominantly as lead singer in small combo and big band contexts, in addition to residencies at leading restaurants and occasional concert performances. I currently gig twice per week on average across a range of performance activities from concert and corporate events to small audience engagements. My main repertoire focus is now jazz-based, but the client expectation is that I am able sing all styles from the 1920’s through to the popular CCM styles of today (music theatre to rock, pop, country, disco and R&B). Through this enduring and varied professional career of over 45 years, I can claim a truly emic perspective of the ever changing and itinerate nature of the contemporary commercial music industry, and a first hand experience of the heavy voice demands of CCM styles.

Throughout my singing and teaching careers I have maintained a healthy and robust speaking and singing voice while also experiencing a significant increase in vocal range and stamina. For example, before the age of 40, I sang in contralto and contemporary alto (C3-B4) ranges exclusively. Since this time, I have been able to develop an additional upper register octave, which has enabled me to perform “legit” styles (modified classical technique with a speech quality), in addition to my established belt-mix and belt repertoire (mostly straight tone, speech dominant singing voice production). I attribute gains in useable vocal

range and my vocal strength and longevity to both an informal and formal education in anatomy and physiology of the voice and to the constant engagement and conditioning of the laryngeal and exhalation support muscles through my teaching and performance practice. Interestingly, my continuing vocal health and reliable vocal production ‘flies in the face’ of a commonly held view that CCM styles cannot be sustained throughout a performance career and that voices necessarily deteriorate with age, particularly if non-classical singing styles are employed. This view is not supported by grounded research but appears to stem from small-sample, laboratory-based research, studies of treatment-seeking singers, or from opinion-based anecdotal reports from outside the CCM field.

1.2.2 My pedagogy

In addition to my work as a PCGS, I have also worked as a singing teacher for the past 30 years. My teaching began at a performance school where I taught individual lessons and seven class groups per week. Each was a class of 10-25 children ranging in age from 3-18 years. For the past 13 years as a lecturer in Jazz and Contemporary Voice and Vocal Pedagogy at university level, I have investigated the causes, rather than the symptoms of those PCGS seeking my help with vocal difficulties. This led me to work collaboratively with a number of speech pathologists and an associated group of medical colleagues (otolaryngologists). They were seeking the assistance of an experienced voice teacher who was also a practicing PCGS with a real-world experience of specific, contemporary-style performance environments. Previously, they had collaborated with classically trained voice teachers who had no personal experience of the venues and performance environments typically frequented by their PCGS clients. These traditionally-trained teachers lacked a kinesthetic experience of the specific performance and style demands that are basic to PCGS’ work, particularly concerning the body and laryngeal stresses brought about by singing for many hours (3-5 hours is usual for a gig performance) over amplified instruments in a

background of continuous white noise (i.e. general conversation and communication between patrons and staff) and food and drink preparation. My speech pathologist colleagues reported to me that remediation strategies constructed by classical singing teachers often failed when applied to PCGS who were unable to find relevance for classical style-based exercises and classical technique (legato line, vibrato or a consistent tone) in their contemporary commercial gig performances. Well-meaning advice to change performance style or to avoid singing supposedly “damaging” styles had proven as unacceptable to PCGS with established careers as it was for young singers trying to break into the highly competitive CCM industry.

1.3 Purpose of the study

This convergence of personal experience and pedagogical factors led me to this current research. The clinical and functional interventions of voice specialists and singing teachers need to be informed by robust research which describes the demands of style, gig environment and vocal health issues common to performers within the PCGS population. Rather than rely on the assumptions of writers outside the field or on my own experiential beliefs alone, I sought information from PCGS through a self-report questionnaire. I intended that analysis of data collected from their responses would add to the research literature of singing voice generally and to that of CCM singers specifically through the inclusion of ‘lived experience’ (Giorgi, 1985) of PCGS as a group. Further, it was my hope that this information would inform the ongoing debate about the necessity for a developed pedagogy for singers of CCM styles, and would assist voice teachers and other interested voice specialists in the management of PCGS voice function through an understanding of the specific occupational and career challenges of the CCM, non-classical genre.

1.4 Statement of the problem

In developing my research objectives I have been mindful of the singers who earn their living through their style-based vocal production and artistry, whose welfare and positive growth are affected by the existence, nature and outcomes of research. The heavy focus of the literature of voice on the pedagogy and practice of classical singing, where much has been written about the preparation and management of the classically-trained voice (Lobdell, 2006; Miles & Hollien, 1990; Thalen & Sundberg, 2001), is in marked contrast to the attention given to singers of non-classical styles by those researchers and theorists who bring research forward into practice, specifically with regards to voice care, treatment and training. As Bjorkner et al (2006) observed, “Vocal music is a large artistic field where musical theatre (MT), pop, rock, soul, folk music, and jazz occupy an important portion” (p. 188). Yet, despite such observations and the high national and international profile of CCM singers within the music industry and in the public domain, the literature lacks any published data that profiles them as a group in a detailed way. This paucity of robust research in the field of CCM singing led me to consider a number of questions concerning PCGS as a population. These considerations focused on issues such as singing training, singing style and venue environments, gig behaviors, involvement in work other than performance, voice problems and their effect on performance, preventative voice care, and general health issues. Over time these issues came together to form a central question: *How might professional contemporary gig singers be accurately described in terms of professionally-relevant life-style and performance practice?*

1.5 Overview of the dissertation

My aim throughout this research has been twofold. First, I recognized a need to create an accurate profile of professional contemporary gig singers as a group, detailing:

- age and gender
- voice training and performance backgrounds
- commonly experienced vocal health issues

And second, to record and highlight participants' beliefs and concerns on issues affecting their performance work-lives with regards to:

- the impact of singing style and associated performance venues
- the impact of gig performance related speaking voice use
- the impact of non-performance related speaking voice use,
- the incidence of voice symptoms for the group
- the effects, if any, of problematic symptoms on their vocal performance.

The central research objective of this study is to present a detailed profile of the professional contemporary gig singer in the Australian context, with particular regard to issues of training and experience, vocal health and professional longevity, and professional attitudes. Such a profile will permit a range of more specific research issues to be discussed including the following: the relevance of PCGS training background to performance longevity, the range of styles performed by PCGS and implications for their vocal health, PCGS venue and performance environments, the impact of other employment on their voice load, PCGS common voice symptoms, PCGS management of voice problems and the age range and gender distribution for the PCGS population. These research issues formed the basis for the questions presented as the survey (see Chapter 3).

I anticipate that the results of this research may have an impact on the development of future pedagogical practice and may help to inform voice specialists in their management of individual PCGS who seek assistance for voice issues.

In Chapter 2, I present and review literature from the vocal music field to indicate where and how it informs, or purports to inform, what we know of singing voice and performance issues for professional contemporary gig singers. This review has indicated a significant gap in the available information about singers of CCM styles generally, and of PCGS specifically.

In Chapter 3, I describe the methods used to gather data from the study's participants (n=102 PCGS), a sample larger than any existing in the literature and the largest that I was able to gather in Australia against the criteria outlined (see Chapter 3). The chapter also explains the procedure used and methods of analysis applied to the collected data.

Results of the analyses are presented in two chapters. The first, Chapter 4, presents data from the quantitative analyses of Questions 1-17 of the survey instrument. These questions are concerned with the demographic data that relate to: performance histories and training, performance styles (current and past), gig venues and gig behaviours, knowledge and employment of amplification, rehearsals and other work. Data collected from participants' responses to Questions 1-17 of the survey pertain to research questions 1-4, i.e., the relevance of PCGS training background to performance longevity, the range of singing styles and any impact on PCGS vocal health, performance environment conditions and PCGS involvement in other employment

Chapter 5 presents further analysis of the data using a mixed model approach, with further statistical treatment of survey data integrated with the qualitative accounts provided in both solicited and spontaneous ways from 102 PCGS. It provides outcomes from mixed-

method analyses of Questions 18-27 of the survey instrument. These questions concern prevalence and management of voice problems, and participants' beliefs about causation and prevention of voice problems. Data collected from participants' responses to Questions 18-27 pertain to research questions 5-7, namely, the extent of PCGS voice symptoms, PCGS management of voice problems, PCGS' beliefs about causation, the relevance of age range and gender distribution for the PCGS population to issues of training and performance styles. Question 28 produced demographic information regarding age and gender of participants and their histories of smoking and use of medications for respiratory disorders. Data collected pertain to research question 8, that is, the age range and gender distribution of PCGS as a population.

Chapter 6 concludes the dissertation with a summation of how the research has addressed the central research question and how it might inform the future development of voice research and pedagogy in the CCM field.

2 Literature Review

2.1 Introduction

At the outset of this study I searched without success in the existing literature of singing voice for reports that identified professional contemporary gig singers (PCGS) as a population. Faced with this lacuna, I then investigated all fields associated with singers and the practice of singing to see what writers from other disciplines had to say about singers in the contemporary commercial music (CCM) field generally and about PCGS specifically. What follows in this review draws from a wide range of fields such as those in the voice sciences and ethnomusicology. In referencing these reports alongside the few found in the literature of singing voice, and with the addition of my PCGS participants' lived experiences, I hope to draw together a complete picture of what has been documented previously about PCGS and to highlight where my contribution to the literature might be best placed.

2.2 Reports of contemporary commercial singers

A large body of literature concerning the singing voice relates to vocal production and vocal health issues. This literature is particularly useful where there are common, foundational aspects of voice production that are not genre-specific, such as the reports on breath flow, breath-management, alignment and balanced registration. However, this literature has definite focus on the management of classical singers, largely neglecting the singer population of interest in this dissertation, namely PCGS (I. Bartlett, 2010).

As outlined in the introductory chapter, the research bias towards the vocal practice of classical singers and issues related to classical singing styles (Borch & Sundberg, 2002; Lobdell, 2006; Thalen & Sundberg, 2001) is not unexpected given the societal positioning of the music prior to the advent of the popular contemporary styles that predominate today. However, it is puzzling that to date, what little that is presented as expert commentary on

CCM vocal production continues to draw from classical tradition and appears to rely on assumption rather than empirical data as its major informing source. As PCGS comprise a significant group within the population of professional singers both nationally and internationally (Lobdell, 2006; Titze, Lemke, & Montequin, 1997), this state of imbalance both in research and its dissemination is neglectful. The Titze et al. study (1997), entitled *Populations in the U.S. Workforce Who Rely on Voice as a Primary Tool of Trade: A Preliminary Report* still stands as one of only two large participant reports in the literature. The other comparable study was conducted in Sweden by Fritzell (1996). Titze et al. (1997) quoted the U.S. Bureau of Statistics figures from 1993 to 1995, reporting that 23,000 singers were working professionally in the U.S. at that time. Interestingly, while 3000 were identified as classical singers, the majority, 20,000, were classified as “other”. No further style description was offered. The U.S. figures speak to a 23:3 majority whose singing work was not in the classical styles. Fifteen years later, the literature of singing voice (even in the U.S.) is still an inverted reflection of its ratio. Unfortunately, Australian data (Australian Bureau of Statistics, 2001) about those respondents whose major occupation was “Singer” in the week before the census, do not differentiate styles past the basic “classical/other” genre level.

The few existing reports that include contemporary commercial singers (CCS) in participant samples are typically laboratory-based, small sample studies or reports of treatment-seeking cohorts. Mostly, these reports are concerned with the vocal production, voice source characteristics and respiratory function of two specific groups within the non-classical genre represented by:

- Country music singers (Cleveland & Stone, 1997; Hoit, Jenks, Watson, & Cleveland, 1996; Stone, Cleveland, Sundberg, & Prokop, 2003; Sundberg, Cleveland, Stone, & Iwarsson, 1999), and;

- Musical theatre singers - specifically those employing Belt style and technique (Björkner, 2008; Estill, 1988; Miles & Hollien, 1990; Sundberg, et al., 1993).

These studies investigated issues of vocal production in two style sub-sets of contemporary commercial singers. None described their participants' lives as part of the contexts within which their clinical conditions were reported other than a generic description of the country music singers as "professional" or, "premier" (Sundberg, et al., 1999).

2.3 CCM singers and professional status

Where publications do exist concerning CCM style and PCGS' performance (Edwin, 2007; Wilson, 2003), the account is mostly one of informed commentary and opinion rather than empirical report. To date only two studies have been conducted and published which report on contemporary commercial singers (CCS) who have 'professional' status (PCGS). Phyland (1998) wrote about the prevalence of voice disorders for professional singers and the general community in Victoria, Australia. However, her exclusion of some of the most common, mainstream CCM singing styles (rock and sub-styles of pop) and her broad definition of "professional" means that this study offers a defined but restricted picture of PCGS as a population.

To meet Phyland's (1998) criteria for inclusion, participants were "professional singers according to their own identification, have sung more than two hours on average per month and have received an income from singing over the past 12 months" (p. 68). Phyland offered no explanation of how her benchmark of "two hours per month on average" represents a reasonable criterion for "professional." There is no explication of the number of gigs per week or hours spent in each gig performance and the classification of professional is

reliant on self-identification that “some” payment was received without elaboration of the amount of payment or the frequency of this income.

Researcher and classical pedagogue Richard Miller (2006), commenting on the broad-brush application of the term “professional” in research papers, cautioned that, “to make such information useful, various schools and techniques of singing should be identified in research reports. Participants should not all be indiscriminately lumped together as ‘professional singers’ nor should students even at graduate level be designated professional opera singers in published reports” (p. 201). Although specifically referring to singers in the classical genre, Miller’s advice for a careful attribution and systematic deconstruction of the term “professional” is sound advice for writers of any occupational study. Without such refinement, reported outcomes might be misleading to the reader when the status of “professional” is used as a definitive marker for the positioning of participants within such research.

To date, there is only one study that reports on PCGS in real world, live performance situations. Lobdell (2006) investigated “voice use by band members during live music performance” (p. 8). She interviewed nine band singers representing six different singing style groups “other than opera/classical” in a live performance environment. She considered them professional in that they performed music for pay; though, as with Phyland’s research, there is no clear definition of the level of income, but she was able to report that some of her participants made their living, “solely as musicians while others have day jobs” (p. 8). A key finding in her research was that her singer participants were more focused on their interactions and associations with audience and fellow band members than they were with their own vocal health. These and other related issues will be discussed further in Chapter 5 in relation to data collected in my study.

The 102 participants in my study are similar to Lobdell's singers – they performed for pay, they reported singing a range of contemporary commercial styles, and typically were working in a band environment. Importantly, the self-reports collected in the current study offer a larger view of the work-life and lifestyles of the population of PCGS than any others in the literature, specifically: demographics, performance styles, performance venues, between-sets and after-gig behaviour, the use of amplification and microphones, frequency of gigs and rehearsals, voice use in work other than performance, voice symptoms, the frequency of voice problems, their effect on performance, and PCGS' beliefs about cause and management of voice problems. In so doing, the collected data begin to address the lacuna in the literature.

2.4 The lacuna in the literature

Eminent voice scientists Thalen and Sundberg (2001) commented on the skew of published research towards classical voice: “Research on the singing voice has mostly focused on Classical singing, while voice use in styles like, for example, Jazz, Blues and Pop singing has been largely neglected” (p. 82). Similarly, Lobdell (2006) highlighted the existing bias in the research literature: “There appears to be an unequal amount of attention given to formally trained singers in the operatic and classical music traditions while singers and singing practices in different genres have been (relatively) ignored” (p. 31).

With the exception of music theatre voice, the research fields of singing voice and vocal pedagogy have contributed little evidence that identifies or examines CCM styles in terms of vocal production, sustainability and vocal health. These omissions are important for PCGS. The lack of research has hampered the development of a specifically structured pedagogy to support and sustain PCGS as a professional voice-user group.

Most typically, the few published reports of non-classical singing styles have focused on music theatre and the vocal production of ‘belted’ singing (Bestebreurtje & Schutte, 2000; Lawrence, 1979; Miles & Hollien, 1990; Stone, et al., 2003; Sundberg, et al., 1999) with some reports of country music singers (Cleveland & Stone, 1997; Sundberg, et al., 1999).

LoVetri (2008) offered the following rationale: “Little research has been done on any CCM style with the exception of Broadway belting, the style that seems to have been the most fascinating to researchers, perhaps because it has so little to do with classical vocal production” (p. 261). Bjorkner et al (2006) also commented on this focus: “In the past, most scientific studies of the singing voice have been devoted to classically trained singing. In the last two decades, many authors have examined music theatre singing” (p. 553). The published research on music theatre referred to by Bjorkner deals mostly with specific physiological issues such as the measurement of breath flow and the acoustic properties of the vocal tract, or with the continuing debate about the legitimacy of “belt” as a technique, quality or style in its own right (Estill, 1988; Lebon, 1986).

A few writers have addressed the broader range of styles in the non-classical genre (pop, rock, R&B, country, funk, dance, Rap, Hip Hop, etc.). Sullivan (1989) and Lebon (1986) focused on “belted” vocal technique and its application to CCM singing styles and influence on them. Their view that belted singing could be found to some degree in all “popular” vocal music is as true today as it was two decades ago, yet little research has emerged to quantify and explore this, and to further their investigations (Barlow, LoVetri, & Howard, 2007). In contrast, a plethora of self-help books have been published on CCM singing styles (for example, Baxter, 1990; Riggs, 1998) but these texts are based on personal observations and experiences from teachers and performers rather than reports from grounded research. Some of these anecdotal reports have made an important contribution to the

literature of the field. In particular, noted pedagogue Robert Edwin has been a major contributor to the literature of contemporary commercial singing through his regular reports in *The Journal of Singing* (1985-2010). His reflections on his own teaching experiences and on his observations of the voice teaching community in the U.S. make a valuable contribution to the CCM field as they positively influence the thinking and practice of singing voice teachers by promoting the legitimacy and need for a pedagogy that may be different from the traditional classical model. As one of the few sources of positive discussion of CCM singing styles, Edwin's body of work in an influential journal emphasises the need for further grounded research in the CCM field.

The field of contemporary commercial vocal music is stylistically rich and diverse (I. M. Bartlett, 1999; Lobdell, 2006; LoVetri, 2008; Shuker, 2001). Despite this diversity and the ever-changing nature of the field, it is ironic that authors of past reports (Osborne, 1979a, 1979b; Ruhl, 1986) write so conclusively and negatively about CCM styles and vocal production when they are neither researchers nor performers reporting their experiences from within the field. It is useful to look to these early reports to understand why the traditional singing voice community maintains a biased and distrustful view of CCM styles.

2.4.1 Aesthetic bias and 'popular' music styles

The general extent of the aesthetically-biased reporting alluded to earlier can be found in the following description of popular music from an early edition of *The New Grove Dictionary of American Music*:

Its appreciation [popular music] requires little or no knowledge of musical theory or techniques. The growing middle and working classes acquired the leisure time and financial means to enjoy music, but they

generally lacked the cultural heritage and musical training that would have helped them to appreciate classical music (Hamm, 1986, p. 589).

Hamm's (1986) description presented a value-laden and somewhat patronizing perspective of popular music audiences in his association of music style with social class. These opinions supported or possibly were influenced by the attitudes of music commentators of the time. For example, in the titles of Osborne's articles (1979a, 1979b) on music theatre singing styles "Just Singin' in the Pain: Part I" and "Just Singin' in the Pain: Part II", the play on words sets up a negative connotation for the reader from the outset. Similarly, Ruhl (1986) in "Is Singing a Dying Art?" heralded her opinion that the art form was being compromised by popular singing styles. Echoing Hamm's (1986) statement, Ruhl (1986) and the American Academy of Teachers of Singing (1986) questioned what they referred to as the public taste in the face of attributions of poor musical structure and lack of genuine appeal in popular music. Such dismissive views of popular music, its exponents and its audiences, were common in the early literature of vocal study and Osborne's articles were, and continued to be, cited in later scholarly reports of the singing field as authoritative and informed sources of commentary on CCM styles. Surprisingly, more recent authoritative texts continue the association of popular music appreciation with social class. For example:

Popular music. A term used widely in every day discourse generally to refer to types of music that are considered to be of lower value and complexity than art music, and to be readily accessible to large numbers of musically uneducated listeners rather than to an elite (Middleton & Manuel, 2001, p. 128).

As discussed in Chapter 1, today's CCM recording industry is almost entirely focused on singers and singing and so this definition from an authoritative text negatively reflects on singers of CCM styles. It does so by association, clearly positioning singers of CCM styles ("popular music") as having "lesser value" than those singers who perform classical ("art")

music. The definition speaks to a cultural and pedagogical divide that continues to influence all areas of singing voice study; however, it would appear that Middleton was not advocating this opinion but rather was reflecting on a commonly held view as he saw it on or before the year of publication (2001).

Only recently have such categorical generalizations been challenged and primarily these challenges have come from researchers in the field of voice science. For example, Sataloff (1997) an eminent laryngologist and leading author in the field of singing voice care cautioned that, “it is essential for laryngologists, singing voice specialists and all other members of the health care team to avoid biases common to those of us steeped in Western classical tradition” (p. 749). This statement is particularly powerful as Sataloff, while positioning himself solidly within the Western classical tradition, highlighted the biases that may arise from aesthetic preference. More recently singing voice pedagogues have also begun to challenge the assertion that CCM styles comprise an inferior vocal genre, suggesting to the contrary that CCM styles generally involve complex vocal elements (Edwin, 2010; LoVetri, 2002; Wilson, 2000).

Researchers in the field of musicology continue to explore the complexities of popular music generally. For example, popular music is an economic and ideological product, and highlighted the tension between making music and commercialization, suggesting that the commercial nature of popular music is a major element in characterising the field of popular music studies. Middleton and Manuel (2001) in discussing popular music in terms of mass media and cultural economy, caution that popular music is diverse and complex and that any research should consider the multiplicity of factors which truly define the music. Similarly, Shuker (2001) presented some of the complex issues and trends that have developed in the study of popular culture and popular music over the past nine decades. He

suggested that popular music consists of a hybrid of musical traditions, styles and influences with the common elements comprising chiefly “a strong rhythmic component” and “a general reliance on amplification” (p. 7). These elements are as important for those who play the vocal instrument, namely singers, as they are for those who play man-made instruments. He continues by defining his own use of the term “popular music” as “shorthand for a diverse range of popular music genres produced in commodity form for a mass, predominantly youth market, primarily Anglo-American in origin (or imitative of its forms), since the early 1950’s” (p.7). He also proposed that popular music defies precise, “straight-forward” definition for the following reason:

It is difficult to define phenomena which are social practices as well as economic products or pedagogical concepts, and which are not static but constantly evolving. Indeed, precise definitions can be constraining; they should be regarded as frameworks for exploration and elaboration, rather than factual declarations to be defended. (p.3)

Shuker (2001) presents a reminder and caution to those commenting on CCM singing styles to be cognisant of the dangers of oversimplification when defining style elements and singers’ technical execution of these.

Ethnomusicology clearly demonstrates that much of the debate on popular music styles is sociological or aesthetic in nature, highlighting that it is rarely based on an “insider” view of practice from those working within the field but rather is often opinion-based commentary from “outside”. As musicologists work to clearly define and re-evaluate the term “popular” in relation to the music, it follows that researchers in the field of singing voice need to define the specific vocal elements of CCM singing styles. It could be argued that grounded research based on data from practitioners within the field of PCGS is necessary rather than a continuance of opinion-based commentary from those ‘outside’.

2.5 CCM as a genre

PCGS who perform CCM styles are the focus of this current dissertation research and its report. From my observations and practice as an insider, 'genre' is not a term used by PCGS or their audiences when describing music performances. Rather they refer more typically to 'style' in speaking about music that they listen to or are singing. The employers of PCGS also use style to define the music they require for a particular performance or venue. For example, in my experience clients will request a list of repertoire or 'styles' that I sing: I am never asked to list 'the genre'.

The term "genre" is used extensively in academic reporting but, as Finn & Kushmerick (2006) suggested, genres are often vague concepts with no clear boundaries. In exploring the use of 'genre' in document retrieval they reference the use of the term in the discourse on music:

There is no definitive agreement on what is meant by genre. However, the common thread among these definitions is that genre relates to style. ... The term "genre" occurs frequently in popular culture. Music is divided into genres based on differences in style, e.g. blues, rock or jazz... Identifying a genre taxonomy is a subjective process and people may disagree about what constitutes a genre, or the criteria for membership of a particular genre... (p. 1506)

Kennicott (2009) described style similarly:

Style is rather like "myth," a word that seems to mean two diametrically opposed things. A myth is something to be debunked and exposed, or it is something so fundamentally true that it functions like the ground bass of collective psychology. Style is similarly antithetical in its meanings, maybe even more so. It can mean the received wisdom of how to sing a phrase, or the personal idiosyncrasy that makes a singer indelible in our memory. It is in one sense the baseline of how things should be done, but it is also a catalogue of things that are exceptional. It can be used to enforce old habits and ideas, or celebrated (in its guise as fashion) as a succession of the ever new and "stylish." (p. 13)

Despite the uncertainty of definition, the descriptors "genre" and "style" have often been used in an interchangeable manner by authors to describe categories of musical

repertoires and especially in the literature of singing voice where there is little consistency in the application of the term. For example, in a much cited journal article, voice scientists Schutte and Miller (1993) referred to classical and non-classical as two major singing 'styles'. They identified differences in vocal production between classical and non-classical styles, particularly that of vocal tone. They also highlighted very different performance environments of the two styles. They expanded the investigation into a comparison of *sub*-styles within the major non-classical style group, basing their descriptions on experience with a non-specific number of singers. However, Phyland (1998) used a different application of the terminology in her discussion of CCM singers. She described both jazz and music theatre as individual genres, thus establishing a different hierarchy from that of Schutte and Miller's (1993) positioning where these were cast uniformly as "*sub-styles*" of an overarching, non-classical music style. Phyland's descriptor signposts music theatre and jazz as genres which encompass several different "*styles*" (p. 109).

Yet another level of complexity was offered by Shuker (2001) with his introduction of "meta-genre" in his assertion that the terms rock and pop are frequently used to represent popular music as a whole: "they are meta-genres within a broader musical soundscape" (p. 5). Conversely, in her treatise on contemporary commercial music, LoVetri (2002) described pop, rock, R&B, etc., as a range of non-classical "styles". All of this variant labeling needs to be addressed as it serves only to confuse the issue of style diversity inherent in CCM.

It is my intention in this study to use the term "styles" to describe the wide range of PCGS' repertoire and "genre" will be used to distinguish the broad music classifications "classical" and "non-classical" recognizing that both genres of vocal music incorporate many different styles.

2.5.1 Characteristics of contemporary style singing

In relation to the singing voice, style is a method of vocal production that has defining acoustic, physiological and perceptual features (Burns, 1986; Osborne, 1979a, 1979b; Schutte & Miller, 1993). For the purposes of this dissertation, six major style groups were identified as representative of the PCGS’ genre. These were: pop, rock, country, rhythm and blues (R&B), jazz, and music theatre. Each of these style groups encompasses an ever-growing number of sub- or fusion styles. For example:

<i>STYLES</i>	<i>SUB-STYLE</i> S
Pop	House Dance Rap Disco
Rock	Heavy Metal Grunge Soft/Hard rock Rock and roll
Country	Bluegrass Modern Country Country and Western
R&B	Funk Gospel Motown Doo-wop
Jazz	Swing Latin Blues Ballad Be-bop
Music theatre	Broadway Rock Opera Modern Operetta Juke-Box

Table 1: Style groups and sub-styles

Contemporary commercial music audiences have an expectation that PCGS will perform each style sub-style “authentically” presenting both the common and exclusive stylistic elements and embellishments characteristic of each style group. These are features of the music (specific rhythm patterns, rhythmic accents, chord progressions, instrumentations,

and studio effects) as well as the quality of vocal production of singers who interpret the music (vocal tone, phrasing, vocal effects, accent and vocabulary).

Phyland (1998) reported on the differences in vocal production and music style elements between singers of jazz and singers of music theatre, highlighting the wide range of different style elements and voice qualities necessary for “authentic” vocal production of these CCM styles. She proposed that jazz singers choose from a “fusion” of pop, speech, country, opera, croon, belt or other style elements, “according to an individual singer’s interpretation of the song and/or the performance requirements” (p. 48).

2.5.2 The fusion of styles in CCM

The transference of style-related effects and embellishments across the range of CCM styles has resulted in a blurring of previously clear lines of division between styles. Some authors have reflected on this evolution and the hybrid nature of popular music and the crossover of style boundaries (Hall, 1997). For example, Riis (2005) described R&B as a term introduced in 1949 that encompassed all earlier black musical traditions including rural and urban blues, boogie woogie, black swing, jazz spirituals, gospel and mainstream popular music until, in the 1960s, gospel began to dominate and R&B transformed into Soul (p. 228). Musicologists Gammond & Gloag (2002) spoke of the diversification and fusion of styles more generally:

The process of fragmentation and diversification has continued and, indeed, intensified. This is evident in the multiplicity of styles and terms that now coexist (rhythm and blues, rap, hip-hop, trip-hop, among others), each of which seems to have the potential to attract its own, often exclusive, audience—another factor that undermines any notion of a singular popular music and culture. This now seemingly endless pluralization of popular music may be seen to reflect a wider social and historical process; but it also suggests that popular music, rather than being simply a reflection of this process, is an active agent in its construction and a statement of its current condition.

An objective of this dissertation is to document the diversity of styles experienced by the PCGS participants through an analysis of their self-reports. With the growing “pluralization of popular music” and the emergence of fusion styles, their data could facilitate the design of an accurate investigation and subsequent reporting on the range of vocal styles within the CCM genre. These data are presented in Chapter 4.

2.5.3 Style characteristics and the need for a developed pedagogy

In a comparative study of the characteristics of classical and non-classical singing, voice researchers Schutte and Miller (1993) identified three distinguishing characteristics of non-classical singing that exemplified the basic goals of this new area of vocal study. These were:

- text dominance - “it is essential that they [the texts] be understandable, even on first hearing”
- naturalness of sound - “often even at the expense of beauty”
- vocal individuality - “it is not unusual to adapt the song to the strengths and weaknesses of the singer” (pp.142-143).

Schutte and Miller (1993) commented that the genre-specific elements of non-classical singing styles they had identified would be considered faults and therefore unacceptable in the western classical tradition. Characteristic differences in the required vocal production of classical and non-classical singing styles have been highlighted further by a small number of pedagogues. Among others, Edwin (2008), LoVetri (2002), and Sullivan (1989) have called for the development of a specific, contemporary-voice pedagogy to support and maintain the healthy, functional longevity for singers in the CCM group,

similar to that offered to classical singers. LoVetri (2008) highlighted the irrelevance of the outsider imposing standards of style from one genre onto another:

The standards of a style and the vocal characteristics it [contemporary commercial singing] requires are established and maintained by those who have a successful professional career in that style, and by their audiences. They are neither set by stars who venture into a style from another unrelated one nor by academics. The standards do change gradually over time, as they are affected by artists' creative exploration and by the shifting popular tastes of fans in the marketplace. (p. 262)

In a report of 'Superstardom in Popular music', Hamlen (1991) suggested that "quality in singing is a subjective measure of tone and colour (timbre) and is validated according to audience appreciation and acceptance" (p.730). He countered what he considered "a frequently expressed view...that consumers of popular music have no recognition of or appreciation for 'quality' or 'ability' in singing" (p.729) by offering empirical evidence that audiences "do indeed discern quality in their singers refuting common notions against this view" (p.731). For PCGS who earn their living as live-performance 'covers' singers, the audience expectation is for an exact reproduction of the original recording artists' vocal production along with all the associated technical effects of the recording. However, those who are not practitioners in the field appear to lack appreciation of this audience expectation for performances that are specific and unique to each style. Their etic commentary has construed a view of CCM styles as inherently vocally damaging and this attribution has created a perception of inferior quality for CCM singers in comparison to their classical counterparts.

The practice of comparing the voice quality and vocal production of singers from different genres is problematic (Edwin, 2000; Estill, 1988; Schutte & Miller, 1993), as is the focus of the published research on treatment seeking singers and small samples in laboratory-based studies. These issues will be discussed further in Chapter 5.

2.6 Research and CCM styles

While music theatre (Bjorkner, et al., 2006; Bourne, Garnier, & Kenny, 2010; Edwin, 2003; Melton, 2007; Popeil, 2007; Sundberg, et al., 1993) and to a lesser extent country music styles (Cleveland, Stone, & Iwarsson, 1999; Cleveland, Sundberg, & Stone, 2001) have attracted some interest, a review of the small body of research that addresses CCM singers revealed a pattern of exclusion for PCGS generally, and where research does exist, there appears to be an exclusion of many styles common to PCGS' performances such as pop, light or heavy rock, and country and western. For example, Perkner, Fenelly, & Balkisson (1999) excluded rock singers from their comparative study of three types of singers, "opera, music theatre and contemporary (not rock)" (p. 603). In contrast to the commonly held view in the literature that contemporary styles are inherently damaging, they found that none of the three styles had higher prevalence of voice disorder or disability than either of the others. They did however find a significant increase in voice disorders and voice disability in the singers, compared to non-singer "friendship control" group (friendship matching is common practice for studies in the voice sciences where each singer participant is requested to secure a non-singer friend to comprise the control group).

Similarly, Phyland (1998) excluded "rock singers" specifically from her study as she investigated the prevalence of voice problems among three groups of professional singers and a friendship-matched group of non-singers. There were further exclusions. While she described her "contemporary - other than rock" group as predominantly nightclub singers who sang jazz, folk, rhythm and blues, a capella" (p. 68), she went on to exclude participants who sang other recognized contemporary styles: "Singers were excluded if they had sung popular, country and western, light or heavy rock styles for more than 10% of their total singing time over the previous 12 months" (p. 69). She presented a two-part rationale for this exclusion. The first involved a difficulty in identification, as singers in the excluded styles

were not likely “to be associated with formal networks or associations” and therefore were difficult to identify and contact. Secondly, she noted the inherent problems of categorizing singers of CCS into particular styles: “The wide range of singing styles represented within popular, light and heavy rock singing was considered problematic to the endeavor of classifying singers according to their singing styles” (p. 69).

Jazz style singers were heavily represented in Phyland’s (1998) CCS sample. For example, “more specifically, most of the CO singers [contemporary singers] predominantly sang jazz styles and were recruited on the basis of involvement in jazz venues” (p. 69). However, my review of the Australian Gig Guide (H. W. W. Private Limited, 2009) for CCM performances (by venue) in Australia for a three-week period in September 2009 revealed that jazz singers are a minority population within the PCGS group. Phyland’s findings are significant for their pioneering account of CCM singers, however my dissertation attempts to address limitations she acknowledged in her study, particularly its exclusion of some of the more popular CCM styles, the jazz style focus and the loose definition of ‘professional’ in relation to PCGS.

2.6.1 Small sample studies of contemporary commercial singers

It is not, uncommon in the literature of voice science (the study of speech and voice production including acoustics, anatomy and physiology, and biomechanics of all major subsystems of speech production – breathing, phonation, resonance, and articulation), to find observation and measurement reports of single singer subjects performing a range of cross-genre (classical and non-classical) styles (for example, Schutte & Miller, 1993; Yanagisawa, Estill, Kmucha, & Leder, 1989).

In a frequently cited study, Schutte and Miller (1993) used spectrographic, electrographic and sub-glottal (below the vocal folds) and supra-glottal (above the vocal folds) pressure measurement to record the acoustic and physiological features of a female singer demonstrating different vocal productions within the pop/and belt style. They classified this singer's voice type as mezzo-soprano and stated that she possessed significant singing experience in both classical and non-classical styles. No specific insights were offered regarding the singer's background with regard to voice training, career status (whether professional or amateur) or the frequency of singing performances in each genre.

Likewise Yanagisawa et al (1989), used individual singers to produce a range of vocal styles in their laboratory-based study:

Fiberscopic video laryngoscopy was performed on five professional singers to determine the presence or absence of aryepiglottic narrowing as a function of voice quality. Each sang "Happy Birthday" and parts of the "Star Spangled Banner" in six different voice qualities: speech, falsetto, sob (a low larynx with a vocal tract expanded by relaxing the middle constrictors), twang, belting, and opera. (p. 342)

As with Schutte & Miller's research, no specific insights were offered regarding the singers' backgrounds with regard to voice training, career status (whether professional or amateur) or the frequency of singing performances in each genre.

Stone et al (2003) in their study of a single singer who they claimed was a "female professional singer with noted expertise in both Broadway, and operatic performance styles" (p. 18) prefaced this description with a caution: "Whereas a given singer often chooses to specialize in a single style, few artists develop expertise in several styles" (p. 17). They raise the issue of the reliability of a single singer subject's ability to demonstrate a range of styles. This is problematic as the extent to which any of the singers was capable of producing an equally "authentic" vocal production in classical, pop and belt styles is unknown;

assumptions therefore are reliant on the researcher's experience in, expert knowledge of and familiarity with each genre (classical and non-classical) and each sub-set of style being measured.

Despite the limitations of single singer and/or small samples some writers are widely cited in the literature of singing voice. For example, Estill's research on the physiology and production of belted singing had a major impact on the field of vocal pedagogy. These were small sample studies and she was often a subject in her own research. Estill (1988, 1989) identified various qualities associated with a range of non-classical singing styles, predominantly Twang (a bright, ringing quality produced in the larynx akin to the singers formant in classical singing) and Belt (speech oriented, straight tone quality). In conjunction with a number of voice scientists, she applied a range of technologies (including EMG, electroglottography, voice signal analysis, X-rays of the phonating larynx, laryngeal fibre endoscopy, acoustic measurements and simultaneous videostroboscopy) to investigate the phenomenon of Belt singing.

2.6.2 Belt style and technique

Belt singing is used to some degree in all CCM styles, including Broadway music theatre, pop, rock, country and jazz styles. This speech-based, forward, bright singing voice quality encompasses all the elements that typify CCM styles and is very different to the vocal production of female classical singers (Estill, 1988; Schutte & Miller, 1993). There are differences in the coordination of the laryngeal musculature, the acoustic set up, breath management and most importantly registration (for females, keys for CCM styles such as pop, rock etc. are set commonly in the female lower octave over a range of F3-C5 while the range for belted styles can extend from F3 to Eb5). Additionally, a neutral to higher larynx position, narrowed pharynx, high back of tongue position and personalized speech oriented

phrasing (consonant driven, with little or no vibrato), are accompanied by speech-like articulation (voicing of diphthongs as in speech, rather than pure vowels), and a specific acoustic set up (presence of the raised 2nd formant, the absence of the singer's formant).

Phyland's (1998) study added to a growing body of research which identified, described and analysed "belt" vocal production as a primary style used in music theatre singing (Sundberg, et al., 1993). She listed a variety of speech-dominated style approaches essential to music theatre repertoire that incorporate varying degrees of belt quality. These were: legit [a modified classical vocal production incorporating speech quality], character voice [specific accents and exaggerated speech voice production], and belt [speech quality production taken above the second passaggio for females] (p. 48). This report highlights the complex range of types of voice production necessary within the musical theatre style group. Similar complexity exists for all style groups within the CCM genre.

Generally, classically backgrounded teachers and pedagogues have construed these differences in sound production and technique as vocally damaging; consequently, CCM vocal production has been considered flawed (Miles & Hollien, 1990; Spivey, 2008) and in some cases aesthetically inferior (Edwin, 2002). In a recent study, Ferrone, Galgano & Ramig (2010) tested the view of a group of "professional listeners" on the extensive use of La MaMa vocal technique (a belted speech production used by actors). The general consensus from the professional listeners was that this technique would lead to symptoms of vocal abuse. However, contrary to opinion offered by the professional listeners, Ferrone et al. (2010) reported a marked improvement in the vocal strength and resilience of the actors who were trained in this method over a six week period:

The majority of professional listeners (11/12) judged that this technique would result in symptoms of vocal abuse; however, acoustic data revealed statistically stable or improved measurements for all subjects in

most dependent acoustic variables when compared with both post-training and post-performance trials. (p. 14)

Although the participants in this study were actors, this finding has important implications for PCGS. It speaks to the relevance of training programmes where the discipline and application of specific exercise can work to strengthen the vocal instrument.

The “professional listeners” in the Ferrone et al. (2010) study were not identified, however their opinions resound with similar views of CCM singing styles from etic commentators in the literature of the field; that is, that belted styles lead to vocal abuse. In the past 25 years belt voice production has attracted a growing base of research, which for the most part, points to belt as both a singing style and a technique, which can be taught and learned. Yet the attributions of style-related vocal abuse remain, prompting even classically oriented voice pedagogues and researchers to comment on the probability of an aesthetic divide. The following statement from McCoy (2004) (a classical voice pedagogue and opera singer) exemplifies this view:

Classically oriented voice teachers often misunderstand this form of vocal production [Belting] and have little aesthetic appreciation for either the sound or the literature for which it is required. Objectively there are many similarities between female belt voice and the male operatic head voice. (p. 75)

Similarly, in a paper concerning choral singers and world music, Wells (2006) reflected on the historical opposition to belt singing:

Belt technique has been perhaps the most controversial subject in the field of voice research and pedagogy in the past half century. Outright condemnation of the technique as a valid mode of phonation has been expressed by many in the classical singing community, which has resulted in a pariah-like status for the style in the field of voice training. Only in the past two decades has a chorus of advocacy from voice scientists, physicians, practitioners, and pedagogues begun to sound through the din of opposition and prejudice. (p. 2)

Such commentary is important for the wider community of CCM singers and most importantly for PCGS where belt singing is integral to their professional practice. Current research findings indicate that the traditional perception of belt singing as “inevitably damaging” lacks empirical support. Most importantly for the PCGS participants in my study, the research recognizes the need for a developed pedagogy which addresses belt quality within a range of style-relevant techniques, a pedagogy which recognizes and values the apparent differences of vocal production in contemporary commercial and western classical singing.

2.7 Style production and implications for PCGS’ vocal health

As previously reported, there is a small body of published research that addresses issues such as CCM style production, sound source, acoustic properties and breath measurement, but these are few and cover only two performance styles in any detail, specifically musical theatre (for example, Bourne, et al., 2010; Edwin, 2005; Estill, 1988) and country (Cleveland, et al., 1999). However, a search of the literature revealed only three studies that directly reported on the vocal health of CCS with regards to the most common performance styles such as pop, rock. All three were etic reports from writers within the voice sciences: Batza (1971), a laryngologist, reported his observations of five “rock and roll” singers; Lawrence (1979), also a laryngologist, reported a study of 27 Belt singers; and Lobdell, a speech pathologist, whose investigation was the most style-extensive, reported the live performance experiences of nine PCGS whose singing styles ranged widely, including pop, rock and roll, country, folk, Creole and fusion music such as Cajon/roots/folk/pop (Lobdell, 2006).

Batza (1971) reported on five “rock and roll” singers who were referred to his clinical practice by their band manager for a laryngologic examination prior to signing contracts for

public appearances the following year. Batza described these male singers as typifying “a moderate form of rock and roll singing” and as “one successful group of five young rock and roll singers” who had sung “professionally as a group for 4 years” (p. 36). Batza noted that the singers “lacked formal training, but had good natural voices.” He found some vocal pathology in all five singers including functional voice problems such as fatigue and hoarseness and pathologies such as vocal fold nodules. Illustrative of the traditional opinion of the era, he concluded that “vocal abuse is an inevitable by-product of certain factors that seem to predominate in rock-and-roll entertainment today” (p. 38).

Batza’s method of investigation relied heavily on clinical observation, and notably, he drew his style-based attributions of “inevitable vocal abuse” based on only five research subjects. He did not describe or elaborate on his reference to “inevitable by-product of certain factors,” nor did the investigation attempt to identify and describe variables other than those reported by the subjects, and there were no comparisons with similar singers who had not developed vocal damage but who sang in comparable performance settings. For these reasons, it is a stretch to link the variables of style and abuse causatively as Batza did. The causative relationship he drew between factors of style and vocal abuse, along with his assertion of the “inevitability” of abuse, typify assumptive theorizing in the field. To date, the literature has yet to yield any sustainable evidence to support Batza’s (1971) opinions of style related “inevitable vocal abuse” for PCGS. It is hoped that the self-reports of participants in the current study will present a clearer picture of their “lived experience” (Giorgi, 1985) as representatives of the population of PCGS.

In his study of 27 “Belt” singers, Lawrence (1979) used the term ‘belter’ as a coverall description with no further identification of the particular CCM styles that the singers in his sample employed. This reflects yet another limitation in the commentator’s exposition –

identification of CCM style through broad classification. However, Lawrence's report raises important questions of whether functional voice problems occur with similar rates for contemporary or classical singers and for the general community.

It seemed as time lengthened and as case histories accumulated, that there was little if any difference in the vocal tract pathologies to be seen in belters [a technique employed to some degree in all contemporary commercial styles] as compared with those shown by non-singing patients, or even by subjects with classical vocal hyper function, or vocal abuse problems. (p.28)

Lawrence's report and his observation of "little difference" in vocal pathologies for belters, classical singers and non-singers stands alone, highlights an urgent need for further research which questions the 'traditional wisdom' of a strong probability of voice damage for singers of CCM styles as distinct from other singer groups.

2.7.1 PCGS and the prevalence of voice disorders

Much research exists in the area of occupational voice health risk (Fritzell, 1996; Titze, et al., 1997; Verdolini & Ramig, 2001; Williams, 2003) with classroom teachers being the most studied occupational group, but with singers reported consistently as the occupation at greatest risk. The Verdolini & Ramig study (2001) identified singers as a major group of professional voice users within the general population at high risk of developing voice disorders. However, very little of this information addresses the prevalence of voice problems or problematic symptoms for the professional functioning of singers. Williams (2003), commenting on the two major studies (Fritzell, 1996; Titze, et al., 1997), gave a possible reason for the dearth of research involving singers as an occupational group: "Whilst the frequency of voice disorders in singers is relevant, the most interesting findings from the public health perspective are those occupations which employ large numbers of workers" (p. 457). This comment carries two assumptions: first that the number of singers working

professionally is insignificant in comparison with other occupations in the public domain; and second that although “relevant,” singers are less important from a public health perspective. This is a sweeping statement given the lack of reliable statistics for singers as an occupational group both nationally and internationally, but it reflects the view of others in the literature whose research subjects and subsequent theorising have relied on singers presenting with problems at voice clinics.

In a large study conducted in the U.S. (Titze, et al., 1997) and another in Sweden (Fritzell, 1996), researchers attempted to establish the relative frequency of attendance at voice clinics of various occupational voice users, comparing these groups to non-specific voice users in the general population. In his review of the literature, Williams (2003) combined results from the Titze et al. (1997) and Fritzell (1996) studies and found that although singers in the U.S. and Sweden accounted for only 0.02% of the population of professional voice users in those countries, they accounted for 11.5% of voice clinic attendees. These data suggested that ‘singer’ was the occupational group at greatest risk of developing voice disorders, however other reports suggest that their high rate of clinic attendance may be a result of singers’ heightened perception of changes in their vocal sound (Sapir et al., 1996). Williams (2003) spoke to an important consequence of voice problems for singers and teachers (the two most at-risk groups): “voice impairment can be employment threatening as voice use is a critical component of their job” (p. 457). This issue will be discussed further in Chapter 5.

2.7.2 Vocal fatigue

Prevalence data suggest that vocal fatigue is a voice impairment that is particularly common among the teaching, singing and acting professions, however, the definition, critical identifying features, and causes of this condition remain either uncertain or unproven (Welham & Maclagan, 2003). Some reports describe vocal fatigue as a symptom of a voice disorder with either a functional or an organic etiology (Boone & McFarlane, 1988; Colton, Casper, & Leonard, 2006; Postma, Blalock, & Koufman, 1998). Others imply that “vocal fatigue and associated compensatory behaviours may predispose phonotrauma and the development of laryngeal pathology” (Burzynski & Titze, 1986; Kostyk & Putnam Rochet, 1998).

Vocal fatigue as an isolated phenomenon has been considered in a number of empirical studies (Gelfer, Andrews, & Schmidt, 1991; Solomon & DiMattia, 2000). Chang & Karnell (2004) reflected on the common view of authors in the literature that vocal athletes, teachers, singers and others who use their voice extensively as a part of their work are the groups most affected by vocal fatigue. Only a few reports have focused on singers (Kitch & Oates, 1994; Scherer et al., 1991). The Kitch and Oates study is cited most frequently and discusses results from self-reports of vocal fatigue in 10 actors and 10 singers. Both groups reported that vocal dynamic aspects (e.g., pitch range) of their singing were most affected when they were vocally fatigued as evidenced by changes in kinesthetic/proprioceptive sensations and vocal dynamics. The researchers found that the most common causes of vocal fatigue were vocal misuse, being tired, high performance demands, and using high pitch/volume levels. Both the singer and actor participants reported increased tension and discomfort in the throat, neck, and jaw regions.

Generally, the literature suggests that symptoms of vocal fatigue include changes in voice quality, dynamic range, pitch range, respiratory support for phonation, level of muscular and structural tension/discomfort, vocal mechanism control, and level of vocal effort (Welham & Maclagan, 2003). Data pertaining to the prevalence, incidence and management of vocal fatigue by PCGS in this current study will be reported in Chapter 5.

2.7.2.1 *Causes of vocal fatigue*

Chang & Karnell (2004) suggested that vocal fatigue occurs, “following the use of abnormal pitch, abnormal intensity, abnormal voice quality and has been reported to be associated with anxiety, changes in weather, lack of sleep, and increased physical activity.” They went on to suggest that breathy and strained voice qualities are symptoms of vocal fatigue as are a reduction in loudness, pitch range and duration of sustain and that “it [the voice] may feel uncomfortable, tense, or dry” (p. 455).

In discussing the prevalence of vocal fatigue in their participant sample, Kitch and Oates (1994) reported that individuals might respond “idiosyncratically” to the demands of a vocal performance. They noted that individual differences in vocal training and performance experience may have contributed to their reported findings and suggested that other factors might have influenced their results (such as performance anxiety and the nature and extent of voice use prior to the performance). Questions in the survey instrument of the current study were framed to investigate the prevalence of voice symptoms for PCGS and sought participants’ opinions about voice problems and the effect of these on their professional functioning. Their responses are reported in Chapter 5.

2.8 Training and vocal health

There appears to be a prevailing view amongst traditional pedagogues that classical voice training successfully equips singers for performance of any vocal music style (I. Bartlett, 2010; Turner & Kenny, 2007), believing that this training will afford them protection from developing voice problems. As reported earlier in this review, writers have begun to challenge this view with regards to both vocal production (I. Bartlett, 2010; Edwin, 2005; LoVetri, 2008; Wells, 2006) and physical behaviour (Turner & Kenny, 2007). In a recent “position paper”, the American Academy of Teachers of Singing (2008) encouraged their membership to adopt, “an expansion into a systematic practical approach to teaching genres included in CCM and other nonclassical singing” (p. 7). The paper stated that techniques for CCM styles have not been clearly defined but recognize that the prevailing ‘one size fits all’ classical training approach to singing technique is no longer valid:

Though many singers perform successfully in both classical and CCM styles, the vocal techniques required to produce those styles are not likely to be interchangeable. Vocal techniques had been developed that served a variety of vocal literature including opera, oratorio, national and international art songs, as well as certain sacred and secular music...Unfortunately, techniques for singing other genres such as folk, gospel, blues, jazz, pop, and rock, which fall under a new heading called Contemporary Commercial Music (CCM), have been neither clearly defined nor seriously addressed in traditional voice pedagogy texts. While it is true that all singers must breathe, phonate, resonate, and articulate, they do not necessarily approach these technical elements in the same manner. Recent acoustic, physiologic, and pedagogic research challenges the widely held belief that classically based voice techniques alone can serve the world's diversity of singing styles. (American Academy of Teachers of Singing, 2008, p. 10)

This is a benchmark statement as the Academy (est. 1922) had previously held a conservative stance on the teaching of singing, promoting the view that technique used for classical voice production is the only option for the development and maintenance of vocal health for singers. This view is evident in a previous recommendation that voice teachers

should make the student aware of the vocal damage inherent in pop/rock singing (American Academy of Teachers of Singing, 1986).

As discussed in Chapter 1, there is a growing recognition that the vocal production of contemporary singers is different from that of classical singers (Estill, 1988; The American Academy of Teachers of Singing, 2008). The vocal production of CCM styles and sub-styles require incorporation of defining elements such as speech, twang, sob and belt. Some elements are style-specific and include a more complex layering of 'effects'. For example: grit, growl, glottal onsets, and scream, particularly for Rock singing; soft onset, yell and vocal fry, particularly for Pop singing; yodeling, crying and riding an American 'r', particularly for Country singing; breathy onset, glottal stroke and scat, particularly for Jazz singing; character voice, belt, legit (modified classical), and pop/rock elements, particularly for Music Theatre singing (I. Bartlett, 2010; Phyland, et al., 1999; Radionoff, 2006; Wilson, 2003). Since these vocal elements and effects may cross-over style boundaries and several may be employed by a CCS in a single performance, the relevance of classical technique (legato line, developed vibrato, and even tone) and the "one size fits all" philosophy (I. Bartlett, 2010) for training becomes highly questionable. As proposed in Chapter 1, the imposition of classical standards of tone and quality on CCS is inefficient if not dangerous; each genre requires a distinctive vocal production and therefore a specific pedagogy rather than a 'one size fits all' technique.

2.9 The relationship of technology and vocal health

In addition to the complexities of style-based techniques and vocal production, other factors impact on PCGS' maintenance of their vocal health. To meet audience demand for style "authenticity," PCGS must maintain speech quality and speech phrasing across their vocal range while achieving the necessary vocal volume to be heard over amplified instruments. Amateur CCS face similar challenges in noisy entertainment venues such as Karaoke bars and dance parties where they may need to raise their singing and speaking voice levels to monitor their vocal output against the continuous background noise (Yiu & Chan, 2003).

Historically, western classical vocal production was essential for a singer's voice to be heard acoustically above an orchestra. The advent of amplification made it possible for singers to be heard over loud and large instrumental backings while they employed a conversationally expressive, low intensity, speech quality production, (I. Bartlett, 2010; LoVetri, 2008). The new colloquial vocal sound quickly became the popular choice of both female and male singers and their audiences, however the ensuing, rapid development of electrification and amplification of instruments (e.g., guitars, pianos, drums) raised the intensity of accompaniments to levels that physically overwhelmed the singer's proprioception of their own vocal intensity.

The utilization of live-sound reinforcement is a major factor for vocal health maintenance and performance longevity for PCGS, primarily where loud background noise is the norm in acoustically poor venues. From my experience, typical Australian venues for PCGS are pubs, clubs, restaurants and hotel function rooms, where low ceilings, carpeted floors, windowless, acoustically treated walls, or open air environments are the norm (I. Bartlett, 2010; Wilson, 2003). These acoustically deficient spaces can only be managed with

the assistance of live-sound reinforcement (i.e., amplifiers, mixers, front of house speakers, monitor ‘foldback’ speakers and microphones). LoVetri (2008) affirms this insider view:

All CCM [contemporary commercial music] styles evolved from colloquial speech, and all of them are electronically amplified. Therefore, CCM vocal production cannot be divorced from amplification. The microphones, speakers, monitors, soundboard, and sound engineer impact what the singer hears, and consequently, what the singer does. This means that the singer’s auditory function and perception must be examined in direct relationship to vocal production. (p. 261)

The last sentence of LoVetri’s statement is particularly relevant as vocal damage is most likely to occur when singers have difficulty monitoring their vocal output.

Experts from the disciplines of medicine and voice science agree that contemporary commercial performance environments present unique challenges for the vocal instrument (Batz, 1971; Lobdell, 2006; LoVetri, 2002; Sataloff, 1997; Schutte & Miller, 1993). They recognize that CCM singers have to produce a high energy vocal output for extended periods in competition with electrified instruments and that the high levels of background noise result in problems of auditory monitoring for the CCM singer. They suggest that the amplification of instruments presents an even greater danger to vocal health if singers’ performances lack appropriate fold-back monitors. While suggesting that CCM singers should utilize onstage foldback monitors to assist an accurate perception of their vocal output, researchers noted also that the volume levels of these monitors are often too low to be heard over the ambient sound level on the stage and therefore of little assistance (Borch & Sundberg, 2002). PCGS’ reports of their familiarity with and use of live sound reinforcement is discussed in Chapter 5.

2.10 Summary

In summary, the literature review indicates that neither pedagogues nor researchers have yet addressed contemporary commercial voice as comprehensively as they have classical voice. The field is yet to establish a sound empirical basis from which to validate many of the claims made by commentators in the latter tradition when speaking to issues of voice production and style management for CCM singers. In reporting the data collected from the self reports of 102 PCGS in the current study I hope to redress the situation by providing an empirical response to key issues for PCGS and to address the lacunae in the literature through the central research objective of this study: To present a detailed profile of the professional contemporary gig singer in the Australian context.

Such a profile will permit a range of more specific research issues to be discussed including the following: the relevance of PCGS training background to performance longevity, the range of styles performed by PCGS and implications for their vocal health, PCGS venue and performance environments, the impact of other employment on their voice load, PCGS common voice symptoms, PCGS management of voice problems and the age range and gender distribution for the PCGS population.

Participants' data are presented with discussion in Chapter 4 and Chapter 5 of this dissertation.

3 Method

3.1 Introduction

As indicated in previous chapters there is a paucity of research concerning singers of CCM generally and PCGS specifically. In the few studies that do exist, only small numbers of CCS were included in the respective participant groups. Mostly, these studies were written by observers outside the CCM field, predominately from theorists inside the classical tradition and/or from voice specialists (medical) or researchers reporting on data gathered from small laboratory-based studies and treatment-seeking samples. Further, the exclusion of singers of popular CCM styles (e.g. Rock, R&B and sub-sets of these styles) from this small body of research creates uncertainty about whether the expert views expressed in the literature are reliable. In order to investigate whether or not the views presented in the literature match the reported experiences of those in the field I believed that it was necessary to seek information from PCGS themselves. This chapter will outline the methodology adopted to undertake this research.

3.2 Defining the field

Contemporary commercial singers (CCS) are those who perform popular, non-classical music styles within the popular music industry (LoVetri, 2002). As discussed in Chapter 1, for the purposes of this study “Professional” was added to LoVetri’s definition and “gig” was used instead of the term “commercial” to better describe the target population of the study. Profiling of the target population in this study could then be refined to singers who earned a substantial part of their living performing contemporary music gigs usually in commercial venues (clubs, pubs, hotels, function rooms, recording studios, etc.) namely, professional contemporary gig singers (PCGS).

The generally recognized industry standard for a gig in Australia is a 3-4 hour “call”, that is, the duration of a performance (*Queensland Musician’s Union, Note 1*). A standard was set to ensure that participants in this study were seen as “Professional”. Criteria for this standard were that participants were performing minimally at one to two gigs per week (“6 or more hours per week”), for 3-4 hours per performance calculated as an annual average. The number of hours per call could vary for studio singers, but still needed to meet the criteria of “6 or more hours per week”. The decision to set this minimum was made to exclude amateur or “occasional singers” (Phyland, 1998). Phyland used the very modest cut-off figure of “2 hours on average per month” (p. 69) to create this exclusion. A more stringent cut-off criterion of 6 hours per week (representing a minimum 2 gigs per week) was adopted in my study to further strengthen the likelihood that participants were earning a regular income from their “professional” music performances.

Additionally, the PCGS participants in my study were asked to profile themselves in relation to current and past career characteristics, singing training and styles, working conditions and habits, voice problems, and beliefs about their voices. They did this by completing a survey questionnaire and their responses to the closed and open question format were analysed using quantitative and qualitative methods outlined later in this chapter.

3.3 Participants

Participants were 102 singers who met two essential criteria: (a) they were gig singers of contemporary, commercial vocal styles (e.g. rock, pop, country, jazz and music theatre, and sub-sets of these styles), and (b) they were performing for at least six hours per week calculated as an annual average. The gender distribution was 59 female and 43 male singers and the age range of participants was 18-61years. Periods engaged in professional performance ranged from 1 – 46years. These PCGS participants were recruited nationally

with responses received from New South Wales (n=9), Victoria (n=19), South Australia (n=4), Queensland (n=64), Northern Territory (n=3), and Western Australia (n=3). All participants were volunteers (N=102). The larger numbers recruited in Queensland reflect my residence in that state and therefore where my networks are strongest. The predominance of Queensland participants may potentially skew the findings to reflect a slightly more local focus, but this is balanced by the participation of 38 participants from the other Australian states with the exception of the Australian Capital Territory which is unrepresented.

3.3.1 Recruitment of participants

There were major difficulties in constructing the sample for this research. First, it was not possible to determine the size of the total population of PCGS in Australia. No specific census data existed for this group, they were not organized into any large professional associations, nor was there any single agency that regularly employed large numbers of PCGS. Literature searches showed that no previous studies had focused specifically on PCGS as a group. Pilot studies for my research had shown there would be great difficulty in achieving very-large sized samples, thus making it unlikely to have numbers suitable for multivariate analyses involving more than a few variables at best. I made the decision to construct the data instrument fully in relation to the key questions of the research and to cast the sampling net as widely as possible through a national distribution.

A second major difficulty was the itinerant nature of PCGS across gig performances. It was problematic to locate and enlist singers face-to-face and this difficulty was exacerbated by their concerns that they might disclose information that could prove to be prejudicial to their career maintenance and development. In an attempt to offset these concerns, and following standard University of Queensland ethics protocols, participants were supplied with an information sheet that included the declaration, *“Your privacy is assured – all*

responses are completely confidential". This information sheet explained that participants' names and contact details would be detached from returned surveys and replaced by numbers for identification purposes. The following assurance was offered: "*Your name will not be used on any reports resulting from the written survey documents.*" Participants were also given an assurance that the present study had been subject to examination and approval from the University's Human Research Ethics Committee in accordance with the National Health and Medical Research Council's guidelines (initially from The University of Queensland B/607/SPA/01/Phd and, after a transfer of candidature, from La Trobe University – FHBC04/18. This ethical clearance was by accepted by Griffith University on final transfer).

In some instances discussion of the ethical assurances of the research, including the protection of anonymity, put prospective participants' fears to rest; in others it did not. In several of the latter instances, any such discussion was cut short because of the restricted off-stage time connected with "live" gig performances, singers' and their managers' anxieties about anonymity, or the combination of both. In all such cases copies of the survey were sent to the performers or left at gig venues but, no further attempt was made to recruit these PCGS and none subsequently forwarded completed surveys.

3.3.2 Recruitment sources

Constructing a sample of the targeted size via a convenience sampling method required two deliberate steps. First, I approached people who could disseminate information about the study to the target population. These were university colleagues, PCGS colleagues, voice teachers (contacted at voice-related conferences and workshops), entertainment agents (identified through industry contacts as specialists in the contemporary commercial music field), entertainment managers (identified through the Australian Music Managers' Directory), and two music theatre companies. To increase the participant pool and to

maximize contact with the PCGS population, a second “general public” approach was made through a media release. This was organized by the University of Queensland Media Department and resulted in my involvement in national radio interviews with ABC National in Hobart, Darwin, Adelaide, and ABC/612 4QR and 4BC Brisbane and the publication of two newspaper articles in *The Courier Mail* and *The West Australian Times*, the leading state newspapers in Queensland and Western Australia respectively. Griffith University’s media department later issued a follow-up press release and this resulted in a major article in the Arts section of *The Australian* newspaper (a national publication) and a live interview on Adelaide (S.A.) radio.

Generally, the recruitment sources clustered into four groups. University colleagues and other voice professional contacts made through my tertiary teaching and conference and workshop presentations comprised the first. The second was formed from my personal contacts in the gig industry, the third from agents, managers and individuals attached to musical theatre touring productions, and the fourth, from PCGS who responded to the media release. Within each group, some contacts agreed either to identify PCGS from their own field of influence and to supply a list of names and contact addresses to my supervisors or me, or to personally distribute a number of surveys. All participants were directed to return the completed surveys to me in the post-paid envelopes supplied.

3.3.3 Response rates

Response rates varied across the different source groups. One group (from Musical Theatre agents and managers etc.) was generally unsuccessful. With one exception, individual managers and agents did not return phone calls or respond to my emails requesting their help. Following contact with the Australian Association of Music Managers (AAMM) I was given permission to distribute 250 surveys via registration packs at their 2002 Annual

Conference and to make a short announcement at the conference regarding my research. Two music theatre companies performing Brisbane-based productions were approached and I received permission to leave up to 20 surveys in the Green Room during the rehearsal period of each of the two productions where PCGS were specifically employed. The media release prompted a small telephone response (N=9); this produced six respondents who met the criteria for inclusion. In association with this, a website was constructed and the survey information sheet, consent form and survey made available to participants who met the eligibility criteria. Six respondents were recruited through the additional method.

PCGS who presented as potential participants and who met the inclusion criteria for the study were supplied with a covering letter, an information sheet about the task, the survey and a consent form (See Appendix 2). The back page of the survey allowed participants to provide optional contact information. A reply-paid addressed envelope was supplied to expedite return of the survey. I am unable to align the returns exactly within the source groups because many individuals returned the completed surveys without reference to the initial method of contact. However, I am able to attribute the majority of responses to the first and second clusters by three means: first, responses to my direct contact with PCGS which was greatly boosted by a flow-on from my initial contacts where one PCGS recruited others amongst their fellow performers; second, my nationally-based university colleagues and other voice professionals provided the names of potential participants and I followed up on these directly; and third, in two instances the sealed responses were returned to me in bulk mail packages by my colleagues.

In summary, a total of 420 survey packages were distributed by mail, personal delivery and downloading from website. 104 were returned and of these 102 met the criteria for inclusion. Return rates from the various sources have been shown in Table 2.

Recruiting source	Group	No of requests	No of participants recruited
University colleagues nationally	1	6	31
PCGS colleagues nationally		8	
My direct contact with PCGS + flow on to others	2	31	59
Agents,	3	6	2
managers		250	2
musical theatre companies		2	2
Media (print/radio)	4	1	6
Total			102

Table 2: Recruiting sources

3.4 Instrument

Russell (1999) described the survey method as a common tool that “permits the evaluation of a large number of variables at one time and is particularly useful in the investigation of voice problems that are multi-factorial, with no clear delineation of causal relationships” (p. 8). This statement has particular relevance to the PCGS population targeted in the present study.

3.4.1 The survey method

The survey method allowed the target group to be contacted in the most effective and inclusive way, given the difficulties inherent in reaching a large and dispersed population. The survey questionnaire was designed to create a profile of PCGS in Australia including participants’ reports of their voice problems and their incidence, voice symptoms and factors known to associate with any reported problems (or postulated to do so), along with descriptive information including gender, age, years performing, styles of performance, hours spent in rehearsal and other occupations, voice use in performance and in additional non-singing related work,

There were no existing published surveys that would provide the content information relevant to the stated aims of this study. Therefore, the survey was developed specifically for the purpose of investigating issues related to the lifestyle and working life of PCGS. The following sub-questions are presuppositions of the central research question, *How might professional contemporary gig singers be accurately described in terms of life-style and performance practice?* Each of these sub-questions formed a core component of the data gathering design (the survey) and were formulated to address the lacunae in the literature through direct investigation of working professionals in the field:

1. What is the training background of PCGS and what relationship does this training have to performance longevity?
2. What range of styles do PCGS sing and how often do they rehearse and perform?
3. Where and under what environmental conditions do PCGS perform?
4. How often are PCGS involved in other employment that adds to their voice load?
5. What are the common voice symptoms experienced by PCGS?
6. Are these symptoms problematic to performance and how do PCGS manage voice problems that do occur?
7. What beliefs do PCGS have with regards to the styles they sing and variables such as training, vocal health and lifestyle?
8. What is the age range and gender distribution of PCGS as a population?

3.4.2 Survey development

The survey was designed to meet the specific aims of this current study. Questions were formed in relation to the specific genre of PCGS and the language related to the field was taken into account. Some areas of the survey (e.g., scale development) were modeled on

other instruments in the literature (Phyland, 1998; Sapir, Mathers-Schmidt, & Larson, 1996; Sataloff, 1984) and adjusted in accord with the needs of this study.

Such changes to these instruments were necessary given the differences in this study's approach. For instance, Sapir et al (1996) and Sataloff (1984) had gathered their data from treatment seeking samples, and their participants at the point of data collection were clinical patients presenting with voice problems. The instrument employed in my study sought to gather data from PCGS who sang collectively or individually across a wide range of contemporary commercial styles and who may or may not have had such problems. Consequently, questions constructed for this study were directed and organized to accommodate singers who may or may not have had training, may or may not have had voice problems, and may or may not have sought treatment in cases where there were problems.

3.4.3 Survey construction

The survey (Appendix X) was titled, “*Research Survey. Voice and Performance – Professional Contemporary Singers*”. The introduction read as follows:

Thank you for participating in this project about voice and performance issues for professional contemporary singers. We hope the results will lead to a better understanding of the needs of contemporary singers in terms of training and voice care.

The survey is about your voice and performance experience. There are sections on singing training, performance conditions, voice problems and voice care, among others. We estimate that the survey will take about 30 minutes to complete, although you do not have to complete it all in one go.

Jackson and Corr's (1998) research on the validity of surveys as a self-report instrument suggests that in order for a survey to be successful three requirements must be met: 1) Participants must be able to read and understand the questions; 2) Participants must have the information required to answer the questions; and 3) Participants must be willing to answer the questions honestly.

To address the first requirement, it was considered important to use colloquial but precise language, specifically, the language of the insider and that language commonly used by PCGS (e.g. "gig", "P.A." etc.). Effective communication, in its widest sense, is dependent on us of the language of the workplace and knowledge of what it includes and excludes. Gee (1991) proposed that language in use is "social language" and that this is "some specific variety of English customized to and for the specific context in which it is being used" (p. 32), while, Clark (1998) noted that each workplace has jargon, which only insiders will comprehend.

The second requirement was met by the inclusion of open format questions that encouraged respondents to report autobiographical information in framing responses. Finally, as all participants would be volunteers it was anticipated that they would have an interest in responding to questions honestly from their personal experience. To encourage participants to answer the questions honestly, the accompanying information sheet included the following organizing statement: "*We want you to tell us about your experience as a professional singer*". Additionally, the front page of the survey included a similar framing device: "*Please answer all questions as completely as you can. If there's a question that does not really apply to you, please specify this on the survey.*"

3.4.4 Development of sections

The survey instrument was composed of ten sections and each section contained a varying number of questions. Sections 1-5 and 9-10 presented predominantly closed format questions (for example: likert scales, number of years and yes/no). Sections 6-8 presented a range of closed and open format questions.

3.4.4.1 Section 1- History and training

This section of the survey was concerned with the backgrounds of participants as follows:

Question 1 (Performance history) was developed in response to the absence of reports in the literature about the career longevity of PCGS. In order to investigate later questions such as the incidence of voice problems, it was considered important to elicit data about the intensity and duration of each participant's professional career. Components (a) and (b) asked about the age of "*first public performance*", and the age of "*first paid performance*". Components (c) ("*Have you sung pretty much continuously since?*") and (d) ("*What has been the longest break from singing professionally?*") were designed to check issues of PCGS career longevity and whether interruptions had occurred.

Question 2 (Singing Training) was designed to investigate participants' training backgrounds. It offered a number of component questions, for example: (a) "*Have you had singing lessons?*". The remaining components in this section sought details about: the duration of lessons and whether the singing training was classical and/or contemporary (b and c); the participant's estimation of the relevance of any previous singing training to their current work (d); the number of lessons taken before their first professional performance, how many singing teachers they had and the style that these teachers sang (e-g); if they were

engaged in singing lessons currently and, if so the frequency of these lessons (h and i). A 5-point scale from 1 (very relevant) to 5 (not very relevant) was used to organize responses.

3.4.4.2 Section 2 - Performing style – current and past

As reported in Chapter 2, Phyland (1998) included contemporary commercial singers in her study, but excluded singers who had sung Pop, Country and Western, light or heavy Rock for more than 10% of their total singing time over the previous 12 months. Importantly, these styles and their associated sub-styles are the core business of the CCM industry (LoVetri, 2002) and constitute the main body of repertoire for many singers in the field. For this reason, it was decided that any relevant investigation of PCGS should account for the full range of contemporary commercial styles. A list of seven mainstream styles were offered: these were pop, rock, country, jazz, dance/funk and R&B. Classical was also offered in the list so that any crossover singing could be identified and provision was made for participants to identify styles other than those indicated in the survey.

Questions 3 and 4 in Section 2 were designed to obtain information about participants' current practices as well as past history of performance styles. Question 5 investigated "how experienced" participants felt in each of the listed CCM styles. In order to compare a participant's style preference(s) with performance style habits, Question 6 was added in free text format - "*Which styles do you prefer to sing?*"

3.4.4.3 Section 3 - Gigs and venues – current and past

The next section included questions about participants' "normal" performance conditions and habits in more specific detail (Questions 7 to 13). Components (a) – (c) of Question 7 sought data on of the number of actual performances per week and the hours involved in any one professional gig call, including setting up and breaking down gear.

Component (d) sought to identify the percentage of time participants spent singing lead and/or backup vocals. Component (e) addressed the issue of whether other instruments were played while singing and how often this occurred. This information was sought in order to highlight any linkage of style with following questions about the types of venues where the participant performed currently and in the past (Q.9 and Q.10), the participant's habits and behaviour during and after a gig (Q.11 - Q.13) and the incidence of voice problems (Q. 20 and Q. 21).

3.4.4.4 *Section 4 - Equipment*

This section sought details regarding a participant's knowledge about and use of amplification, fold-back monitors and microphones (Q.14 a-g). Question 15 (a)-(e) asked whether or not the participant owned a microphone and where this was the case, probed the basis upon which particular equipment was chosen. The reason for seeking such data is that mismatching of microphone to voice type and style of performance may impact on voice symptoms such as fatigue.

3.4.4.5 *Section 5 - Rehearsals and other work*

In ascertaining the total voice use of professional PCGS, it was important to consider not just performance time (as in responses to Questions 7 and 8 for example) but also time spent in rehearsal and in "other work". Question 16 (a)-(f) asked about rehearsal habits and allowed participants to choose their own timing response, such as "x times per year", "x times per month", or "x times per week". Responses to Questions 16 (a), (c) and (e) were subsequently recalculated to a common timing denominator (average per year). From this it was then possible to calculate total time spent in rehearsal (using Q.16b, d and f). To further ensure that questions about rehearsals and rehearsal time captured a singer's individual

experience, an open format question was included (Q16 (h): “*Please add comments [about rehearsals] here*”).

Question 17 (a)-(c) asked participants if they were employed in work other than singing. Where this was the case, they were asked to describe this other work and to nominate how many hours per week it occupied. Question 17(d)-(f) investigated levels of noise in such other workplaces and whether, in the participant’s experience, voice use in these environments might impact on voice load generally (e.g., “*How often do you need to speak more loudly*”).

3.4.4.6 Section 6 - Voice problems

Reports in the literature suggest that professional voice users have a higher prevalence of voice problems than other groups in the general population (Fritzell, 1996; Titze, et al., 1997; Verdolini & Ramig, 2001). Furthermore, in these reports singers are described as a sub-set of professional voice users who are at greatest risk of developing occupational voice disorders. It is difficult to know if this is a reliable assertion as epidemiological studies of voice problems in the general population are rare and do not provide adequate comparative data (Russell, 1999). Studies of the prevalence of voice problems for singers are also rare. Those few studies that do exist are predominantly based on singers from outside the PCGS field, or if CCM singers are included, the researchers have excluded the most commonly sung CCM styles and have reported mostly on small laboratory-based studies and/or treatment-seeking cohorts. It is impossible to determine the extent of significance of voice disorders for the PCGS population unless factors that contribute to the development of occupational disorders are recognized and understood. The present study aims to provide data concerning these factors.

The frequency of voice symptoms in PCGS is currently undocumented, however several authoritative texts containing patient report proformas relevant to singers (for example, the patient surveys in Phyland, 1998; Sapir, et al., 1996; Sataloff, 1997) were consulted in the construction of Question 18 (a-o) “*Voice Symptoms – last 12 months*”. Some additional symptoms were included in the list in response to comments made by the participants of the pilot instrument and an open ended question (18p): “*If some symptoms affected your performance, which ones had the most impact on your ability to perform?*” allowed a comparison of the symptoms reported most frequently with those symptoms reported to have the most impact on performance.

Question 19 offered a list of generic titles for voice professionals (e.g., Singing Teacher, Ear Nose and Throat Specialist, General Practitioner, Speech Pathologist). Participants were asked to indicate if they had consulted any members of this list for “*voice problems*” in “*the last 12 months*”. A time period was specified so that “recent” rather than “ever” treatment-seeking behaviour could be described. Boxed alternatives under each component of Q19 (a)–(f) were coded according to whether any reported treatment had been effective. The open format of Question 19(g): “*What other kind of help did you seek...not covered by the professionals above?*” allowed participants to name health practitioners other than those listed in Q19 (a-f).

Career prevalence and worst-case scenarios for the sample were framed in Q20 (a): “*What is the worst voice problem you have experienced in your career?*” This question allowed participants to respond in free-text format, followed by a rating scale in response to Q20 (b), “*How did this worst voice problem affect your performance*”. The rating scale for Q20(b) was obtained from a previously published report (Winslow, Winslow, & Wax, 2001) where patients who had undergone neck surgery provided symptom-frequency ratings, but

also rated the impact of symptoms on their recovery using an 11-point scale. This “impact” rating scale was considered a useful single-question way to assess the effects of a reported voice problem.

Question 21 (a) asked participants about the frequency of past voice problems. To measure the impact of any recurring problems on PCGS’ performance Q21 (b) “*Altogether, how did these voice problems in the past affect your performance?*” was offered along with a rating scale format for responses. Whether or not voice problems resulted in PCGS changing their performance style, was investigated in Q21 (c), where responses were linked with those from Q3 (*How often do you sing the following styles now?*), Q4 (*How often did you sing these styles in the past?*) and Q 23 (a) and (b) (*Do you think contemporary styles are more vocally damaging than others? If yes which do you think are the more damaging styles*). A prevalence question [Q21 (d)] was framed to assess participants’ current voice symptoms (Q18) with respect to the frequency of symptoms they had reported. Many reports of vocal symptoms simply reflect a snapshot in time (symptoms reported at the time of surveying, i.e., a prevalence report). However, I also wanted to know whether the picture of symptoms had changed over time – Q21 (d): “*Which of the following statements is the most true for you?-... symptoms...have improved in the last 12 months; have been worse...; ...have not really changed...*”. Question 22 (a-e) asked participants to rate a list of factors that they believed contributed to voice problems they had experienced. Participants were offered an additional open-ended question (f) to investigate *any other factors you feel might have contributed to voice problems*.

3.4.4.7 Section 7 - Beliefs about voice problems in general

Question 23 (a-c) explored participants' beliefs about whether some styles were more vocally damaging than others. Rating scales (a & c) were supported by open-ended components and these yielded information about PCGS' predominant beliefs concerning their voice problems and attributions of cause. Such information may provide voice professionals who work with PCGS a basis for further directed research. Conceivably, it might also underpin strategic plans for eventual development of style-based vocal health and longevity regimes.

Question 24 (b and c) sought to investigate the degree to which participants were concerned about their vocal health. Data gathered from participants' responses to this question may help to inform voice professionals' approach to treatment plans for PCGS.

A discreet sub-section of Section 7 asked participants about their experience of vocal fatigue. This voice problem is generally recognized as an occupational hazard for professional voice users (Kitch & Oates, 1994; Koufman, 1988; Sataloff, 1997; Scherer, et al., 1991), but the degree to which PCGS are predisposed to vocal fatigue is currently unknown. To elicit specific, self-report information, Question 25 (a-d) asked participants to rate (a) "*How often*" they experienced vocal fatigue, (b) to describe any "*particular timeframe*" for this experience, (c) "*how long*" it took for recovery and (d) to what degree any such fatigue "*affects your performance*". These questions were important in terms of my interest in linkages between vocal fatigue and lack of training, age, performance style, performance venues and the additional voice load associated with rehearsals and other work

Question 25 (e) asked participants to describe "*how your voice sounds when it is fatigued*", so that responses could be measured against previous responses to the symptom table offered as Q18 "*Voice Symptoms last 12 months*". The lack of any documented reports

on how PCGS managed vocal fatigue prompted the inclusion of Question 25 (f) “*What works best to alleviate vocal fatigue...*” I was interested to see if any self-described remedies were linked to voice training (Q2), or to seeking help from voice professionals (Q19).

3.4.4.8 Section 8 - Preventing voice problems

Similar to those questions in the previous section, participants were asked about specific strategies for prevention of voice problems: “*How often do you do each of the following to try to prevent voice problems?*” (Q26). A frequency rating scale as well as an open format question (Q26n) was used in the event that options 26(a) - (m) had not covered all possibilities.

3.4.4.9 Section 9 - Enjoyment

Question 27 asked participants to rate their current level of enjoyment for their performance life on a 5-point rating scale (*not much to a great deal*). Component (b) of the question focussed on relative enjoyment across time: that is, enjoyment of performing now being *more/less/unchanged* than in the past. Any differential categorisation of relative enjoyment could then be tested for possible connection with data for other issues, notably regarding incidence of voice symptoms (Q18), vocal fatigue (Q25), and beliefs about voice problems (Q23).

3.4.4.10 Section 10 - A bit about you

This question (Q.28a-c) sought biographical information such as the participant’s age, gender and general health. Question 28 (d) and 28 (e) investigated participants’ smoking habits and any regular medication, respectively. Question 28 (e) focused on particular regular medications where this related to vocal health. Participants’ responses to the various subsections of Question 28 (d-e) were sought to check whether differentiation occurred and if

so, whether any such categorisation was associated with their earlier reports of age, gender and general health (Q.28a-c), voice symptoms (Q.18) and vocal fatigue (Q.25a-f).

Participants were requested to enter their contact details on the back page of the survey, which was marked “Strictly Confidential.” The following information was supplied to participants as a header to the Contact details page:

Strictly Confidential

THIS PAGE TO BE DETACHED FOLLOWING RECEIPT OF SURVEY

We would like to stay in touch with you to keep you informed about the results of the project, and also to contact you if we need to clarify any of the survey details.

We assure you that all of the information you have provided will remain completely confidential. When we receive your survey, this contact sheet will be detached and all information will be coded by number, not your name. When we report the results, only group results will be provided.

At the bottom of this page, participants were given the opportunity to add further comments:

COMMENTS

We welcome any further comments you have about any aspect of the project, or any feedback you have about the survey. If space is not sufficient, please add a separate sheet.”

3.4.5 Rating scale development

Five-response category Likert rating scales were used to frame response choices for most rating scale questions. In some questions a descriptor accompanied each item in the rating scale (e.g., Questions 3 and 4, in which 1 = hardly ever, or never; 2 = not very often; 3 = sometimes; 4 = often; 5 = all the time, or nearly). This type of frequency scale applied to Questions 3, 4, 9, 10-15, 17, 18, 21, 25 and 26.

It has been reported that participants in research studies use the extremes of rating scales infrequently (Cox, 1980; Garland, 1991). I attempted to decrease the likelihood of this trend by softening the categorical “always” or “never” with conditional language, in order to gain a range of responses. Consequently, extremes on the rating scales were worded to include the “idea” of an extreme (such as: always or nearly always, hardly any, *usually* not very well, etc.).

3.4.6 Follow-up procedures

Where necessary, follow-up procedures to encourage completion and submission of the survey were conducted by telephone and email three weeks after the survey had been mailed out. Emails to artists’ managers and agents were often ignored and phone calls unreturned. Many people enlisted to assist in recruiting participants were contacted and asked to send out reminders personally or to pass their list of survey recipients back to me for follow up. The four speech pathologists involved in distribution of the surveys were not able to pass on their recipient list because of privacy codes, so it was necessary to trust that they would contact their targeted recipients as a reminder to complete the survey.

3.5 Piloting the instrument

Prior to wide distribution of the survey, a pilot investigation was undertaken to determine the adequacy of the instrument in terms of the specified aims of the study, clarity and relevance of questions, time required and ease of completion. Three PCGS were approached and agreed to complete a draft copy of the survey. In consultation with my supervisors and music industry contacts, it was decided that these singers met the criteria for inclusion in the study and could be considered to be representative of the PCGS population in Australia. Two were working 3-4 gigs per week on a yearly average. They were performing a range of CCM styles including Pop, Rock, R&B and Funk/Dance across a wide range of venues and environmental conditions. Two reported an occasional involvement in recording studio, session work. The third PCGS was working 2-3 gigs per week on a yearly average singing Pop, Jazz and Music Theatre repertoire at corporate and special events and was active as a worship leader at a major evangelical church. This involved lead singing at services at least 3 times per week in addition to organizing and leading rehearsal for a group of back-up singers.

In addition to their performance careers, all three PCGS in this pilot investigation worked in full daytime occupations. One had a highly successful private voice studio with 70+ clients, another was a high school teacher with both classroom and music director responsibilities. The third was a secretary/receptionist at a high profile law firm. All three participants were identified and recruited through my direct contact with them as fellow PCGS.

3.5.1 Pilot procedure

The multi-part, 28-item survey provided in Appendix A resulted from the pilot study. The three participants in the pilot study informed changes in the draft. One participant completed the survey in my presence and was able to ask questions and comment on matters of ambiguity and relevance as the need arose. The other two completed the survey independently, and then met with me to discuss any questions that they considered to be unclear, ambiguous, or irrelevant. Layout and formatting were also discussed and all comments regarding the draft were immediately noted and were used to inform the preparation of the final survey.

Additional questions were added to four sections of the instrument to allow responses to describe activities “in the past” as well as “current”. Descriptor words were added to each scale to elicit a more exact response, and open-ended questions were added to some sections. As a consequence of the pilot, the survey instrument was reorganized resulting in the final draft of ten major sections (some with sub-sections) as shown in Table 3.

Major Sections	Sub-sections
Performance and training history	
Performing styles-current and past	
Gigs and venues-current and past	Between sets-now and past/after the gig
Equipment	Amplification/microphone use
Rehearsals and other work	
Voice problems-current and past	Symptoms, seeking help, worst problem, contributing factors
Beliefs about voice problems in general	Recognizing damaging situations and level of worry about vocal health, vocal fatigue
Preventing voice problems	
Enjoyment	
A bit about you	

Table 3: Final structure of Survey - Ten major sections

3.6 Data Analysis

Two types of data were gathered via the survey. Quantitative data were provided in response to 206 points across the 28 items. One hundred and nine of these points offered choices, responses to which were provided on a 5-point Likert scale. The other 97 were either categorical or required incidence data to be entered directly by a participant. These data were recorded and stored in a Microsoft Excel document for descriptive and interpretive analyses.

3.6.1 A mixed model approach

In this study mixed-methods refers to the collection, analysis, mixing, and drawing of inferences from both quantitative and qualitative data in a single inquiry (Creswell & Plano Clark, 2007). Reichardt and Rallis (1994) argue that in spite of the significant differences between the research traditions, the two paradigms can reconcile. They point to commonalities in fundamental values, including belief in the value of inquiry, belief in the

theory of facts, belief that reality is multiple and constructed, belief in the fallibility of knowledge, and belief in the under-determination of theory by fact.

Considerable research has been undertaken that combines quantitative and qualitative methods (J. C. Greene, Caracelli, & Graham, 1989; R. B. Johnson & Onwuegbuzie, 2004) and several authors advocate that mixed-methods research should be acknowledged as a third research method (Morse, 2003). Johnson and Turner (2003) proposed that researchers should collect multiple data using different strategies, approaches, and methods to produce research outcomes with “complementary strengths and nonoverlapping weaknesses” (p. 299).

The opinion of Walsh, Tobin and Graue (1993) that, “as researchers, we have measured people, but we have not listened to them” (p. 465) resounded with me. As evidenced by reports in the literature, research about singers of CCM styles has been almost exclusively etic and has not explored the relationship between singers’ beliefs and practices from “within”. I did not want the participants in my inquiry to be positioned as objects to be studied in the positivist sense (B. J. Bartlett, 2008; Zuber-Skerritt, 2008). Rather, I was interested in uncovering the emic perspective, and in so doing, advancing knowledge in an otherwise under-researched field.

A multi-method approach was used to facilitate understanding and description to accompany quantitative treatment of data (Patton, 1990). Flick (1998) as cited in Denzin & Lincoln (2003) noted that multi-method approaches reflect “an attempt to secure an in-depth understanding of the phenomena in question”, and present “a strategy that adds rigor, breadth, complexity, richness, and depth to any inquiry” (p. 8). I drew from my own experiences and those of singers in the pilot study to design an approach likely to best capture data that PCGS

would want listened to while simultaneously providing the quantitative basis for generalisation within the limitations of the study.

3.6.2 Quantitative data

The quantitative data were analyzed using descriptive statistical procedures from the Statistical Package for the Social Sciences (SPSS, Versions 14.0, 2005; 15.0, 2007; 16.0, 2009; 18.0, 2010). These data provided descriptions of the personal characteristics of individuals in the sample, and identified significant associations between aspects of their professional histories and their voice problems.

More specifically, descriptive analyses provided frequencies, range, mean and standard deviation for data pertaining to:

1. the age range and gender distribution for the PCGS population.
2. PCGS' venue and performance environments
3. the range of styles performed by PCGS
4. the relevance of PCGS' training backgrounds to performance longevity, and implications for vocal health
5. the impact of "other than performance" employment on PCGS' overall voice load,
6. the incidence of common voice symptoms for PCGS
7. the incidence of voice problems for PCGS
8. PCGS' management of voice problems

While frequencies yielded information about the extent of the problems of prevalence within the sample, they did not describe associated factors from the viewpoints of the PCGS who provided the data. Accordingly, exploratory factor analysis was used to identify patterns of responses in variables that were considered to have contributed to the development of

those problems. Also, multivariate analysis of variance (MANOVA) was used to determine the extent to which items or groupings of items predicted voice problems. The analysis generated information on the significance of associations between the following variables:

1. Training and prevalence of voice problems
2. Performance style and prevalence of voice problems
3. “Other work” and prevalence of voice problems
4. Prevalence of fatigue and its impact on performance
5. PCGS management of voice problems
6. Incidence and impact of fatigue
7. Factors in #1-6 in relation to the sustainability of PCGS’ careers

3.6.3 Qualitative data

Data were collected from 26 points of interest across the 28 survey items. Nine of these were added by participants as expansionary comments in addition to the provision for comment that had been included in 17 of the survey items. This element of design attempted to capture participants’ extended views or commentary on issues beyond what had been indicated in their collective responses to closed-choice items. These data were transcribed onto Microsoft Word 5.0 files and stored for content and trend analysis.

Qualitative content analysis moves further into the domain of interpretation than quantitative content analysis in that there is an effort to understand not only the manifest (e.g., frequencies and means), but also the latent content of data (Sandelowski, 2000, p. 338). The thematic component of the qualitative analysis involved coding the data according to significant threads in individual and group commentaries across those points. The codes were then organised into overarching themes using a “grounded method” of inductive qualitative analysis (see Glasser, 1978; Nuthall, 2004). Transcript excerpts were tabulated according to

these themes, so that significant words, concepts, phrases or sentences could be compared across participants and contextualised within the overall statements of the participants. These themes were then crosschecked with the generalizations, concepts or hypotheses emerging in the quantitative data analysis of the related questions. Based on these recurring instances of contextualised meaning, I arrived at the generalizations outlined in Chapter 5.

Participants' responses to open-ended questions were transcribed directly into an Excel document with the questions posted in columns and individual participants in rows. This document was then read repeatedly so that each iteration contributed to a cumulative clustering of similar content items. As part of this process, units of language were printed onto a spreadsheet and colour coded to reflect themes across the emerging clusters. For example, clustering of comments made to Question 23 (*Do you believe that singers are more prone to vocal damage than other groups?*) are shown in the frame (Table 4) below to reflect the two emergent themes, *Frequency of voice-use only*, and, *Frequency of voice use + (plus other variable/s)*:

Frequency of voice use (FoVU)	FoVU + smoke	FoVU +vocal volume	FoVU +general gig environment	FoVU + gig behaviour	FoVU + style
Because they are using their vocal chords generally more. #12	Using voice for longer than non-vocalists and having to be in potentially damaging rooms for work – smoky closed in spaces. #11	Using the voice at high output levels for any length of time no matter how slight is damaging. #17	Really depends on venue and ventilation. #28	Smoking, drinking and yelling over loud music. #35	More vocal use in general makes singers more prone to damage as well we use our voice in an array of styles. #55
Anyone using their voice for singing or talking is putting more strain on those muscles – like an athlete is more likely to pull and strain a muscle than someone who isn't an athlete. #27	I think people who speak or have to yell, all day or smoke excessively, or work in smoky environments are just prone. #23	Most damaged voices I have seen have been from speech – too loud, forced etc.	We work in unhealthy environments. #47	Constantly breathing in smoke, temperature extremes, talking above DJ etc during breaks. #37	
Use more voice, more problems. #53	Singers are using their voices more than others and in different ways to others and often in unhealthy smoky environments. #24		I think it really depends on the environment and the job. Yelling and talking loudly are more damaging than singing. #57		
	Singers who smoke, or constantly sing in smoky environments could be susceptible, but in general NO. #56				

Table 4: Frequency of voice-use only, and, Frequency of voice use + (plus other variable/s)

Similarly, clusters of meaning were found in the participant's response to the other questions (for example: responses to Q.17 and Q.18). These will be reported in Chapter 4.

3.7 Summary

Data collected and analysed as described in this chapter were used to address outcomes relating to the aims of this research and specifically to address the central research objective that guided the study, namely, to present a detailed evidence-based profile of the professional contemporary gig singer in the Australian context, with particular regard to issues of training and experience, vocal health and professional longevity, and professional attitudes. Qualitative data that support the exposition are provided in Chapter 5.

4 Results 1 and Discussion

4.1 Introduction

This is the first study to attempt to profile Professional Contemporary Gig Singers (PCGS) as a population. Through the self-reports of 102 Australian-based PCGS I sought to identify what a population of CCM singers say about themselves and their lived experiences. The decision to conduct this inquiry was grounded partly in my own experiences as one such singer, but mostly driven by interactions with fellow performers and PCGS students and in some part, the frustrations of reading a literature dominated by etic commentary. My story is linked inextricably with the participants' stories of their performance lives. As outlined in the previous chapter, the self-report instrument was designed to allow a descriptive profile to be constructed about PCGS in the Australian context and to investigate the prevalence of voice problems in this population of singers. The data it provided are reported here in the context of the three primary aims of the research, namely:

- 1) *To describe the sample of singers in terms of their age and gender, performance histories, training, singing styles, and environments within which they work;*
- 2) *To describe the singers' reported experience of voice problems; and,*
- 3) *To examine the relationships between the extent of training, performance habits and lifestyle elements of this group of singers and their reported experience of voice problems.*

This chapter presents the quantitative findings of the study. Statistical tests were applied to describe the participants as a group and to measure the significance of any apparent relation between key variables. The output and my discussion and conclusions are as follows:

- Age and gender

Ages of the 102 participants ranged from 19 to 61 years. About 69% were aged between 24 and 39 years. The mean age across the group was 33.2 years with a standard deviation *s.d.* 10 years. The mean age for men in the sample was 33.9 years and for women, 32.7 years. This difference in age was not statistically significant ($F_{(1,100)} = 0.378, p > 0.05$).

- Performance history.

PCGS described their performance histories in terms of three age markers - their ages at their first public performance, and first paid performance, and, the continuity of performance across their careers as follows:

- i. Age at first public performance - Most PCGS first sang in public at an early age. The mean was 12 years (*s.d.* 5.12 years) ranging across 2 - 25 years, with 85% at the age of 16 or younger. On average, females first sang at the age of 11.7 years and males at 12.6 years. This difference was not significant ($F_{(1, 99)} = 0.844, p > 0.05$).
- ii. Age at first paid performance - Most PCGS reported their first paid performance was also at an early age. Their data ranged from 6-32 years of age, overlapping that of their first public performance (2-25 years). On average, participants were approximately 18 years old (*s.d.* 4.33) at their first paid singing performance. For 85% of them it occurred at or below 23 years of age. Females most typically had their first paid performance at the age of 18.7 years and males at the age of 18 years. Again, this difference was not significant ($F_{(1, 98)} = 0.590, p > 0.05$).
- iii. Continuity of performance across career - Whereas age was accounted for directly in questions put to PCGS to determine their first public and first paid performances (How old were you at the time of your first public/paid performance?), it was not requested directly in the associated question on

longevity (Q.1c). Participants responded via a rating scale (mostly continuously, somewhat continuously, longish breaks from singing). Seventy-nine participants reported they had been performing continuously since their first paid performances, 17 reported singing somewhat continuously and six reported they had taken “longish” breaks since their first paid performance (Table 5).

Continuity of Professional Singing Career	Participants
Continuously since first paid performance	79
Somewhat continuously, but with breaks	17
Longish breaks since first paid performance	6
TOTAL	102

Table 5: Continuity of performance across career

As indicated in Figure 1, a majority reported having been singing *mostly continuously* (77.5%) or *somewhat continuously* (16.6%) since their first paid performance. Very few (5.9%) had taken *longish breaks* since the start of their professional careers. On average, participants reported 9 months as their longest break (*s.d.*=14.41) with 96 months as the longest reported break for this sub-group. Examination via the Kruskal-Wallis (1952) test of gender and age differences indicated that older participants were marginally more likely to have taken longer breaks than their younger peers. However, this was not significantly different ($X^2_{(1)} = 3.353, p > .10$).

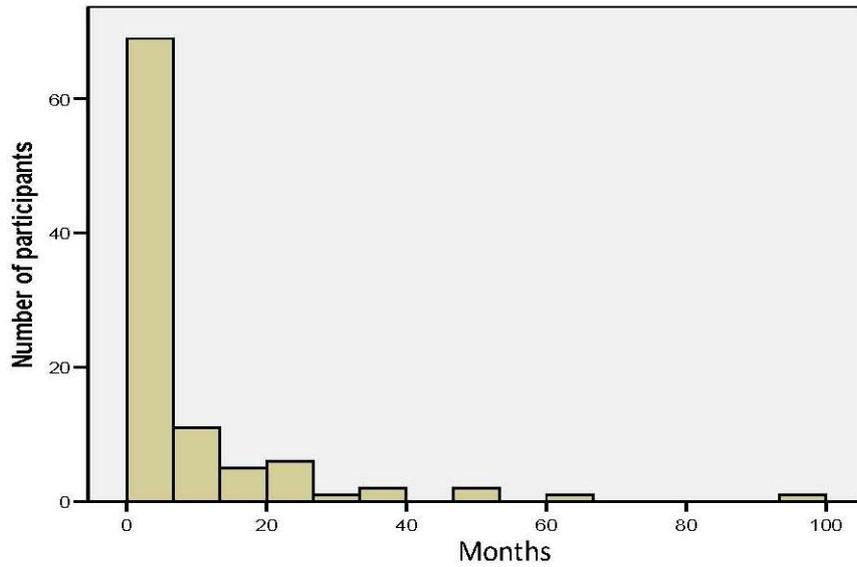


Figure 1: Longest break from professional singing (months)

4.1.1.1 Training for singing

All 102 participants addressed the question of training. Twenty-eight said they had no training at all. All others had some, though 16 indicated their involvement did not stretch to description in “years” and for 9 of them, very few lessons (1 to 9) were involved. Distribution of the length of training is shown in Table 6:

Years during which training occurred	Participants
0	28
Less than 1 year	16
1	9
2	6
3	6
4	7
5	6
6	2
7	7
8	1
10	3
11	5
12	1
13	1
15	4
Total	74

Table 6: Participants’ training

More than half of those who participated in the study (n=58) had substantial training histories. Forty-four had been training for 1-8 years. Ten participants had done so for 10 –14 years, and 4 had 15 years of training.

4.1.1.2 Training Styles

The 74 participants who had training fell into four subgroups in relation to the styles they had studied. The largest sub-groups comprised those whose training included a combination of both classical and contemporary styles (n₁= 27), and, those who trained only in contemporary style (n₂=26). A third sub-group (n₃=9; 8.8%) had only classical training. A fourth (n₄=12) did not specify style (see Table 7).

Singing Training	1 year or more	Less than 1 year	None at all	Total
n ₁ Both Contemporary and classical	26	1	-	27
n ₂ Contemporary only	22	4	-	26
n ₃ Classical only	7	2	-	9
n ₄ Yes, but no style indicated	3	9	-	12
No training at all	N/A	N/A	28	28
TOTAL	58	16	29	102

Table 7: Duration and style of training for singing

As illustrated in Table 7, training for participants in each of the first three subgroups had mostly occurred over periods of one year or more. In contrast, most who had not specified a style were among the 16 participants who had reported training of less than one year.

For the 62 participants who responded to questions of duration (Q2b) and style (Q2c), the mean time for those who received classical training (n=35 – inclusive of classical only and combination contemporary/classical) was 3.8 years (*s.d.* 3.26 years), and for those who received contemporary training (n=53 – inclusive of contemporary only and combination

contemporary/classical) it was 4.1 years (*s.d.*3.51 years). This indicates that these participants spent more time on average training in contemporary style than they did in classical. My study did not seek to investigate the teachers' pedagogical backgrounds but Question 2(g) did investigate what styles these teachers sang. Of the 53 participants who claimed contemporary training 43 said that their teacher sang contemporary styles. No information was collected regarding the teachers' experience across the range of CCM styles or the frequency or extent of their performance practice.

One research paper found that singing voice teachers may claim to teach contemporary style and technique but have no specific pedagogical training in the field (LoVetri & Weekly, 2003). Further research might investigate linkages between CCM singers' development of vocal health issues and the lack of CCM style experience on the part of teachers. Such research would add empirical data to recent expert opinion that the application of classical style technique to CCM vocal production is inefficient if not detrimental to singers' vocal health (I. Bartlett, 2010; Edwin, 2000; LoVetri, 2002; Wells, 2006).

4.1.1.3 Training and gender

From the data it was possible to determine whether there were differences in the type of training received by male and female respondents. As shown in Figure 2, both males and females claimed more training in contemporary style but females received significantly more training than males in both styles (classical: $F_{(1,96)} = 6.831$, $p < 0.05$) (contemporary: $F_{(1,96)} = 14.161$, $p < 0.001$); i.e., classical training of 1.9 years and contemporary training of 3.3 years for females contrasted with 0.5 years, 0.9 years respectively for males.

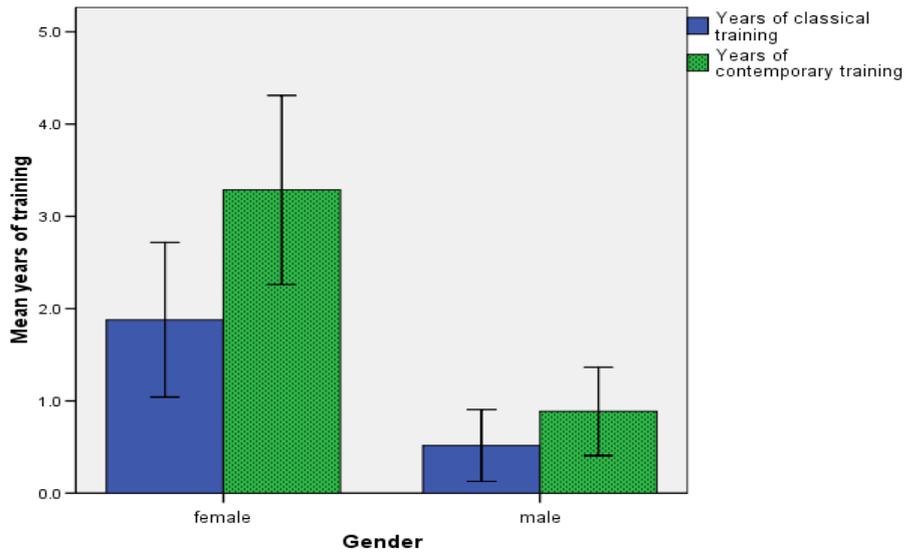


Figure 2: Years of classical and contemporary training by gender

4.1.1.4 Training and age relationships

The age of participants correlated negatively and significantly with the number of years of training, both in classical (Spearman's $Rho = -0.246$, $N = 98$, $p < .05$) and contemporary styles (Spearman's $Rho = -0.312$, $N = 98$, $p < .01$). That is, the older the participants, the less likely they were to report having had either classical or contemporary training. Spearman's Rho , a form of correlation appropriate for use with these categorical data, was used to test the strength of these relationships.

4.2 Styles of singing performance

Data from this component of the research were derived from participants' descriptions of their current performance styles, those that they had sung in the past, and their levels of experience with each style.

4.2.1 Current performance styles

Participants indicated frequencies of their current performance styles using Likert scale response categories (hardly ever to all the time). Table 4 summarizes participants' responses concerning the incidence of their current singing across a range of styles, and represents the number and percentage of participants responding to the composite ratings of often or nearly all the time for each of the seven listed styles. In addition to the listed styles, participants were invited to enter any other styles they performed and to rate these additions using the categories provided. More than 50% of the 102 participants reported singing Pop (80.4%) and Rock (61.8%) often or nearly all the time. Less than 50% reported singing Dance/Funk (40%), R&B (32%), Jazz (28%) and Country (15%) often or nearly all the time. Only 10.7% of participants sang in classical styles rating their responses in the lower end of the scale sometimes or hardly ever (Table 8).

Range of singing styles performed by PCGS	Performing currently (N=102)	Percentage (N=102)
Pop	82	80.4
Rock	63	61.8
Country	15	14.7
Jazz	28	27.5
Classical	11	10.7
Funk/Dance	41	40.2
R&B	33	32.4
Other (Gospel/Irish/Punk/Metal/Alternative/Folk/World/Cabaret/Originals /Latin/Music Theatre)	17	16.6

Table 8: Participants' range of singing styles

Numbers in the *performing currently* column total more than 102 as many participants selected multiple styles rather than individual ones when responding to the list of styles presented. The multi-categorical response indicates that PCGS in the sample were most often singing a varying range of styles in their gig performances. This result is consistent with reports in the literature. For example, Titze et al (1997) addressed the multilateral nature in what singers nominated as their most commonly sung styles and they noted the difficulty in categorising singers by one particular style when they were commonly engaged in multi-style performances: “Further breakdown into country, rock, gospel, jazz or blues singers is difficult because many of the latter professional singers fit into multiple categories” (p. 258).

Figure 3 illustrates the frequency with which participants currently perform one or more styles *all the time*. Thirty-three percent of participants reported regularly singing one style *all the time* and a further 33% reported singing combinations of at least two of the listed styles in their gig performances *all the time*. Another 10% reported performing three styles *all the time*. That is, 76% of participants reported that between one and three styles featured in their performances at all times. A further 20% of participants claimed not to perform any one style *all the time*, reporting a range of styles performed *sometimes or often*.

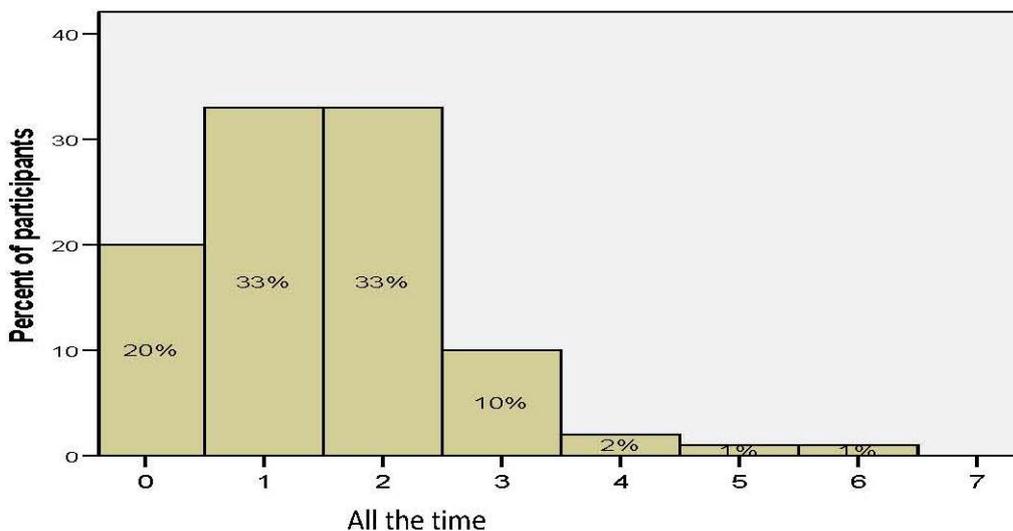


Figure 3: Percentage of participants performing one or more of the current styles all the time

4.2.1.1 Current performance styles and gender

In their current gig performances, both male and female participants generally were singing across a range of styles all of the time ($X^2_{(6)} 4.794, p>.05$), with heavy representation in Pop and little representation in Classical. However, variation occurs elsewhere amongst the contemporary styles, notably with females singing more in Dance/Funk, R&B and Jazz and males singing more in Rock and Country. As illustrated in Figure 4, females (54%) and males (54%) both were very likely to report that they sang Pop style all the time. Males were also very likely to say that they were singing Rock (56%) style all the time.

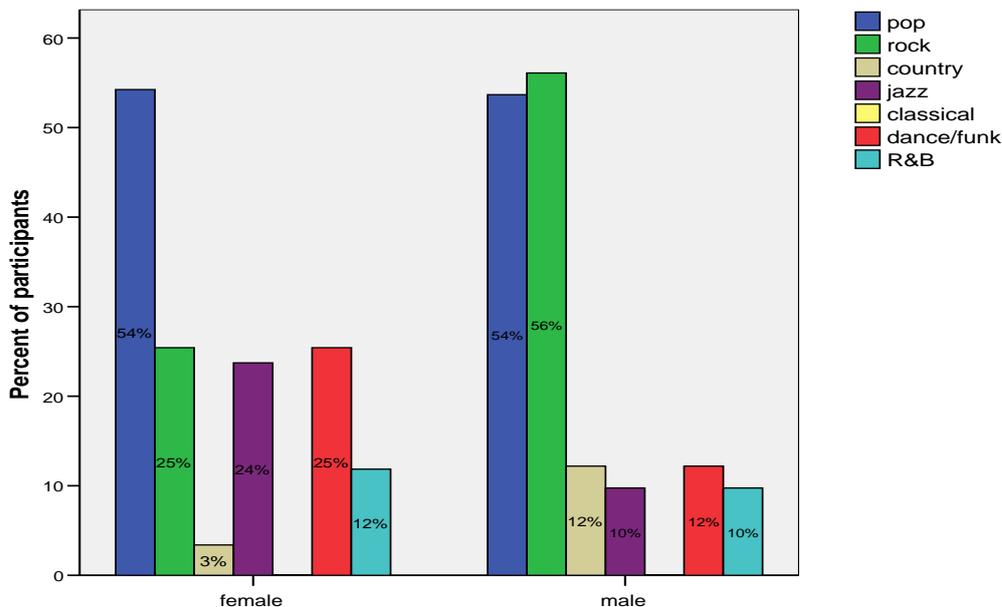


Figure 4: Current performance styles sung by males vs. females “all the time”

4.2.1.2 Styles sung in the past

Participants were asked to indicate which styles they had performed in the past. In addition to the seven listed styles (Pop, Rock, Country, Jazz, Classical, Dance/Funk, R&B) they were invited to enter other styles performed and all were rated using the response categories on the Likert scale provided.

The participants reported a greater range of styles for their current performances than for past ones. As shown in Table 9, most reported singing Pop (82%) and Rock (63%) *nearly*

all the time in the past while fewer reported Dance/Funk (41%), R&B (33%), Jazz (28%) and Country (15%) in the same range (*often* or *nearly all the time*). Eleven of the participants reported singing classical styles but rated the frequency at the lower end of the scale (*sometimes* or *hardly ever*).

Singing styles	Number	Percentage
Pop	63	82
Rock	52	63
Funk/Dance	23	41
R&B	30	33
Jazz	30	28
Other*	14	17
Country	14	15
Classical	8	11

Table 9: Past singing styles (ordered in terms of number and Percentage using style)

* Gospel/Irish/Punk/Metal/Alternative/Folk/World/Cabaret/Originals/Latin/Music Theatre

Thirty percent reported regularly singing one style *all the time* in their past performances and a further 23% reported singing combinations of at least two of the listed styles in their gig performances *all the time*. Another 11% reported performing three styles all the time. That is, 64% of participants reported that between one and three styles featured in their past performances *all the time*.

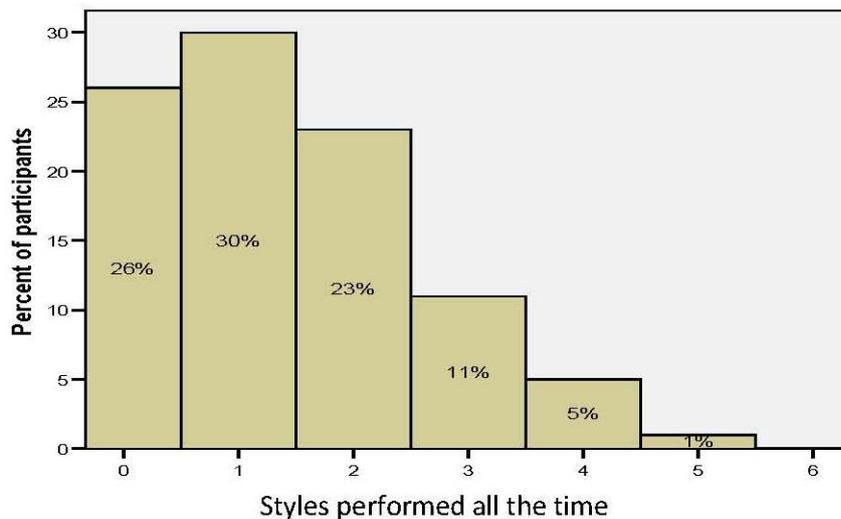


Figure 5: Percentage of participants reporting performing one or more styles in the past all the time

While Figure 5 represents responses to styles performed *all the time*, the 26% of participants who claimed not to perform any one style *all the time* (the zero group) did report performing across a range of styles in the lower ratings of *sometimes* or *often*.

4.2.1.3 PCGS singing styles in the past by gender

Both females (59%) and males (44%) reported having sung Pop style in the past. However, males (64%) were more likely to report having sung Rock style (See Figure 6). This is consistent with participants' reports of their current performance styles; the main difference being that males are singing more in Pop style currently than they were in the past.

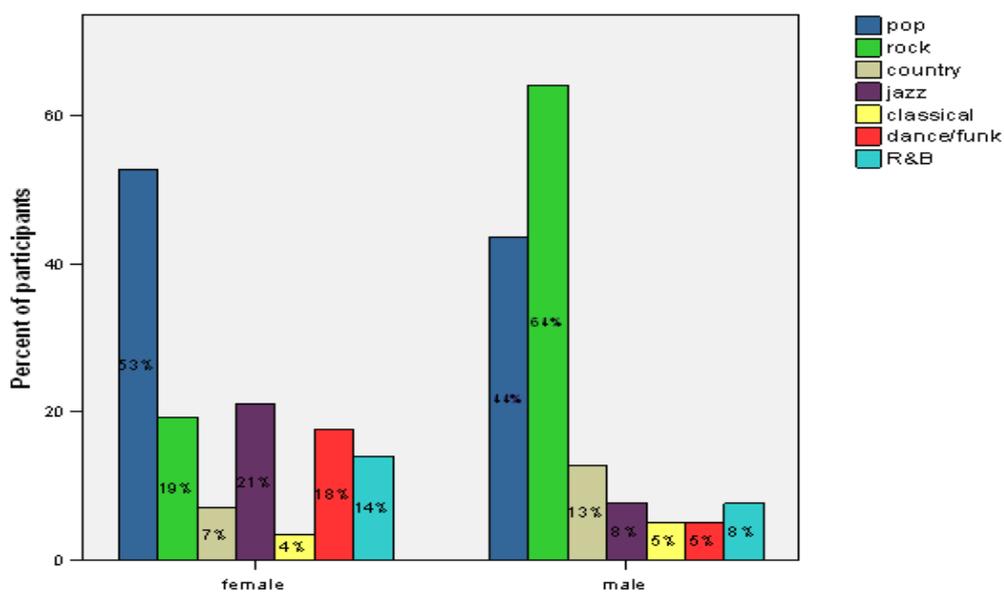


Figure 6: Styles performed all the time in the past

As shown in Figure 6, relatively equal percentages of females and males had performed across a range of singing styles in the past ($X^2_{(5)} = 3.25, p > .05$).

4.2.1.4 PCGS preferred styles

Presented with a list of seven performance styles (Pop, Rock, Country, Jazz, Classical, Dance/Funk, R&B), participants were asked to indicate which of the styles they preferred performing. As in earlier questions, in addition to the seven styles listed,

participants were invited to enter other styles performed but not accounted for by the list and to provide rated preferences using Likert scale response categories. They reported a greater preference for singing Jazz (21.6%), Pop (20.6%), Rock (16.7%) and R&B (18.6%). Conversely, they reported low preferences for Funk/Dance (8%), Classical (4%), and no preference for Country (0%). The other styles category drew a small number of responses (14.7%) and a wide variety of styles were represented in participants' descriptions of these. Music Theatre and Latin were greatest in number within the other styles group (Table 10).

Greatest preference for listed styles	Number of participants	Percentage
Jazz	22	21.6%
Pop	21	20.6%
R&B	19	18.6%
Rock	17	16.7%
<i>Preference for other styles*</i>	14	13.7%
Funk/Dance	8	7.8%
Classical	4	3.9%
Country	0	0.0%

Table 10: Preferred performance style

*Gospel/Irish/Punk/Metal/Alternative/Folk/World/Cabaret/Originals/Latin/Music Theatre

4.3 On the Gig

Many elements of behaviour and work environment can impact on the vocal health of PCGS. In particular, the frequency and duration of rehearsals and gig performances, the activities of the individual performer at rehearsal, between sets and after the gig, the type and quality of the performance venue, and conditions of employment in work other than singing performance all present problems for PCGS in terms of vocal health and career longevity. Therefore, the third section of the survey investigated the frequency and duration of participants' gig performances, their performance venues, their performance related activities and other related non-performance 'on the gig' behaviours.

4.3.1 Frequency of gig performances

All participants (N=102) responded to the question concerning their participation in gigs or sessions per week in the last month (Q. 7a). Twenty-seven participants (27.5%) reported 1-2 gigs per week, another 31 (32%) had worked 2-3 gigs per week, 17 (17.5%) participants reported 3 to 4 gigs per week and the remaining 27 (27.5%) reported 4 or more gigs per week.

Similarly, all participants (N=102) responded to a question about the number of performances across *the last two years or so*. A majority (60%) reported having worked between 1-3 gigs/sessions per week. Twenty-four participants reported 3-4 gigs/sessions per week and 17 reported 4 or more gigs/sessions per week. Table 11 details both current and past gig activity.

Gigs per week	In the past	Percentage	Currently	Percentage
1 or 2 per week	30	29.4	27	26.5
2 or 3 per week	31	30.4	31	30.4
3 or 4 per week	24	23.5	17	16.6
more than 4 per week	17	16.7	27	26.5
Total	102	100.0	102	100.0

Table 11: Gigs or sessions per week currently and in the past

4.3.2 Current and past gigs per week and gender

Participants reported between 1 and 6 gigs per week, with an average of 3.3 (s.d.1.06) gigs or sessions. This did not differ significantly for age. However, males were likely to report significantly more sessions/gigs per week than females (Kruskal-Wallis: $X^2_{(1)} 9.680$, $p>.01$) both currently and in the past.

4.3.3 Duration of gigs currently and in the past

In addition to the frequency of gigs, participants were asked to report the actual number of performance hours spent per gig both currently and in the past. On average, they reported about the same number of hours per gig currently as in the past, that is, 4 hrs per gig on average.

4.4 Gig-related activities

As described above, most male and female participants reported performing about 1-3 gigs per week, with an average duration of 4 hours. In addition to the duration of their singing performances and regardless of gender, participants reported spending an additional 20% (on average) of their overall work time setting up and 80% taking down their instruments and sound equipment (See Figure 7). From my insider experience I can report that these activities add approximately 90mins (in total) of physical work prior to and after the actual singing performance with male PCGS responsible for the setting up and taking down (lifting and placing) of heavy equipment such as speakers and amplifiers while female PCGS would be responsible for carrying lighter gear such as speaker and microphone stands, leads and moving gear trolleys to and from band vehicles. They would assist also with the attachment, detachment and coiling of associated leads and unpacking/packing of microphones. In total, an average gig for the PCGS participants would total 5.5 hours. The factoring of PCGS' traveling time to and from the gig venue increases the total gig duration still further. Rarely is accommodation included as part of the performance fee, unless the distance to venue requires air travel so PCGS may travel up to 4 hours in each direction to reach the gig venue.

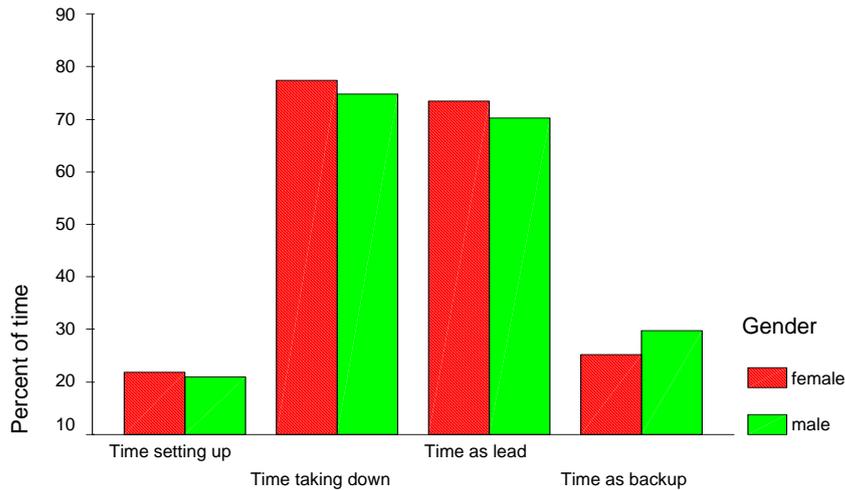


Figure 7: Percentage of time occupied in gig related activities, by gender

In addition to the PCGS’ activities of setting up and taking down equipment, Figure 8, illustrates also the proportion of time that participants’ spend as the ‘lead’ vocalist (70% av.) and as ‘backup’ singer (30% av.) with females reporting more time as lead and less as backup singers than males.

4.4.1 Playing an instrument in addition to singing

In the CCM industry it is not uncommon for PCGS to play an instrument while singing. For example, in Rock and Country music bands the lead singer will often play guitar while instrumentalists in Pop, R& B and Dance/Funk bands will double as back-up singers (Bartlett, 2010). In this current study 58% of participants reported that they played an instrument *some times, often or all the time* while singing in their gig performances. In addition to their playing, participants in this group were spending 75% of their time as lead singer and 25% as backup singer on average. Figure 08 shows that when playing an instrument in addition to singing, participants reported about 25% of their total work time was spent setting up gear, regardless of their gender. The difference in set-up time between instrumentalist singers and non-instrumentalist singers can be accounted for in the extra time

necessary for instrumentalist singers to set up their personal instruments (for example: electric pianos, synthesizers, guitars, percussion instruments and drum kits).

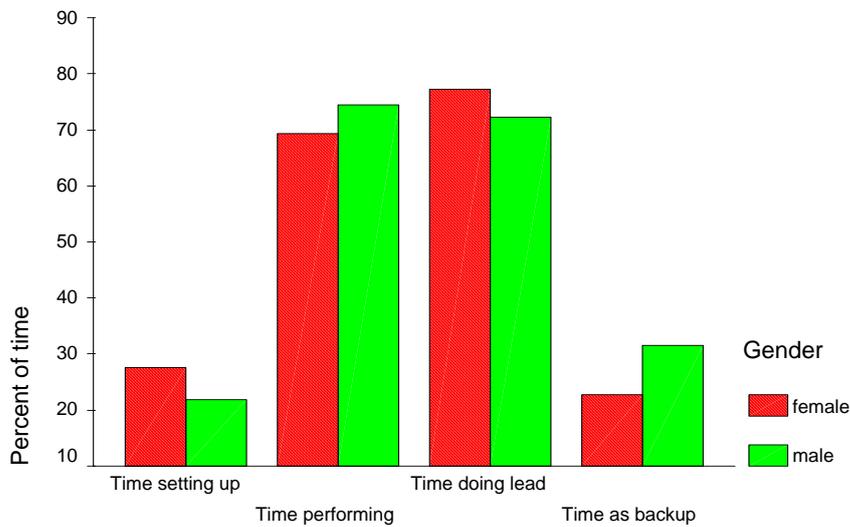


Figure 8: Gig related activities when singer also plays instrument by gender

In terms of gender, 35% of female participants (n=59) reported that they *hardly ever* played an instrument whereas 46% of males (n=43) reported that they played an instrument *all the time*. When females did play instruments, they were likely to play percussion whereas males tended to play guitar.

4.4.2 Gig venues current and past

Participants were provided with a list of possible performance venues and were invited to add other venues not accounted for by the list. Using Likert scale responses they were asked to rate the frequency of their gig performances and to nominate those venues where they worked currently and those where they had worked in the past. The distribution is shown in Table 12 for ratings of often, or all the time.

Range of Venues	% participants performing <i>often or nearly always</i> (N=102) in the past	% participants performing <i>often or nearly always</i> (N=102) currently
Pubs	69.4%	46.9%
Hotel function rooms	46.9%	44.9%
Large hall	24.5%	26.5%
Restaurant	26.5%	24.5%
Outdoors	21.4%	19.4%
Brasserie/Bars	27.6%	29.6%
Other	25.5%	28.4%

Table 12: PCGS' Performance Venues- Current and past

As shown in Table 12, PCGS participants reported working in a range of venues rather than in one type of venue exclusively both currently and in the past. Pubs and hotel function rooms were the most frequent venues for current singing performances followed by brasserie/bars. These responses were consistent with participants' reports of venues *in the past* although participants reported more work in pubs in the past (69.4%) than was their current practice (46.9%). The change in venues is not unexpected as it reflects the transient nature of PCGS' performance work. As an insider with a long and ongoing career as a PCGS, I can report volatility in performance opportunities for PCGS. In order to attract a new clientele, venues may change their music orientation, due to commercial pressures and/or management changes. Additionally, PCGS' performance opportunities change according to the connections of their gig agents and band managers with individual gig venues.

The category, *Other (Q.9g and Q.10g)*, allowed participants to report venues other than those listed. The responses identified a wide range of performance venues such as churches, festivals, nightclubs, Returned Serviceman's League clubs (RSL), casino, theatres, recording studios, and private homes. The largest response for this sub-group was for RSL clubs (n=15), the next largest was for theatres (n=7) with the remainder of the reported venues scoring from 1-3 responses each.

4.4.3 Participants singing in various venues by gender

Males were significantly more likely to report currently singing in pubs (Kruskal-Wallis: $X^2_{(1)} = 19.274$, $p > .001$) than were the female participants. Females were significantly more likely to report singing in hotel function rooms (Kruskal-Wallis: $X^2_{(1)} = 6.523$, $p > .05$). After pubs, males reported a high frequency of their singing was work in hotel function rooms, whereas females were most likely to report singing in restaurants as their next most frequent venue. These data are shown in Figure 9.

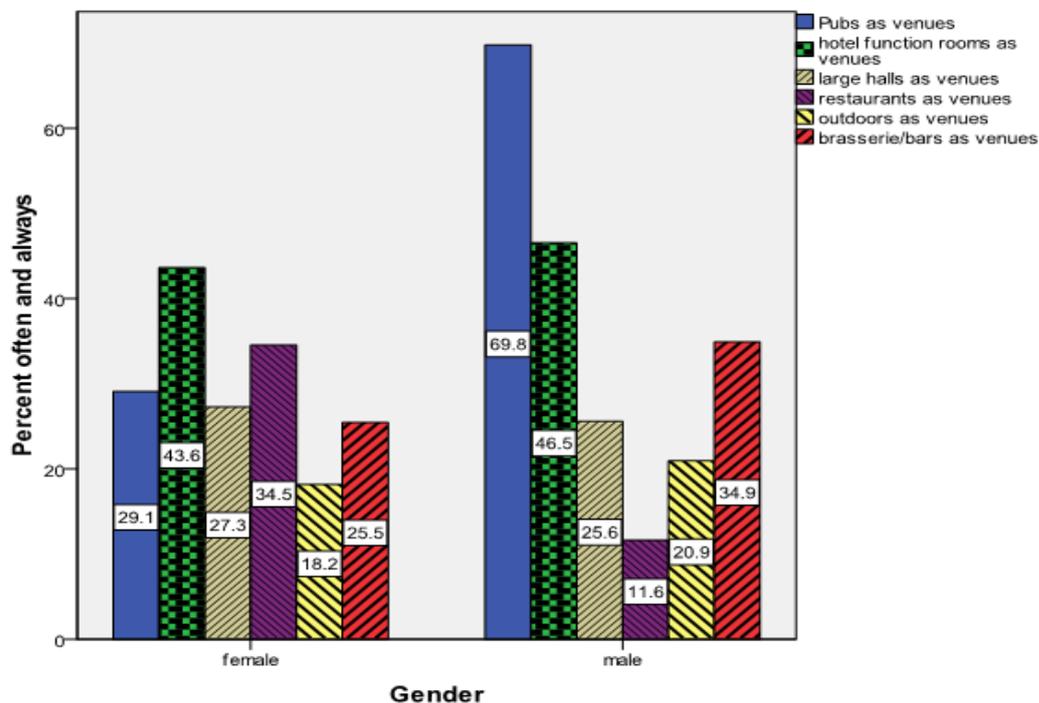


Figure 9: Current venues by gender

These responses were similar to participants' reports of venues *in the past*. Although females sang more in pubs *in the past* than *currently*, the incidence was much the same then and now for their singing in hotel function rooms. In the past, males sang significantly more in *pubs* and less in hotel function rooms (Figure 10).

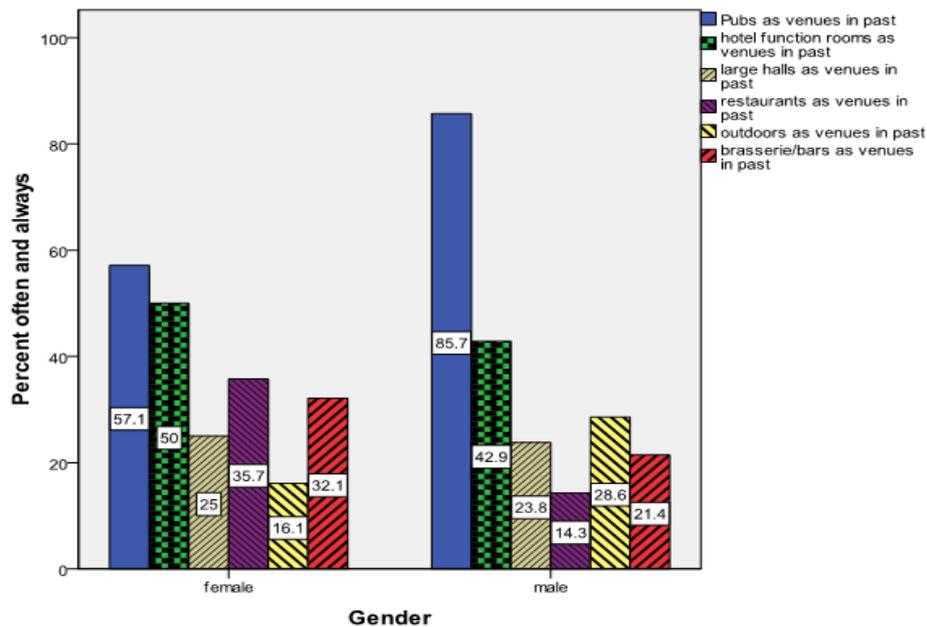


Figure 10: Past venues by gender

4.4.4 Gig behaviour between sets current and past

As with most other aspects of their work lives, there has been no research into incidence of CCM singers' development of voice problems (for example, vocal fatigue) and the use of speaking voice during gig performances. By nature of their live performance environments, PCGS have an intimate relationship with fellow band members and their audiences and socializing between sets (periods of actual performance) and after the gig are expected and accepted activities.

In responding to options about what they typically did between sets *currently*, 35% of participants (n=94) said that they would *leave the room and socialize* in the range of *often or always*. Both males and females reported that they were least likely to practice the next set (Kruskal-Wallis: $X^2_{(1)} = 9.117$, $p > .01$). Males were more likely than females to stay in the gig room and socialise (Kruskal-Wallis: $X^2_{(1)} = 7.331$, $p > .01$). This is significant in relation to the effect of speaking voice load on singing voice production and quality. A heavy speaking voice production would be needed to overcome the high levels of background noise (both

voice noise and background taped music or, in some instances, over live music from an alternating band) in the gig room (Figure 11).

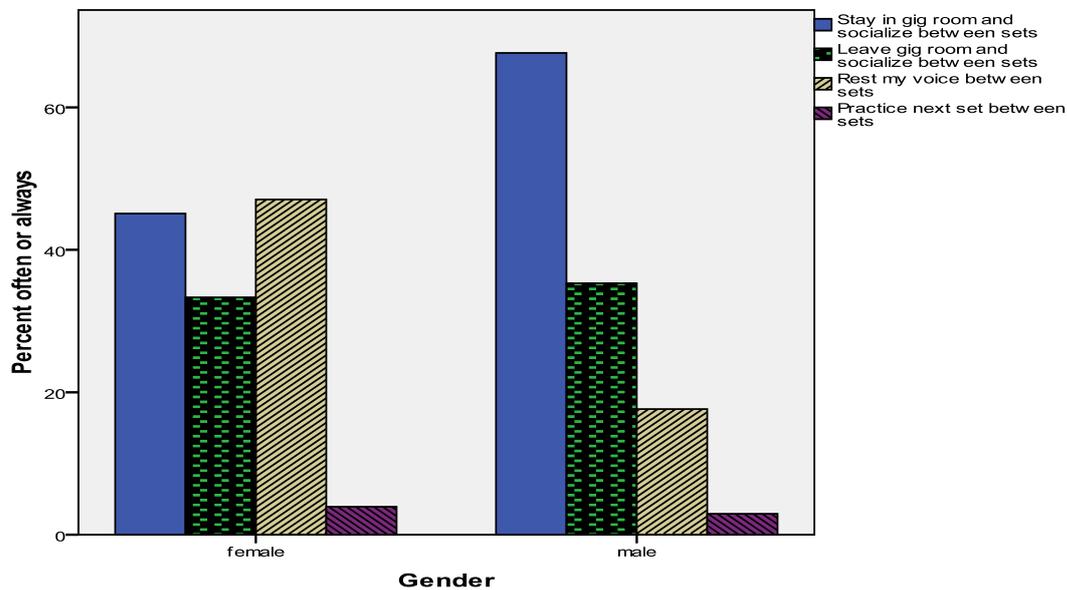


Figure 11: Activities often or always engaged in between sets (currently)

Past behaviour between sets did not differ greatly from PCGS’ current practice. Both males and females were most likely to stay in the gig room and socialize, and least likely to *practice next set*. As with their current practice, females were significantly more likely than males to rest their voice between sets (Kruskal-Wallis: $X^2_{(1)} = 8.861, p > .01$).

4.4.5 After gig performance behaviours currently and in the past

Question 13 of the survey instrument was designed to investigate PCGS’ *after gig* behaviour. Currently, both females and males were most likely to rest quietly after the gig as opposed to socialising either at the venue or elsewhere. Participant #20’s comments reflected this trend: “*These days I mainly go home and rest after a gig, especially if I’m singing night after night.*” However, of the 14 participants who did *hang around the venue and socialize*, male PCGS were significantly more likely to do so than females (Kruskal-Wallis H test: $X^2_{(1)} = 4.571, p > .05$). Of those participants (n=68) who said that they would *rest quietly or go to sleep*, females were significantly more likely to do so than males (Kruskal-Wallis H test: $X^2_{(1)} = 6.514, p > .05$). Figure 12 shows data for *current* after gig activities split by gender.

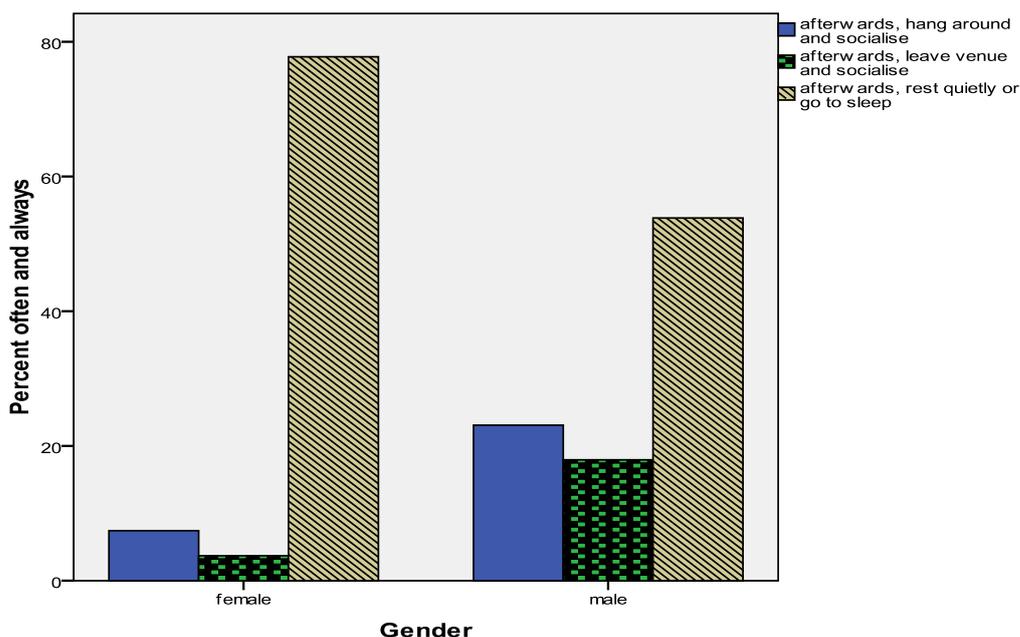


Figure 12: Activities after the gig currently by gender

4.4.5.1 Activities engaged in after gig performance in the past

Forty-one participants added comments describing their after-gig behaviour (Q.13d) as having been different in the past. They reported having regularly socialized after gigs, with many participants in this group describing “clubbing/partying” and “extensive speaking” until late. Some participants reported “voice tiredness” attributing the condition to socializing after gigs. For example, Participant (#20) whose comments on current after gig activities were presented earlier in this section, also offered the following comment about her behavior in the past: “Originally when I first started singing in bands, I did the party animal thing, and did stay and socialize after every gig. That also carried on into the Rock band I played with.” This participant’s comments are representative of many in this sub-group for whom “partying” in the past contrasted with their current habit of going home to rest after a gig. Further discussion of these qualitative responses from participants will be presented in Chapter 5.

4.4.6 Equipment and technical knowledge

As reported in Chapter 2, amplification is essential to PCGS' performance in terms of creating good venue acoustics and enhancement and protection of the vocal instrument (Wilson, 2003; LoVetri 2008). It follows then that PCGS would benefit from a functional knowledge of this technology. Participants' responses to Question 14 are reported here with their use of amplification and microphones discussed more fully in Chapter 5.

To investigate PCGS' working knowledge of the sound equipment essential to their gig performances, participants were asked questions about amplification and microphones. There were 92 responses to the question: *who operates the P.A.* (Q14a). These were coded into six categories as shown in Table 13 below.

Q.14a. Who operates the P.A?	Frequency
Band member	14
Myself	20
Sound engineer	32
Myself or sound engineer	11
Band member or sound engineer	5
All members of the band	9
Total	92

Table 13: Operation of the P.A. equipment

All 102 participants responded to Q14b *How well do you understand how a P.A. works?* A significant number of responses (81%) clustered on the rating scale of 3-5 (i.e., *moderately well to very well*). Females were less likely to report that they knew the workings of the PA very well, while males said that they did.

Question 14c probed if they knew the best E.Q. (equalization of frequency bands) settings for their voice type. Adjustment of EQ settings assists PCGS to artificially create optimum room acoustics for their voice type. Of the 102 responses, 62 participants said that they did know their best settings. Although they understood less about the work of P.A. than did males, females (68%) were more likely than males (51%) to say that they knew the best

EQ settings for their voices. This could mean that this group of female participants has memorized some standard E.Q. settings that are optimum for the microphone they are using in familiar acoustic environments but it is unlikely that they have a working knowledge of the technological application of E.Q.

Participants were asked then to rate how well they could hear their voice over instruments or backings. On a rating scale of *usually not very well* to *usually very well*, 81 (N=101) said that they could hear their voice *usually quite well* or *very well*. The remaining questions in this section (Q.14e and Q.14g) were designed to investigate how PCGS used monitoring systems to enhance their hearing of their voice (that is, how often the PCGS participants used onstage foldback monitors or in-ear monitors) and (Q.14 f) how often they used the same digital ‘effects’ (electronic enhancements such as reverb or echo) in these monitors as they did in the front of house speakers. On a 5-point rating scale of *hardly ever* to *always or nearly always*, 53 participants (N=101) said that they *always* or *nearly always* used foldback monitors, while 90 (N=101) said that they *hardly ever* used in-ear monitors. In response to whether or not they used the same effects in the foldback monitors as they did front of house (Q.14f), 44 participants (N=99) responded in the range of *often* or *always*. The relevance of these responses will be discussed in Chapter 5.

4.4.6.1 PCGS and microphones

As reported in Chapter 2, PCGS’ vocal health is highly dependent on their singing voice production which in turn is dependent on the efficiency of the live sound reinforcement equipment (P.A.) used in their gig performances. For singers, an essential element of the P.A. is the microphone. Microphones have been developed for a range of applications within a range of environments. Various brands manufacture a range of models designed for different music styles and environments. PCGS need the microphone that best suits the tonality of their voice and the gig style environments in which they perform. A

multi-part question (Q15a-e) was designed to investigate whether participants owned a microphone, could identify and rate the microphone they used regularly, and could identify why they had chosen this particular model.

All participants (N=102) responded to the question concerning ownership with a majority (females 91% and males 86%) reporting that they owned a microphone. Both males and females (98%) had good opinions of the microphone they used and most in this group (80%) stated that they always or nearly always used their own microphone for performances. The majority reported that a teacher, a fellow musician, or salesman had recommended a particular brand or model.

4.5 Rehearsals and non-performance related work

4.5.1 Frequency and type of rehearsal

As shown in Table 14, participants rehearsed regularly in a range of formats – with the full band (Mean 2.55 times per month), with a solo instrument (Mean 5.26 times per month) and unaccompanied (Mean 7.71 times per month). They reported the average length of their band rehearsals to be 2.4 hours (s.d. 1.58), the average length of rehearsal with a solo instrument as 1.33 hours (s.d. 1.08), and the average length of unaccompanied rehearsal to be 0.85 hours (s.d. 0.80).

	N		Mean	Std. Deviation	Maximum
	Valid	Missing			
Rehearsal time per month-full band	102	0	2.5550	3.22450	14.00
Length of time each rehearsal with band	101	1	2.4084	1.58340	8.00
Rehearsal per month with solo instrument	101	1	5.2650	6.63727	28.00
Length of time each rehearsal with solo instrument	98	4	1.3377	1.08201	5.00
Rehearsal per month unaccompanied	101	1	7.7112	8.51988	36.00
Length of each rehearsal unaccompanied	98	4	.8494	.80229	3.50
How often PA used for rehearsal	102	0	2.8627	1.49613	5.00

Table 14: Frequency and type of rehearsal (Q16 a/c/e)

Thirty-nine participants added their written comments as component (h) of Question 16 concerning rehearsals. Fifteen of this group reported learning a new song solo then rehearsing the song for the first time with the full band on the gig. For example: “Band members [are] experienced enough to learn from audio tape and sometimes try [a] song for first time live” (#25) and “We don’t really rehearse – we find we work enough to keep us in shape” (#35). Similarly, participant #43 describes rehearsing during the gig but defines how this is possible: “Because majority of work is done with mini-disk backings – rehearsal happens at home – learn 2/3 new songs per week- approx. 90mins/week. We keep right up to date with Top 40 numbers. First time we perform a new song is usually at a gig” (#43). Other participants offered qualifying comments on rehearsing only for special gigs, for example: “Only rehearse for special performances or recordings” (#67).

4.5.2 Frequency and type of rehearsal and gender

Males were significantly more likely than females to report rehearsing often with a solo instrument (Kruskal-Wallis H test: $X^2_{(1)} = 9.325$, $p > .05$). Females were significantly more likely than males to report longer unaccompanied rehearsal time (Kruskal-Wallis H test: $X^2_{(1)} = 7.525$, $p > .01$).

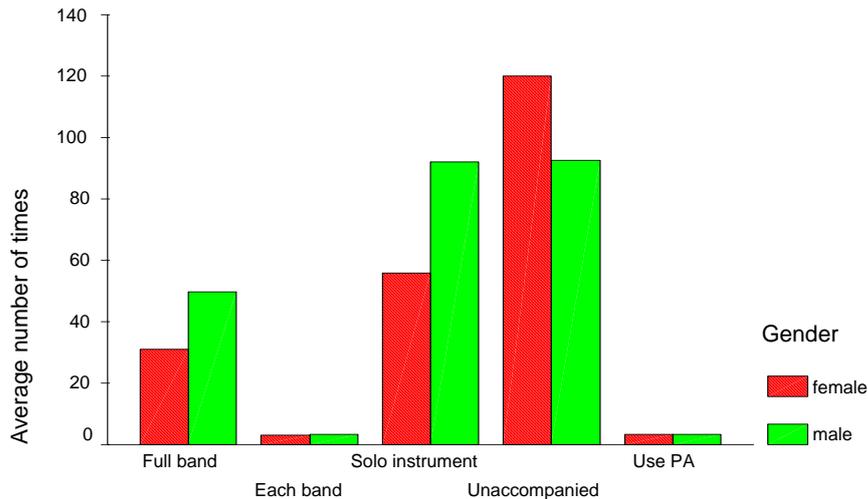


Figure 13: Accompaniment and amplification at rehearsal by gender

Figure 13 shows that both males and females were most likely to rehearse unaccompanied and least likely (in terms of amount of time) to rehearse with a band or to use the PA during rehearsal. While females rehearsed unaccompanied more often than males, males were more likely than females to rehearse with full bands and with solo instruments

4.6 Employment in work other than singing

Sixty-five participants reported that they were employed in other work in addition to their singing performances (Table 15). This other work covered a range of activities representing 28 different occupational descriptors with 13 participants (n=65) involved in multiple jobs in a range of environments.

In keeping with similar reports in the literature (Phyland, et al., 1999), the 28 different occupations were categorized into four groups according to the assumed vocal demands of each type of work. The first category (*Elite voice user*) included those occupations where voice is the essential tool of trade and included actor, T.V. presenter, voice-over presenter, comedian, and theme park actor. The second category (*Essential*) was comprised by those occupations where voice is considered essential in a non-performance environment. It included all reported types of teaching (singing teacher, acting teacher, vocal coach,

instrumental teacher, classroom teacher & teacher aide), spruiker, telemarketer, call-centre operator, campaign/fund raising co-coordinator, music events organizer, and receptionist. The third category (*Important but not essential*) was comprised by those occupations where voice is necessary but where the worker was able to function with less than optimal voice production. This group included T.V. producer, shop assistant, hospitality worker, lawyer, administration, customer service, beautician, and promotions. The fourth category (*Non-voice reliant*) included occupations where the quality of the work did not depend on voice. It included such occupations as technician, factory worker, scientist, general office worker, university student, tradesman (house painter, carpenter/builder, bricklayer, and electrician), masseuse, and service station attendant.

Category of voice use	Occupation	Number of PCGS
1 Elite voice user	Actor	6
	TV presenter	1
	Voice over presenter	1
	Stand-up comedian	1
	Theme park actor	4
2 Essential	Teacher – singing, acting, classroom, vocal coach, teacher’s aide,	29
	T.V. presenting	
	Spruiker	1
	Telemarketer	1
	Call centre operator	1
	Campaign/fundraising coordinator	3
	Music events coordinator	1
	Receptionist	1
3 Important but not essential	T.V. producer	2
	Shop assistant	4
	Hospitality	2
	Lawyer	1
	Administration	4
	Customer service	1
	Bank accounts manager	1
	Beautician	1
	Promotions	2
4 Non-voice reliant	Technician	5
	Factory worker	1
	Scientist	1
	Office worker	4
	University student	1
	Tradesman	5
	Masseuse	1

Table 15: Other employment categorized

Thirteen participants in this group (22%) reported more than one “*other than singing*” voice-related occupation that fell into either *Elite* or *Essential* categories.

4.6.1 Time spent in work other than singing performance

Participants reported involvement of between 2-50 hours per week in work other than singing. Across the 65 participants in this group the average time spent was 20.92 hours per week. Females worked in the additional occupation for 11 hours per week on average whereas males were likely to work for more than 15 additional hours per week (Fig. 14).

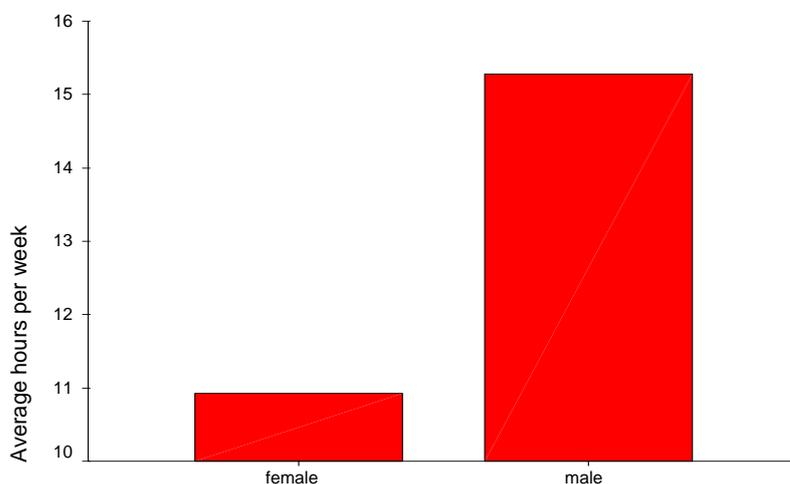


Figure 14: Average hours of other work per week in addition to singing by participants’ gender

4.6.2 Speaking voice use in non-performance work

As reported in the review of the literature (Chapter 2), research reports on professional voice users suggest that those who use their speaking or singing voice excessively as a part of their career work are more prone to voice problems such as vocal fatigue. For the majority (n=65) of the PCGS participants in this current study, their *other than performance* work involved occupations that required heavy speaking voice use. Aronson (2009) suggested that it was important to address the singer’s “overall voice use behaviors” stating that, “Many voice problems in singers are the result of non-musical

activities” (p. 273) associated with work undertaken to supplement their music-related income.

Fifty-seven participants reported having to use their speaking voice as part of their *other* non-performance work in the range of *often or always* (Q.17e). Thirty-seven (64.9% of this group) reported that the workplace was *noisy* (Q.17d) and, 21 (36.8% of this group) said that they had to *speak more loudly* in the range of *often or always* (Q.17f).

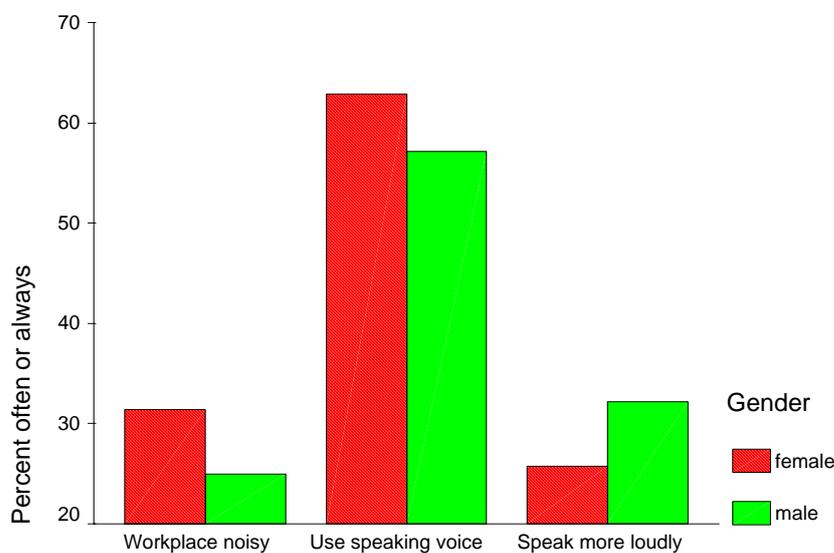


Figure 15: Workplace noise related issues by participants’ gender

As shown in Figure 15, females were more likely than males to report that the workplace was noisy or that they had to use their speaking voice. Males were more likely than females to report having to speak more loudly than normal in this work.

4.7 Summary of participants’ personal and professional characteristics

There are no published studies of PCGS’ as a population, and therefore, very little is known of their lifestyle, work life, or their training and performance backgrounds. In the past the literature has relied on anecdotal commentary or laboratory-based or clinical information gathered from small treatment seeking samples when reporting on this group. Thus, this

current study is the first to present an evidence-based profile of contemporary gig singers who are performing professionally as a major part of their regular work life. The PCGS participants provided data in relation to (a) age and gender, (b) performance history (e.g. career duration) and enjoyment, (c) type, history and extent of training for singing (e.g. in terms of years and style, classical vs. contemporary), (d) styles of singing performance (e.g. Pop, Rock, Country etc.), (e) involvement in rehearsal and performance, and environmental conditions in which these occur (e.g. frequency and duration of rehearsals and performances, types of venues) and, (f) employment in work other than performance (e.g. type of work, hours per week).

Fifty-nine female and 43 male PCGS participated in the study. Their ages ranged from 19 to 61 years. On average, participants first sang publicly at 12 years of age (*s.d.5.12*) with 85% having done so at 16 years or younger. Typically, their first professional engagement occurred when they were 18 years old (*s.d.4.33*), with 85% having done so at or before the age of 23 years. The majority (*n=79*) reported continuous performances since their first paid work.

As reported in Chapter 3, PCGS who participated in this research project were a random sample gathered through convenience sampling method that drew in major part on various contacts. It did not specifically target trained PCGS. Yet, seventy-four participants (72.5%) reported they had taken training. It ranged from a couple of lessons to more than 15 years of ongoing development. The mean period of time across which this occurred for those with classical training was 3.8 years (*s.d.3.26*), and 4.1 years (*s.d.3.51*) for those with contemporary training.

Both male and female participants reported singing across a wide range of styles in their current and past gig performances with heavy representation in Pop, Rock, R&B, Dance/Funk. Males were singing more in Pop style currently than they had in the past. This

change in participants' performance style can probably be attributed to a need for flexibility to ensure their continued or expanded employment opportunities. The predominance of Pop and Rock styles in PCGS' performances was not unexpected as participants generally were singing within a range of professional gig "covers" bands. The success of these gig bands is dependent on audience appeal and meeting a general audience preference for covers (i.e., the live performance by a band of a named artist's recording). This study did not investigate PCGS' performances of original compositions with a specific question on the survey and none offered information about this where commentary was invited.

The criteria applied in the study required participants to be involved in singing performances for at least six hours per week. On average participants reported performances of four hours per gig/session, with 75% (N=102) involved in two to five gigs/sessions per week on average in a wide range of venues. PCGS' accounts of the frequency and time spent in rehearsal and performance varied as did the environmental conditions in which these activities occurred. All reported regular involvement in some form of rehearsal (with full band, solo instrument or unaccompanied). When viewed in relation to the lack of information in the literature, these data enable a profile to be constructed about gig singers who are singing professionally as a major part of their regular work life.

The next chapter continues to profile the PCGS who participated in this study. It reports on the rich qualitative responses given by the participants in response to the open ended questions of the survey instrument and includes reporting of unsolicited commentary from the participants in order to provide an additional layer of detail regarding PCGS' work-life and experience and management of voice problems.

5 Results 2 and Discussion

Throughout this dissertation, the research endeavour has been to position opinion about PCGS within an evidence-based context, and also to re-examine what might be said of their susceptibility to voice problems. Analyses of data as presented in this and the previous chapter, provide an evidenced-based response to the central research question, *How might professional contemporary gig singers be accurately described in terms of professionally-relevant life-style and performance practice*, and create a detailed profile of PCGS in addressing the aims of the study:

- 1) To describe the sample of singers in terms of their age and gender, performance histories, training, singing styles, and, environments within which they work;
- 2) To describe the singers' reported experience of voice problems; and,
- 3) To examine the relationships between the extent of training, performance habits and lifestyle elements of these singers and their reported experiences of voice problems.

Participants' quantitative data as reported in Chapter 4, presented a demographic of PCGS in relation to statistical patterns on the metrics provided. These data attest to the singers' ages and gender, and speak to their background training and performance experience, performance styles and environments and other issues they considered had affected their performance lives. In the current chapter, these and additional statistical data are elucidated by PCGS' descriptions of their lived experiences from their responses to open-ended questions and sometimes by way of written comments that were unprompted. The qualitative perspective allowed PCGS to speak through their stories - thereby providing greater insight into the reality of their lifestyles, work-life environments and social interactions. Further, a

second and more complex set of responses is reported concerning PCGS' awareness and perception of vocal problems evident from their self-monitoring of problematic symptoms and the effects if any, of these problems on their singing performance. The qualitative element of the mixed-model survey design encouraged discussion of what it is to be a professional contemporary gig singer (PCGS). This mixed method approach enabled participants to voice their beliefs about the relationships between voice symptoms and voice problems in their performance histories and lifestyle and work life practices, and to report their management strategies for problems when these occurred. In this way, the data set addresses the following secondary research enquiries of the study:

- *What voice problems do PCGS report, what voice symptoms do PCGS experience commonly, and if any, what effect do these have on their singing performance; and,*
- *What beliefs and concerns do PCGS have about voice problems and lifestyle/work-life associations?*

5.1 PCGS Experience of Voice Problems, Voice Symptoms and Effects on Singing Performance

The predominant view expounded in the literature of singing voice (as presented in Chapter 2) is that CCM styles are inherently damaging to the vocal instrument. However, this view appears to rely heavily on investigations of treatment seeking samples and/or the opinions of commentators applying a classical-style aesthetic. The self-reports of the PCGS participants in this study stand outside both sets of constraints. What can they tell us in comparison?

At first, PCGS themselves appear to agree with the literature in relation to singers being more susceptible to vocal damage than other groups of professional voice users (Q.23c), asserting that some CCM styles are potentially more damaging than others (Q.23a). However, they did not agree that all CCM styles are inherently damaging and this aspect of their accounts contrasts with the existing opinion.

As reported in Chapter 2, published research in the field of occupational voice disorders consistently reports the prevalence of voice problems amongst singers as ‘high’ in comparison to other professional voice users in the general community (Fritzell, 1996; Kitch & Oates, 1994; Perkner, et al., 1999; Titze, et al., 1997; Verdolini & Ramig, 2001). However, such reports have been general in their descriptions of their singer-participants, presenting them as an homogenised group regardless of style or genre (classical and non-classical). Additionally, participant pools for these studies were drawn commonly from groups of college students or treatment-seeking samples (singers presenting at voice clinics) and details of participants’ lifestyle or work profiles were not presented. For example, there were only vague allusions to professional standing and no details were presented regarding current or past singing training, current or past performance styles, or of the frequency and duration of participants’ performances, and there were no descriptions of the venues where these performances occurred. None of the studies documented the level of participants’ involvement in additional voice use, that is, non-singing work. Participants in the current research have provided such in-depth details and their rich data are reported and discussed in the following sections of this chapter.

5.1.1 Experience of voice problems

Across their career, 97 participants (N=102) described the *worst voice problem that they had experienced* at some time. Four participants (#56, #57, #96, and # 97) said that the question was “not applicable” and one participant (#100) responded, “never any serious problem”. This was consistent with how these five participants had responded to an earlier question (Q18: *symptoms related to your voice that have affected your performance*) where they reported that they had only experienced voice symptoms in the low range of *never* or, *not often*.

While a sub-group of 27 (n=97) said that their worst voice problem had occurred *in the last 12 months* the remaining 70 participants said that their voice problems had occurred prior to this (Q.20c). Responses are as follows: 24 participants reported *1-2 years*, 23 said *3-5 years* and for another 23 it had been *longer than 5 years ago*.

5.1.2 Effects of the worst voice problem on performance

All participants (N=102) provided data along an 11-point Likert scale on the *effects* on their performance of the *worst problem* they had experienced in their career (Q.20b). The scale was anchored at three points (0 = *no effect on performance*; 5 = *troublesome*; 10 = *very disruptive*); the distribution is shown in Table 16, and indicates a significant skew at the top end.

Scale point	0	1	2	3	4	5	6	7	8	9	10
Anchor descriptor	No effect at all					Troublesome					Extremely disruptive
Participants	9	1	2	3	4	13	9	7	6	6	42

Table 16: Distribution of perceived effects on performance of worst voice problem experienced in a career (Q.20b)

For the great majority of participants, the worst problem had effects between *troublesome* and *very disruptive* with most clustered at the very top mark. This result is interesting when compared to responses to the following question (Q.21b) where participants reported a low experience of voice problems *in the past* and where these did occur, a low effect (Q.21b) on their performance (Table 17).

Scale point	0	1	2	3	4	5	6	7	8	9	10
Anchor descriptor	No effect at all					Troublesome					Extremely disruptive
Participants	18	6	6	6	11	18	7	8	4	2	12

Table 17: Distribution of perceived effects on performance of a worst voice problem in the past (Q.21b)

All but two participants (n=100) responded to the question *How many voice problems have you had in the past?* (Q, 21a). On a 5-point rating scale, the majority reported very few voice problems; that is, 30 participants reported *hardly any* problems and 43 said *not very many*. Of the remainder, 21 said they had experienced *some* problems with five reporting *quite a few*. Only one participant reported experience of *a lot* of voice problems and these had occurred in the past. This distribution reflects a generally low experience of voice problems; therefore it is interesting that 50 of this group (n=100) also reported having changed their performance style *in the past* because of their voice problems. One possible explanation for this discrepancy may be that style changes are a quick and easy response for PCGS when problems occur. However, this was not measured in the study and is an issue warranting further research.

In describing their *worst voice problem* (Q.20a), most participants reported commonly occurring acute infections such as colds and flu as being most bothersome. Participant #23 was representative of this group: “a bad flu/virus affected pitch and volume.” However, some participants reported specific organic problems such as reflux (n=6) and nodules (n=11), or respiratory problems such as asthma and allergies (n=16). For example: “Most problems have been overcome but originally voice was affected by reflux” (Participant #5); “Nodules, changed tone and range resulting in six months off” (Participant #27); “Asthma sometimes makes singing hard” (Participant #15). These are chronic conditions and as such cause ongoing problems for singers with regards to both voice production and management. For example, nodules usually go untreated until the singer presents to a medical specialist with chronic hoarseness. Once diagnosed, nodules can be resolved through remedial exercise and in the worst cases through surgery. Medications are necessary for the control of allergies and asthma and regular use of antihistamine and inhaled corticosteroid medications have strong implications for voice. Antihistamine medications can be problematic due to their

dehydrating effect, but they are used most commonly in an intermittent way to treat acute rather than chronic conditions, such as hay fever, sinus etc. For those singers who have chronic allergies and/or asthma, the use and effect of corticosteroids can be persistent and debilitating. For example, in prevalence study of 350 patients at three asthma and allergy departments in Stockholm, Ihre, Zetterström, and Hammarberg (2004) found a significant positive correlation between inhalation of cortisone and voice disturbances:

Most of the patients complained about hoarseness, followed by throat clearing, a lump in the throat, loss of voice, and less frequently, throat pain...Patients with voice-demanding professions had more problems than patients who used their voice to a lesser extent during the working day. There was a significant positive correlation between high cortisone doses and voice problems as well as between voice problems and acid regurgitation. (p. 1)

The observations of Zetterström et al. are highly relevant for PCGS such as Participant #15 who employ both the singing and speaking voice as a primary tool of trade.

Four participants associated specific voice problems with traumatic injury. For example, Participant #3 reported being “struck on the throat playing football”. He then described the significant effect of this event on his performance career: “Could not sing effectively for 6 months”. Another male reported the lengthy effect of a car accident on his vocal health: “Broken nose (car accident). No vocal problems before this accident. Many procedures induced infections in nasal and throat passages causing strained voice leading to vocal fold hemorrhage” (Participant #15). Generally, participants offered qualifying statements as to the varying health effects of their voice problems and the way these had affected their vocal performance. All participants who reported specific voice problems (n=18) said that these had occurred in the past. They all had overcome or managed these problems. Significantly, they had also managed the effects on their voice and continued with their professional singing careers.

It is interesting to note that Question 20(a-b) was designed to investigate the prevalence and effects of voice *problems*, but without exception, participants (n=97) named their *worst voice problem* as one of those symptoms offered in the survey list (Q.18). These were symptoms such as *hoarseness* and *tired or weak voice, mental tiredness and physical and mental stress*. Colton, Casper and Leonard (2006) provide some insight into this conceptual confusion: “A symptom is a complaint. It is what a patient reports about the problem and its characteristics” (p.14). It can be hypothesised that the participants in my study were similar to the “patients” in the Colton et al, study, in that they possibly lacked background knowledge to assist them to differentiate a symptom from a problem and, therefore, the two become interchangeable in their “complaints” of difficulties of vocal production. This problem/symptom dilemma may have been a consequence of some past experience where a *symptom* had been named as a *problem* by a respected authority (teacher, doctor, textbook, etc.). Alternatively, the symptom’s physical presence and the attention it required were sufficiently problematic for it to be described in those terms.

5.1.3 PCGS experience of problematic voice symptoms

Symptoms have been described as precursors to voice problems (Russell, 1999). As outlined below (Table 18) there was almost uniform acknowledgement by participants of a wide range of voice symptoms. According to the literature on occupational voice disorders (see Chapter 2) singers are described as one of the professional groups most at risk of developing voice problems; therefore, to effectively investigate both the occurrence and impact of voice problems in a PCGS population it was important to first identify those symptoms experienced commonly by the participants in my study. As can be seen in Table 18, the response rate for the 15 symptoms presented in the questionnaire was high and indicated that nearly all in the sample had experienced nearly all of the symptoms at some time *in the past 12 months*, but not often; that is they reported symptoms in the low range of

hardly ever or never. Responses were arranged in order from highest mean score to lowest mean score. The Likert scale ranged from: *Hardly ever, never* (1) to *Always* (5).

Symptoms	1 Always or nearly always	2 Often	3 Sometimes	4 Not very often	5 Hardly ever, or never	Total
Hoarseness or roughness of the voice	5	18	33	19	25	100
Lost your voice		1	5	23	68	97
Severe dry throat	1	4	21	27	46	99
Very sore throat	2	4				98
Laryngitis following a cold	1	2	9	13	73	98
Strained voice	2	11	30	32	25	100
Tired or weak voice	2	17	26	33	20	98
Breathy-sounding voice		7	24	25	42	98
Inability to get high notes	1	9	36	26	18	100
Inability to achieve enough loudness or volume of the voice		3	15	27	54	99
Inability to control vocal tone or quality of the voice		2	18	36	43	99
Inability to control vocal pitch		2	11	23	63	99
Excessive mucus, phlegm	3	16	19	22	39	99
Physical tension – eg, neck, shoulders – that has affected your voice	5	8	25	19	41	97
Emotional or mental stress that has affected your voice	2	12	21	27	36	98

Table 18: Experience of voice symptoms over the past 12 months and frequency of effect on performance

The low response to the high end of the rating scale (*always or nearly always* and *often*) suggests that the symptoms experienced were superficial rather than durable. As can be seen in the incidence statistics presented as Table 19, the symptoms were normally distributed rather than skewed toward high levels of frequency.

Statistics	N	Missing	Mean	Std Dev	Skewness	Kurtosis	Min	Max
Hoarseness of voice	101	1	2.540	1.204	0.174	-0.976	1	5
Tired or weak voice	98	4	2.420	1.074	0.318	-0.770	1	5
Strained voice	100	2	2.370	1.031	0.273	-0.593	1	5
Unable to get high notes	100	2	2.280	1.026	0.213	-0.869	1	5
Excessive mucus	99	3	2.210	1.214	0.559	-0.919	1	5
Physical tension	98	4	2.160	1.216	0.699	-0.520	1	5
Emotional or mental stress	95	7	2.150	1.111	0.606	-0.610	1	5
Breathy-sounding voice	98	4	1.990	0.990	0.477	-1.028	1	4
Severe dry throat	99	3	1.840	0.934	0.868	0.139	1	5
Unable to control vocal tone	99	3	1.790	0.799	0.648	-0.408	1	4
Very sore throat	98	4	1.770	0.982	1.290	1.249	1	5
Unable to achieve enough volume	99	3	1.680	0.831	0.889	-0.322	1	4
Unable to control vocal pitch	99	3	1.530	0.787	1.326	0.801	1	4
Laryngitis following cold	98	4	1.500	0.888	1.803	2.691	1	5
Loss of voice	97	5	1.390	0.686	1.887	3.463	1	4

Table 19: Incidence statistics for the 15 voice symptoms (means in descending order)

Table 19 shows that participants' overall experience of most symptoms was high (see data in the "N" column). However, PCGS also rated the symptoms that were most widely experienced (hoarseness of voice, tired or weak and strained voice) as occurring infrequently (i.e., *sometimes-hardly ever*) as shown previously in Table 3. All but one of the mean scores are below the midpoint (2.5) of the Likert scale (*hoarseness of voice* is at the midpoint) signifying that generally repeated occurrence of any one symptom is infrequent. The standard deviations also are small, meaning that most scores are clustered tightly around the mean rather than widely spread. These data suggests that the PCGS participants experienced a wide range of symptoms across a year of work, but most occurred acutely rather than chronically for the group, reflecting a strong indication toward high prevalence but low incidence rates.

It is possible that the high incidence of symptoms may have been influenced by the formatting of four earlier Likert scale questions; that is, where participants were directed to “Please circle a number *next to each* style/venue”. This directive was not repeated for the symptoms question so there is some possibility of a task demand effect in the data across the two questions.

5.1.3.1 *Symptom clusters*

Symptoms can be described in various ways (Colton, et al., 2006). For example, some groups of symptoms may be associated with phonation (the ability to produce sound), while others may be associated with perceptual characteristics such as “hoarseness, scratchiness or wobbly voice” (p.14). These associations allow symptoms to be clustered into perceptual groups where interrelationships can be studied (Barsevick, K, Nail, Beck, & Dudley, 2006; Molassiotis, Wengström, & Kearney, 2010; Roy, Merrill, Thibeault, Gray, & Smith, 2004; Scott, Robinson, Wilson, & Mackenzie, 1997). In keeping with this view, participants’ responses to the symptoms list (see Table 18) were grouped into 5 clusters on the basis of conceptual similarity, yielding the following categories: *voice quality*, *lost voice*, *throat discomfort*, *voice control*, *stress*. The category *voice quality* reflected a range of perceived voice symptoms that could be heard, *lost voice* reflected an inability to create sound, *throat discomfort* related to a range of physical sensations and feelings of discomfort in the throat, *voice control* reflected a range of inability to create sound in a reliable and consistent manner, and *stress* reflected physical and mental tension. Frequencies for items arranged within each category are reported below.

5.1.3.2 Voice quality

Voice quality symptoms, particularly hoarseness can manifest for a range of reasons such as vocal misuse, hyperfunction and muscular imbalance, medical or physical conditions and psychogenic disorders (Ramig & Verdolini, 1998). Nearly all in the sample (99%) indicated that the four features of vocal quality (*hoarseness or roughness of voice, strained voice, tired or weak voice, breathy-sounding voice*) had *frequently affected* their performances. Frequencies are shown in Table 20 with “hoarseness of voice” nominated most frequently as having greatest effect and “a breathy-sounding voice” represented least often. The average of these four scores (Mean=2.34, SD=0.878) was taken to represent a position across the *voice quality* category, and this is not affected by variables reported in description of the sample in Chapter 4 other than *age of the participant* [$F(1,94)=5.478, p<0.05$]; that is, older participants (31-61 years old) were likely to report significantly higher ratings for the four voice quality features on average (Mean=2.99, SD=0.78) than younger participants (19-30 years old: Mean=2.50, SD=0.923).

Statistics	Hoarseness/roughness of voice	strained voice	tired or weak voice	breathy-sounding voice
N	101	100	98	98
Missing	1	2	4	4
Mean	2.54	2.37	2.42	1.99
S.D.	1.204	1.031	1.074	0.99
Min	1	1	1	1
Max	5	5	5	4

Table 20: Voice quality – PCGS’ experience of symptoms

Twenty-three participants (n=101) reported *hoarseness or roughness of voice* as the most disruptive symptom in the *voice quality* category (*in the past 12 months*) and rated this symptom as having affected their performance in the range *often or always*. Hoarseness is the most common voice issue for professional voice users and is defined as a disorder characterized by altered vocal quality, pitch, loudness, or vocal effort that impairs communication and affects nearly one-third of the population at some point in their lives (Schwartz et al., 2009).

Percentages of participant PCGS reporting various voice symptoms related to voice quality (hoarseness, strained voice, tired or weak voice, breathy sounding voice) in the range *often or always* are shown in Figure 16 and will be discussed in greater detail later in this chapter in relation to participants' work and lifestyle behaviours.

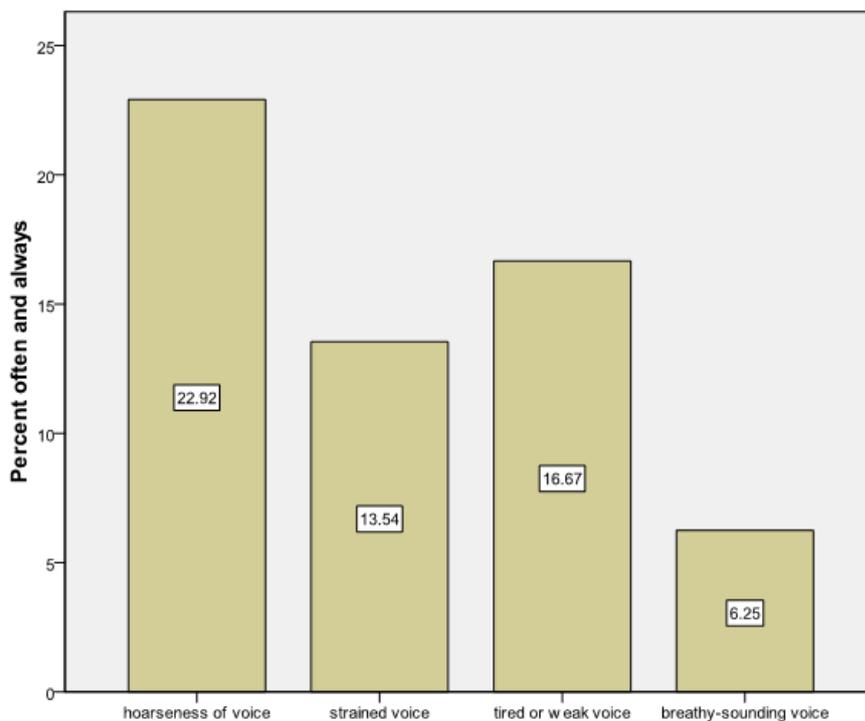


Figure 16: Percentage of participants reporting various voice symptoms related to voice quality often or always

In summary, amongst PCGS and particularly for those in the 31-61 age group, when a symptom within this cluster occurs there is likely to be an effect on voice quality. This is especially the case when the symptom is *hoarseness or roughness of voice*, however none of the four symptoms is likely to be recurrent across a year's work.

5.1.3.3 *Lost voice*

Lost voice as a category is represented by two descriptors from the symptom list: *loss of voice* and *laryngitis following a cold*. Most participants (97.5%) said that they had suffered one or other of these symptoms in the *last 12 months*. The majority (N=85) said that these symptoms were insignificant and had affected their ability to perform only in the low range of *not very often or never*. Participants who reported symptoms in this cluster associated lost voice with voice misuse (for example, speaking in performance breaks over loud background noise in gig venues) and illness (for example, colds/flu).

As indicated in Table 21, participants were more likely to report “laryngitis” (Mean=1.5, SD=0.89) than “loss of voice” (Mean=1.39, SD=0.69). Averaged to represent a *lost voice* category (Mean=1.44, SD=0.62), the mean was not significantly associated with gender or age or the combination of these. Nor was it associated with age of first public performance or age of first professional performance.

Statistics	loss of voice	laryngitis following cold
N	97	98
Missing	5	4
Mean	1.39	1.50
S.D.	0.686	0.888
Min	1	1
Max	4	5

Table 21: *Lost voice - PCGS' experience of symptoms*

These statistics indicate that lost voice is not a major issue for PCGS in relation to performance regardless of any of the demographics reported in the previous chapter.

5.1.3.4 Throat discomfort

Data from three items on the symptom list (severe dry throat, very sore throat, excessive mucus) characterize the throat discomfort category and are shown in Table 22.

Statistics	severe dry throat	very sore throat	excessive mucus
N	99	98	99
Missing	3	4	3
Mean	1.84	1.77	2.21
SD	0.934	0.982	1.214
Min	1	1	1
Max	5	5	5

Table 22: Throat discomfort - PCGS' experience of symptoms

Participants were most likely to report “excessive mucus” (Mean=2.21, SD=1.21) and least likely to report “severe dry throat” (Mean=1.84, SD=0.0934). The average level for the *throat discomfort* category (Mean=1.93, SD=0.72) was not significantly associated with gender or age or the combination of these. Nor was the level of throat discomfort associated with age of first public performance or age of first professional performance.

Almost all participants reported having experienced one of these three symptoms in *the past 12 months*, but only 19 said that the symptoms had affected their performance *often or always* (Figure 17).

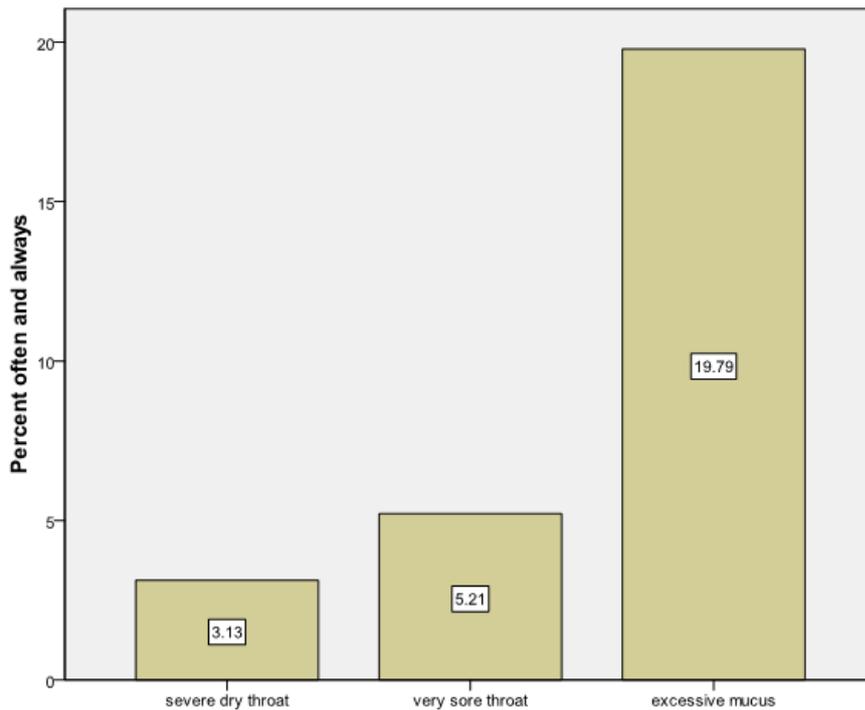


Figure 17: Percentage of participants reporting various voice symptoms related to throat discomfort often or always

As with the previous cluster, throat discomfort is not a condition affecting PCGS in relation to performance and this result is not changed by any demographic included in the PCGS profile.

5.1.3.5 Voice control

Data from four of the items characterised within the *voice control* category (*unable to get high notes, unable to achieve enough volume, unable to control vocal tone, unable to control vocal pitch*) are shown in Table 23.

Statistics	get high notes (unable to)	achieve enough volume	control vocal tone	control vocal pitch
N	100	99	99	99
Missing	2	3	3	3
Mean	2.28	1.68	1.79	1.53
S.D.	1.026	0.831	0.799	0.787
Min	1	1	1	1
Max	5	4	4	4

Table 23: Voice symptoms related to voice control

Participants were most likely to report problems to be associated with getting high notes (Mean=2.28, SD=1.03) and least likely to associate them with control of vocal pitch (Mean=1.53, SD=0.79). The average level of voice control issues (Mean=1.82, SD=0.65) was influenced significantly only by age group ($F(1,95)=4.924, p<0.05$) amongst the descriptive variables of the sample such that younger participants (19-30 years: Mean=1.97, SD=0.09) were more likely than older participants (31-61 years: Mean=1.68, SD=0.09) to report higher levels of voice control issues.

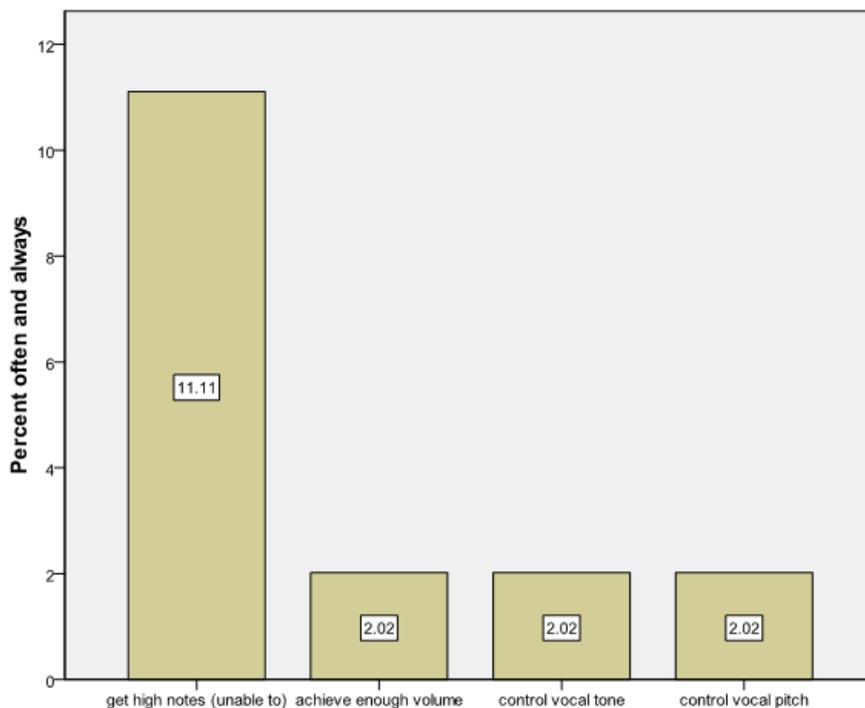


Figure 18: Percentage of participants reporting various voice control symptoms often or always

While 99.25% of participants said that they had experienced all four of the symptoms in this category *in the past 12 months*, the effect on performance was low, with the *inability to get high notes* symptom attracting the most attention with 10 participants rating its effect *always or often*. Percentages for all four symptoms in the *often or always* range can be seen in Figure 18.

5.1.4 Voice symptoms related to emotional or mental stress

Ninety-eight participants reported having experienced *emotional or mental stress* in the past 12 months. However, a majority (85%) reported that this category of symptoms had little effect on their performance; 14% said that these symptoms had affected their ability to perform *often or always*.

In response to the symptoms list (Q.18) 62 participants reported an experience of stress as having *some* impact on their ability to perform and 15 of this group reported stress as the symptom that had *most* impact on their ability to perform. For example, a 25-year old female participant commented that “*Emotional, physical stress*” (Participant #6) was significant in affecting her performance abilities. Likewise, a 28-year old female suggested that working in the CCM industry was stressful in itself: “*Stress within the industry, emotional loads*” (Participant #65). A 26-year old female participant identified her work *other than performance* for high stress levels: “*Tiredness from work in a day job, little sleep and no time to eat properly or sleep. Higher stress pre-performances because of this*” (Participant #90). The relatively high result for stress is not unexpected. The voice is a neuromuscular instrument and as such is affected by fluctuations in general health, changes in mood and physical condition (Thurman & Welch, 2000). It follows that any form of stress, be it emotional or physical, may impact on the process of voicing (phonation, articulation, breath flow).

To summarize, PCGS participants' symptoms were usually superficial rather than durable with effects on performance occurring at below normal distributions. They were rarely problematic for PCGS' performance and typically were successfully managed. These results contrast the existing knowledge. Moreover, their responses to other survey questions pointed to a range of issues that impacted their performance lives with voice symptoms occurring as a result of these. These included gig environments, individuals' lifestyle behaviours (for example, partying after a gig) and stress and tiredness. This range of issues will be discussed later in this chapter but discussion of pressures to perform regardless of vocal health symptoms follows here.

5.2 The show must go on

The self-reports of participants in this study suggest that both internal and external forces compelled them to perform regardless of health symptoms. These forces included their own desire and need to perform, the financial pressures brought about by cancelled performances and the contractual expectations (written or verbal) of audiences and fellow performers. In my experience, these pressures may lead to an acute overuse of the voice (vocal abuse) manifesting as symptoms such as hoarseness of voice, tired or weak and strained voice. Additionally, problematic symptoms may develop as the result of some underlying or developing illness of which the PCGS is unaware. There is support for this view in the literature: "Many performers are at low risk for vocal problems and may have dysphonia associated with sickness infrequently" (Ingram & Lehman, 2000, p. 143). Participants' unprompted written comments and their responses to some open-ended questions further indicate support for this view.

The examples in this and following sections of the chapter offer detailed performance and lifestyle histories of some of the participant PCGS in relation to their reports of "pressure" to perform, highlighting the richness and depth of the data collected in this study.

Participant #1 who spoke of the pressure to sing while in poor health (this was in response – to an invitation to comment on *any other factors you feel might have contributed to voice problems*; Question 22f): “I got very sick and was on tour. I had no choice but to perform and this coupled with my bad PA sound created these problems” (Participant #1). The participant was female, 27 years of age and a non-smoker. She had her first professional performance at age 17 years and had performed continuously since that time. She said that she enjoyed her singing performance work *a great deal*. She averaged 3-4 gigs per week with four-hour performance calls. She sang Pop and Rock *often* and Country, Jazz and R&B *sometimes* in pubs and hotel function rooms *often*. She reported symptoms of hoarseness, strained voice, tired or weak voice, breathy-sounding voice and excessive mucus and phlegm *often*. Participant #1 did not elaborate on her “no choice but to perform” statement but she obviously felt strong pressures to perform regardless of her health. She goes on to link this pressure with a lack of control over the way her voice is produced “coupled with my bad P.A.” (factors attributed to voice problems will be discussed later in this chapter). Although she reported symptoms in the *often* range, these did not prevent her singing frequently across a wide range of styles and venues, nor did they alter her enjoyment of her singing performances.

Another participant reported a similar imperative to perform while sick and expressed a retrospective regret for his choice: “Having to sing and perform with a serious viral infection and temperature. I should not have done the gig” (Participant #10). He was 46 years old and a non-smoker. His first professional performance was at 16 years of age and he had performed continuously since that time. He averaged two gigs per week with four-hour performance calls. He sang Pop and Jazz *all the time*, Country and Rock *often* in pubs and hotel function rooms and large halls *often*, outdoors and brasserie/bar *sometimes*. He reported that after 30 years in the industry he still enjoyed his singing performances *a great deal*.

Participants #1 and #10 did not elaborate on the imperatives “no choice” and “having to sing” in their statements. In the absence of an informing literature on PCGS, I relied on my own experience to hypothesise that the pressure to perform came from both external and internal forces. External pressures may have come from other band members who risked losing the gig if a critical member was absent from the line-up (the singer is the face and voice of the band and therefore any absence may induce audience disapproval and may directly affect the band’s popularity). Internal pressures may have stemmed from his fear of being replaced (Ingram and Leham, 2000, p. 143) and/or from insecurities associated with financial loss incurred through missed performances (PCGS have no income safety net with regards to absences resulting from illness or personal issues). Participant #64 offered an insight into the extent of such a financial loss: “it [missed performance due to illness] cost me over \$2500 in four days”. This participant was male, 38years of age and had been performing for 20 years. He sang 3-4 gigs per week with 5-hour calls in pubs, hotel function rooms, brasserie/bars, and outdoors *often* and in a range of band combinations (solo, duo, trio) where he played guitar *all the time* and sang across a wide range of styles (Pop, Rock, Country, Jazz and R&B) *all the time*. He was involved in *other work* for 50 hours per week as a music school manager, singing teacher, guitar teacher and promotions so he was not reliant solely on performance for his income. However, the financial loss was clearly significant.

While Participant #1 had 10 years of performance experience as a PCGS and may be considered to be building her career, Participant #10 had an established career with extensive experience (30 years), yet he articulated the same pressure to perform regardless of his poor health condition. The responses from Participants #1 and #10 are representative of five other PCGS who also described professional performance commitments (contractual and personal commitments to fellow musicians, management and audience) as taking precedence over their health and gig related environmental issues. These reports confirm my own experience.

PCGS are the “front men and women” of the entertainment industry, the voice and face of the band. There are no understudies in their performance world so PCGS are expected to ‘soldier on’ regardless of health issues.

Clearly the issues around the list of voice symptoms and effects presented in this dissertation are complex. On the face of it, PCGS experience the gamut of symptoms that typically signify voice problems and indeed, most report some occurrence of voice problems. However, the experience seems to be typically short-lived and inconsequential in relation to their performances. If prevalence as it relates to voice damage is a quality involving persistence and impairment as well as sporadic and passing onset, then it is not nearly as significant in PCGS’ experience as might have been predicted from the literature. In fact, the data collected in this study provide a sharp rejection of the literature’s generic contention that PCGS’ performance styles are inherently damaging to the voice.

If, as Russel (1999) suggests, voice symptoms are precursors to voice problems, it is noteworthy that the majority of PCGS participants in this current study did not report a development of symptoms to a problematic stage. A possible factor for this non-escalation may be found in their responses to questions of awareness and prevention of voice problems (Q.24 and Q.26 respectively). These data speak to the vigilance of PCGS in the monitoring of their vocal health.

5.2.1 Vocal fatigue

All 102 participants responded to a combination of questions framed to test their self-monitoring in relation to a range of factors, specifically, the extent and effect on their performances of vocal fatigue and the degree to which they worried about their vocal health and knew when they were in a situation that may have been vocally damaging.

As reported in Chapter 2, prevalence data suggest that vocal fatigue is particularly common among the teaching, singing and acting professions (Chang & Karnell, 2004; Kitch & Oates, 1994; Welham & Maclagan, 2003) with singers being the group most at risk. Participants' self-reports appear to support this opinion (Table 24). However, while PCGS in this current study reported a high incidence of vocal fatigue they also observed it as relatively unimportant. The majority (n=60) said that fatigue had little or no effect on their singing performance (Mean 3.66: s.d.2.388), and while 38 participants reported that the effects were at least troublesome, only four saw its effects as extremely disruptive (Table 9).

Scale point	0	1	2	3	4	5	6	7	8	9	10
Anchor descriptor	No effect at all					Troublesome					Extremely disruptive
Participants	9	6	13	17	15	23	5	2	4	0	4

Table 24: Distribution of perceived effects of vocal fatigue on performance

Vocal fatigue occurs after sessions of prolonged vocal use. The excessive collisions of the vocal folds harm the tissue and healing is needed before normal voicing is possible. In an article on spoken voice, Chang (2004) reported that the recovery time for people with vocal fatigue is yet to be clarified. However, he suggested that theoretically the process for cells to repair might take from hours, to as much as 3 days.

Reports from the sample in this study are consistent with this view. Nearly all PCGS participants (n=97) responded to a question on voice recovery time following fatigue (Question 25c). Forty-three said it took only a matter of hours, 50 said a matter of days, three said a matter of weeks and one said it varied. These data indicate that recovery is relatively immediate for PCGS, for most a matter of hours or days rather than months. As suggested by Kitch, et al. (1994), individual differences in vocal training and performance experience and the nature and extent of voice use prior to the performance may have contributed to findings of vocal fatigue experiences for participants in this current research. The study data provided a test of this proposition in relation to two of the Kitch et al. factors, training and performance experience. Responses to three survey items (Q.1 b&c - age at first professional performance and continuity of performance; Q.2 - duration of singing lessons; Q25 - experience of vocal fatigue) were examined using a Spearman's Rho (nonparametric) correlation matrix, which allowed analysis of associations of the information from categories (Table 25). As indicated in Table 24 while the three measures of vocal fatigue are significantly correlated, the only other variable to be significantly correlated with any of these is *duration of singing lessons*, which is significantly and positively associated with *how often vocal fatigue is experienced* specifically.

Correlations

		Took singing lessons	Duration of singing lessons	How often do you experience vocal fatigue specifically	How long does it take the voice to recover	How much does vocal fatigue affect your performance	
Spearman's rho	Took singing lessons	Correlation Coefficient	1.000	.811**	.277**	.070	.143
		Sig. (2-tailed)	.	.000	.005	.495	.153
		N	102	102	100	96	102
	Duration of singing lessons	Correlation Coefficient	.811**	1.000	.285**	.035	.191
		Sig. (2-tailed)	.000	.	.004	.732	.055
		N	102	102	100	96	102
	How often do you experience vocal fatigue specifically	Correlation Coefficient	.277**	.285**	1.000	.256*	.456**
		Sig. (2-tailed)	.005	.004	.	.012	.000
		N	100	100	100	95	100
	How long does it take the voice to recover	Correlation Coefficient	.070	.035	.256*	1.000	.520**
		Sig. (2-tailed)	.495	.732	.012	.	.000
		N	96	96	95	96	96
	How much does vocal fatigue affect your performance	Correlation Coefficient	.143	.191	.456**	.520**	1.000
		Sig. (2-tailed)	.153	.055	.000	.000	.
		N	102	102	100	96	102

Table 25: Correlation of variables – age of first professional performance and duration of lessons related to vocal fatigue

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

5.2.2 Monitoring of voice problems

Response levels for Question 24a. *How well do you usually know when you are in a situation that may be vocally damaging?* and Question 24b *How much do you worry about your vocal health?*, were generally at the higher end of the 5-point Likert scales. Figure 19 shows frequencies at the top two categories (*often* and *always*) of responses in reflecting the three forms of monitoring with generally higher recognition amongst females.

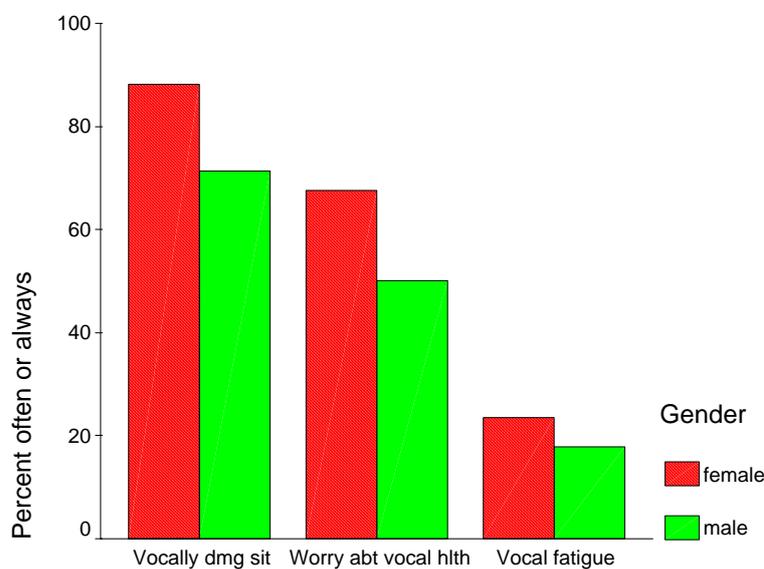


Figure 19: Percentage of singers often or always concerned about vocal health, by gender

*N.B. dmg = damaging; sit = situation; abt = about; hlth = health

Some reports in the literature suggest that singers are acutely aware of any change in their vocal output, specifically changes in tone or range (Kitch & Oates, 1994; Sapir, et al., 1996; Sataloff, 1997). PCGS participants in this study confirmed such awareness. Their reports of fast vocal recovery from symptoms and the apparent non-progression of symptoms to problems may be due in part to this awareness and their subsequent management of vocal health issues through good behavioural practice between sets and after and between gig performances.

Essentially, PCGS reported that they were *often* or *nearly always* aware of vocally damaging situations and generally were alert to the state of their vocal health. Additional support for this contention is evident in the high levels of prevention that were apparent in steps taken by participants to protect their voices, notably through resting the voice, using the right equipment and focusing on technique. Data combined at the two most positive categories of the 5-point scale (often or always) are shown in Figure 20. Females were more likely than males to use every one of the listed techniques, with the greatest gender-based differences being for vocal exercise, and avoiding certain foods or drinks. The majority of both females and males said that they rested the voice, and the minority used vocal exercise.

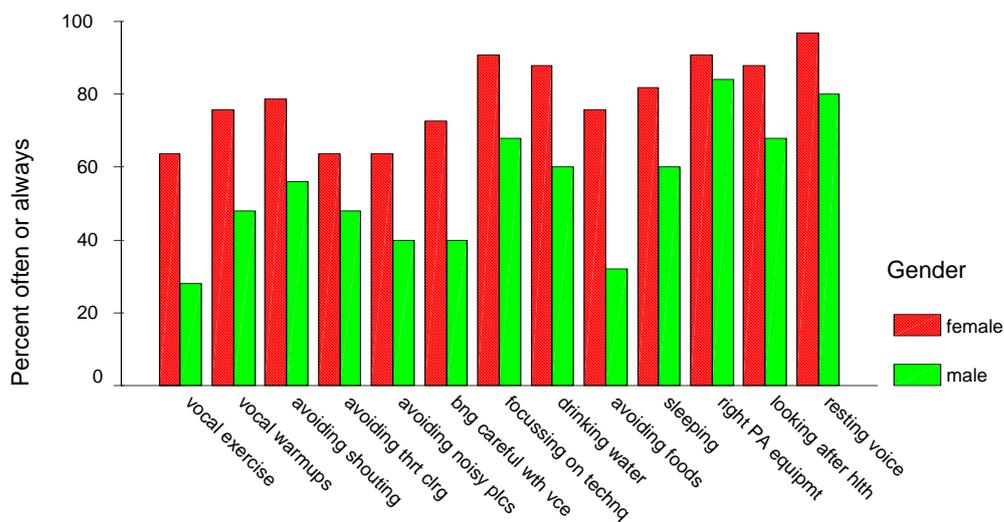


Figure 20: Percentage using various techniques often or always to avoid vocal damage by gender
 *N.B.: thrt clrg = throat clearing; noisy plcs = noisy places; bng careful with vce = being careful with voice; technq = technique; hlth = health

PCGS tell us that they are careful about how they use their voices within the style parameters and demands of their professional singing careers. Seventy of the 101 participants who addressed this item reported using foldback monitors *often* or *always*, with 51% in the highest range (*always*). This is a significant response in light of Lobdell’s (2006) finding that a lack of or, ineffective use of sound production equipment (such as monitoring systems) may lead to voice misuse.

Most participants said that they knew when they were in a situation that might be vocally damaging and they worried about their vocal health. For example Participant #29 clearly demonstrates this awareness:

I love my voice and it's my only source of income so I really try to treasure it. Warm ups and warm downs, water, sleep, dealing with the emotional and physical stress and good equipment is the best thing you can do! (Participant #29)

This participant was female, 27 years of age and began her professional singing career at age 24 years. She used to smoke occasionally but was not smoking currently. She reported 2 years of singing training and she sang Pop style all the time with an average 3-hour performance call at 3-4 gigs per week. She sang in pubs *always* and hotel function rooms *sometimes*. She reported experience of only two voice symptoms in the low range of *not very often*. She experienced vocal fatigue *sometimes* but with little effect on performance. She employed strategies to prevent voice problems *always* and *often* (such as those mentioned in her comment above). These responses are consistent with her statement that she values her voice and is aware of her vocal health needs, and are representative of the other 33 participants in the sample whose performance work was their only source of income.

Generally, PCGS participants believed that their voice function is affected by many factors. They are very aware of the implications of singing over background noise, over amplified instruments and in less than optimum performance environments, but they speak equally of the impact of emotional and physical stress, of periods of non-performance, speaking-voice loads and the impact of these on their singing abilities. Above all they tell how much they enjoy performing with 71 of them rating enjoyment at the highest level and the remainder at one level lower. In addition to recognizing and managing any voice

problems that do occur, the satisfaction and joy they receive from performance may be major factors in the maintenance of a functional career.

5.2.3 Seeking help for voice problems

Only 45 of the 102 participants in the study indicated that they had sought professional help for their voice problems *in the last 12 months*. Table 26 represents responses to a list of voice professionals (Q.19) and indicates the frequency with which participants sought help for voice problems.

Participants' seeking help from ...	(a) Singing teacher	(b)ENT specialist	(c)Other medical specialist	(d)GP consultations	(e)Speech pathologist	(f)Alternative health practitioner	Other than on the list	Total
Number	23	18	2	29	7	13	6	45
Missing	79	84	100	73	95	89	96	57
Mean score	3.70	1.78	1.00	2.14	5.71	8.69		1.04
SD	2.95	1.22	0.00	1.66	4.65	14.41		1.42
Minimum	1	1	1	1	2	1		0.17
Maximum	10	5	1	7	15	48		8

Table 26: Participants' sources of help and frequency for voice problems

Of the 45 participants who responded to Q.19, the majority was most likely to seek help from General Practitioners (Mean=2.14, SD= 1.66) and least likely to do so from medical specialists other than Ear, Nose and Throat specialists (Mean=1.00, SD=1.22). The average frequency with which such help was sought (Mean=1.04, SD=1.42) is low and was not significantly influenced by age group.

For the most part, those who did seek help listed a combination of two professionals. The three common groupings were: Singing Teacher and Ear, Nose and Throat (ENT) specialist; ENT specialist and Speech Pathologist (SP); and General Practitioner (GP) and ENT specialist.

These combinations are not unexpected as in modern medical practice, since treatments generally are managed by a team of voice professionals (Benninger, et al., 1994;

Sataloff, 1997). In a voice clinic situation all members of the team may be present, or individual specialists may see singers in separate sessions where written reports will coordinate the investigation and treatment of voice problems.

The higher result for GP visits in participants' responses is a predictable outcome. Firstly, GPs are the first point of call for any perceived medical problem and secondly, the typical protocol of the Australian medical referral system aligns with a government Medicare (medical cost subsidy scheme) requirement that any medical specialist appointment (ENT or other) is possible only through formal referral of the patient following a consultation with a GP. Participants' associations of GP and ENT most probably reflect this protocol.

As singing teachers become more formally trained (through tertiary pedagogy courses and in-service training at conferences and workshops presented by their professional associations) the practice of teacher referral of a singer to voice specialists (ENT or speech pathologist) is occurring more commonly. Singing teachers who suspect a voice problem may refer students to an ENT directly, but before a consultation can take place the formal referral from a GP is required.

Specialist ENT diagnosis of the perceived voice problem may reflect one or a combination of the following: pathology (for example, nodules, cyst, etc.), organic (for example, reflux), or laryngeal function (for example, muscle tension dysphonia). If the problem is one of function, the ENT will usually refer the singer to a Speech Pathologist (SP) in the first instance for specific therapy for the speaking voice and may send a copy of the investigative report to the singing teacher. However, in my experience, more usually the SP communicates directly with the singing teacher to discuss the diagnosis and appropriate remedial therapies for both the SP sessions and concurrent or subsequent singing lessons.

To summarise - fewer than half of the 102 participants (n=45) reported seeking any kind of treatment. Of those who did, the largest numbers consulted either a GP (n=29), or a

singing teacher (n=23). Female participants were about twice as likely as males to consult singing teachers about voice problems. Of the 23 participants who consulted a singing teacher, all but two reported that the problem sorted itself out or got better.

Seventy participants described their condition as having improved in the last 12 months, 30 participants said that their voice problem had not really changed, while 17 considered that their voice problem had worsened. It may be that these 17 participants were experiencing a real and developing voice problem while others in the sample had experienced symptoms which they could resolve naturally, that is, symptoms associated with occasional periods of vocal abuse (for example, shouting over background noise) or an incidence of acute underlying infection (cold, flu etc.).

It follows that participants would not seek help from voice professionals or specialists if their voice symptoms had *mostly improved* within a short timeframe. For those whose symptoms had *not really changed*, failure to seek help might be a matter of habitual indifference or possibly the symptoms were mild and had little real effect on PCGS' singing performances. Cohen, Noordzii, Garrett & Ossoff (2008) proposed a similar explanation: "Potentially, patients adjust to their voice problem with time and experience less handicap. How patients adapt to voice problems economically and socially is worthy of continued investigation" (p.3).

5.2.4 PCGS' beliefs about voice problems and contributing variables

A range of open-ended questions gathered responses related to variables that may have contributed to the development of voice problems for the PCGS sample. Statistical responses regarding voice symptoms and participants' management of voice problems were then able to be viewed alongside participants' beliefs about the possible relationships of voice problems and variables such as singing styles, gig performance environments, 'on the gig' behaviours and individuals' speaking-voice loads in work other than singing performance

5.2.4.1 *The impact of style on vocal health*

My extensive experience as both performer and voice teacher confirms that poor technique rather than style in itself may be the primary cause of damage to the vocal instrument (Bartlett, 2010); however, it would appear that some style elements do have potential to be harmful to the vocal instrument if employed inefficiently.

PCGS must employ a range of stylistic elements and vocal effects necessary for "authentic" performance in each style (Radionoff, 2006). These elements and effects may include any or all of the following: grit, growl, glottal onsets, scream (particularly for Rock singing); soft onset, yell and vocal fry, (particularly for Pop singing); yodelling, crying and "riding" an "r", (particularly for Country singing); scat - imitating instrumental sounds on nonsense syllables and breathy onset, (particularly for Jazz singing); belt, legit, pop elements (particularly for Music Theatre singing). Any or all of these elements or vocal effects may cross over style boundaries in PCGS' gig performances.

To date, the traditional wisdom of the singing field has suggested that these elements and effects produce a great potential for, if not an inevitable result of, voice damage for singers of CCM styles. Voice science research signals that many style elements commonly produced by PCGS (for example, vocal fry and glottal attack) increase the collision-shearing-

abrasion forces on the vocal folds, while others (such as breathy onset) increase vocal fold tension and all may induce habitual muscle effort in the larynx. These facts are not in dispute, however recent research indicates that vocal productions perceived as vocally abusive may not necessarily be so (Ferrone, et al., 2010). As presented in Chapter 2, there is some evidence that non-traditional techniques may in fact act to strengthen the vocal muscles. My own performance longevity and that of many PCGS in my sample suggests that style elements can be managed in the long term if employed as vocal effects only within a healthy, balanced vocal production. Participants' beliefs about style and any linkage to voice problems (including identification, management and cause) are presented in the following sections.

5.2.4.2 Beliefs about contemporary styles being more damaging than others

Participants were asked to indicate on a 3-point Likert scale whether they believed some contemporary styles were more vocally damaging than others (Q23A). All 102 participants answered this question. A clear majority, 76 (77%) held the belief that some styles were more damaging than others and there was strong agreement across genders (females 83% and males 79%). Further, where participants held this belief, they were asked to list the style or styles they considered as such. All 76 participants provided these additional data with four commenting that “*any style*” could be damaging when associated with poor technique or underlying vocal health conditions; for example: “could be any style if technique is not properly applied” (Participant #16). However the remaining 72 participants named specific styles; 44 nominated one specific style and 28 listed two or more.

At this point, participants' responses appeared to support the views of commentators in the literature that some contemporary styles have the potential to be vocally damaging. However, these responses were complex with attributions of other causative factors in

combination with style rather than attribution to style alone. For example, the following comment from a 33-year old female PCGS is representative of others in the group: “Anything I have to belt out – some of the retro stuff like Abba which are usually right on my upper bridge” (Participant #19). This response includes four individual attributions – “belt” (technique); “retro stuff” (inference to musical period 1950’s-60’s where belt and speech quality were basic to style); “Abba” (the identification of style by naming a particular performance group); “right on my upper bridge” (a direct reference to a laryngeal muscle coordination issue, i.e., registration).

Participant #19 had sung consistently since her first paid performance when she was 17 years of age. She was currently singing pop all the time, dance funk and R&B *often*, rock and country *sometimes*. She sang 2-3 gigs per week through four-hour calls in brasserie/bars *always*, pubs *sometimes and* as an extra category she said she sang on promotion stages *often*. She was employed in work *other than performance* for 20 hours per week as a TV presenter, a teacher of TV presenting, and as a club promotional presenter. Participant #19 is typical of experienced PCGS in the sample. Across her 16 year long career she had performed a wide range of styles in a diverse range of venues.

Another (Participant #73) gave an equally complex description of attribution: “The “new” R&B – all that stuff you hear those poor sods singing in Idol and Popstars. Lots of yelling. You can almost hear the nodules forming!! And since when was fitting 20 notes in a bar good for you!?” (#73). This response includes attributions to: “the new R&B” (a belt style element descriptor); “lots of yelling” (sustained straight tone with high amplitude); “since when was fitting 20 notes in a bar good for you!?” (a technique issue of registration in the form of melismatic embellishment); and “all that stuff you hear those poor sods singing in Idol and Popstars” (style identification through the naming of two ‘Pop’ based TV shows). This participant was female, 37 years of age and a current smoker. She was 17 years of age at

her first paid performance. She was currently singing World Music *all the time*, country, jazz and dance funk *sometimes* at four gigs per week, with 3 hour calls on average. Her performance work took place in a wide range of venues - pubs, restaurants, outdoors and brasserie/bar venues *often* and restaurants and hotel function rooms and large halls *sometimes*. As with Participant 19, she was an experienced PCGS (20 years).

While many participants in this group (n=76) raised issues of the demands of the repertoire for continuous and sustained high vocal volumes through extremes of vocal range, 10 participants named Belt specifically as a style that could be *more damaging*. As presented in Chapter 2, Belt has been the subject of a number of research reports and is variably described as both a style and a technique and is a necessary element in all CCS styles to some degree. Most participants in this group (n=10) linked Belt with other issues. For example: “Belt - imitation of other singers who reach notes within their natural vocal range – each voice has its own comfort range which should be embraced” (Participant #39). This participant was female, 53 year of age with 33 years experience as a PCGS and she greatly enjoyed her singing performance work. She had been an occasional smoker but had stopped smoking. She sang across a wide range of styles at 2 gigs per week for 3 hour calls in a large hall *always* and other venues *not very often*. She raises the real world situation of the “imitation of other singers” where PCGS ‘covers’ singers will sing in inappropriate keys and produce potentially damaging style elements in order to copy the original recording artist.

This need to copy may be driven by personal choice but PCGS may perceive also an expectation from audiences and fellow band members. Participant #43 clearly expresses this view while adding an attribution to heavy voice use: “Singing in incorrect keys because musos change keys to suit their sound. Singing excessively over a short period of time”. This participant was an experienced female PCGS (24 years), 41 years of age and a non-smoker who *greatly enjoyed* her singing performances. She had 5 years of training and sang 2-3 gigs

per week with 4-hour calls singing pop, rock, funk/dance *all the time* and played percussion *all the time* in addition to singing lead for 80% of the performance time and backup for 20% in a wide range of venues *often*. Given her extensive experience it is interesting that she would feel pressure to sing in keys that were dictated by her fellow band members rather than those appropriate to her vocal range. Her description of “singing excessively” is a reflection of singing in inappropriate keys.

Other participants reflected the complexity of issues that might contribute to voice problems including vocal range. For example: “Singing out of range, not warming up properly, having to perform while sick, smoky environments” (Participant #32). This example points to a range of issues including - lack of technique (not warming up), pressure to sing while sick (expectation of others; as discussed earlier) and poor environmental conditions (smoke). Whether through direct reference: “Keys that are too high” (Participant #58), or inference: “comfort range should be embraced” (Participant #39), PCGS participants recognised the problem of singing in incorrect keys but frequently feel pressured to do so.

From my own experience as a PCGS, and through observation of my singer students I can report that the choice of performance keys can have significant impact on PCGS’ vocal health, particularly for those ‘covers’ singers who perceive a necessity to sing in the same key as the recording artist - regardless of their personal vocal register parameters. The choice of key affects the vocal range (notes from lowest to highest) of the song and this can be particularly problematic for female CCS where authentic style vocal production of the repertoire demands speech quality (a thyroarytenoid dominant muscular action) with lower register production throughout their vocal range and taken past the 2nd passaggio (register transition). This is a critical area of registration for female CCS (Bb4 and for some repertoire as high as Eb5) and the development of technique that supports this particular style production is a major area of contention that fuels the classical/contemporary divide.

Classical literature describes the natural female register transition (a cricothyroid dominant muscular action) to be around E4-F#4, therefore classical pedagogues maintain that CCS are pushing ‘chest’ voice (the generic term for a thyroarytenoid dominant muscular action) beyond the limits of vocal safety (Chapman, 2006; Miller, 2004). If the singer is employing speech quality with a loud, bright, straight tone this is referred to as Belting (common in musical theatre and rock styles). If speech quality is maintained over a lighter tone, with some release to vibrato at the end of long held notes, a belt/mix will be produced (common in many pop styles). Whatever the degree of application, PCGS belt quality must be maintained across and through all registration shifts. This is especially evident in Rock style singing.

5.2.5 Rock style and vocal health

Of the 72 participants who nominated specific styles, the majority held the view that *Rock* was the most vocally risky and perceived it as *more damaging* than other contemporary styles (Table 27). Within this group, 28 nominated Rock specifically and 32 others volunteered further definition by nominating *Heavy Rock* and a range of rock-related ‘scream’ styles including: Metal, Death Metal, New Metal, Punk, Scar, Thrash and Grunge. As can be seen in Table 27 these scream styles were grouped together as a second Rock category, Heavy Rock.

Style	Frequency
Rock	28
Heavy Rock (inclusive of Metal, Death Metal and associated scream styles)	32
Pop	14
Fusion	11
Dance/Funk	5
Belting	8
R&B	3
Country/Yodeling	3

Table 27: Participants views of” styles that are potentially “damaging

*NB 44 participants nominated one specific style as “damaging”, while 28 others nominated multiple styles

The following comments from three participants who nominated Heavy Rock (n=32) are typical of the responses from this group: “Any forced or unnatural use of the voice as in heavy metal, rock singing. Yodelling even” (Participant #33); “Shouting or screaming rock style must be damaging over time” (Participant #71); and “Rock or any style requiring extreme vocal use. A lot of the contemporary songs have the lead vocalists literally screaming for effect. It’s madness!” (Participant #44).

Participant #44 was a 32-year old male with 7 years vocal training. He sang pop, rock, dance/funk and R&B *all the time* currently. He began singing professionally at the age of 16 years and had six months as the longest break in his 16 years in the industry. He currently worked five gigs per week at an average of 3 hours per performance call. Participant #33 was also male, 41 years of age who had his first paid performance at 17 years of age. He sang Rock and Country *all the time*, managing 4 hour calls for 5 gigs per week in pubs and clubs *all the time* and restaurants and hotel function rooms *sometimes*. Similarly, Participant #71 was male. He was 50 years of age, and had his first paid gig at age 25years. He was singing pop, rock, country, and old time *all the time* at 3 gigs per week with an average of 4 hours for each performance call. His gigs were in clubs *often* and restaurant and hotel function rooms *sometimes*.

All three participants were experienced PCGS (with years of performance 16, 24 and 25 years respectively). They all reported singing Rock style *all the time* in their gig performances, but differentiated between the Rock style that they sang and the scream styles represented in Table 5 as *Heavy Rock*. This differentiation may be a reflection of aesthetic bias within the same basic style group or may represent the participants’ perception of danger in the style-driven vocal production of singers in the Heavy Rock category.

5.2.6 Linkage of style and other variables

Although PCGS supported the literature's linkage of style and vocal damage, *style* did not rate highly in a list of factors which they believed might have contributed to their voice problems (Table 10). Within the group of 76 who believed that some contemporary styles were more damaging than others (Q.23), 38 qualified their response by linking vocal damage to a range of variables rather than to style alone.

For example, participant #17 recognised the vocal health issues inherent in *Heavy rock* singing with relation to highly amplified instruments: "Heavy metal, hard rock - any styles which cannot be played without distortion and amplification" (#17). At 26 years of age he was singing rock *all the time* for 3-4 gigs per week with 2-hour calls in pubs *all the time* and large halls, outdoors brasserie/bar *sometimes*. In addition to the heavy vocal demands of his rock singing performances he had an equally heavy speaking voice load with 25 hours per week employed as an actor/entertainer. The impact of heavy speech loads in work *other than singing* will be discussed later in this chapter.

Clear themes emerged from the 38 'qualified' responses on style and these were categorised into four groups: style and mimicking recording artists, style and lack of training, style and amplification, and style and performance environment. For example, the following responses are representative of the grouping Style and mimicking: "Rock especially if you are trying to mimic certain styles/artists, trying to achieve likeness with poor vocal fold closure/technique" (Participant #94 – a 26 year old male); Style and lack of training - "Heavy metal – but I feel it depends on the person and if they have had training or not" (Participant #32 – 28 year old female singer); Style and amplification - "Heavy metal, hard rock, any styles which cannot be played without distortion and amplification" (Participant #17 - a 26 year old male singer); Style and performance environments - "Any form that has amplified

instruments attached to inconsiderate musicians or the singer is constantly trying to reach over the band – and the performance is high energy and in a smoky venue” (Participant #67 – a 50 year old female).

Through these combinations, participants linked a range of factors to vocal damage. This trend became more evident in their beliefs about whether singers in general are more prone to vocal damage than other groups (Q 23c).

5.2.7 Participants’ beliefs and attributions about the causes of their voice problems

Participants’ responses to open-ended questions in this section of the survey instrument (Questions 22f, 23b and c, 25b, c, e and f, and 26n) generally were particularly detailed. Ninety-six rated the extent to which listed factors (Q.22) had contributed to voice problems they had experienced. The non-response of six participants was consistent with their earlier comments, that is, that they had experienced only minor infections (colds, sinus conditions etc) or had experienced no problems at all (Q.20). Data in Table 28 show that while each of the five factors was considered contributory, the highest-ranking distributions indicate *environment* and *amplification equipment* as most prominent.

Factors contributing to voice problems	Did not really contribute	Contributed a bit	Contributed moderately	Contributed a fair bit	Contributed quite a lot
a. The environment you were singing in	16	19	13	22	26
b. The type of singing training you have had	69	11	7	5	3
c. Lack of singing training	45	17	7	14	11
d. The style you were singing	34	14	15	17	15
e. The equipment you were using e.g. poor amplification	35	16	14	13	18

Table 28: Factors contributing to voice problems

The data indicate that PCGS participants were most likely to believe that their performance *environment* had contributed most to their voice problems. Conversely, they were very unlikely to report type of *singing training* as a contributing factor. In terms of gender, females were more likely to state *environment* or *equipment used* as an influence whereas male participants were more likely to blame *environment* and *singing style* (Figure 21).

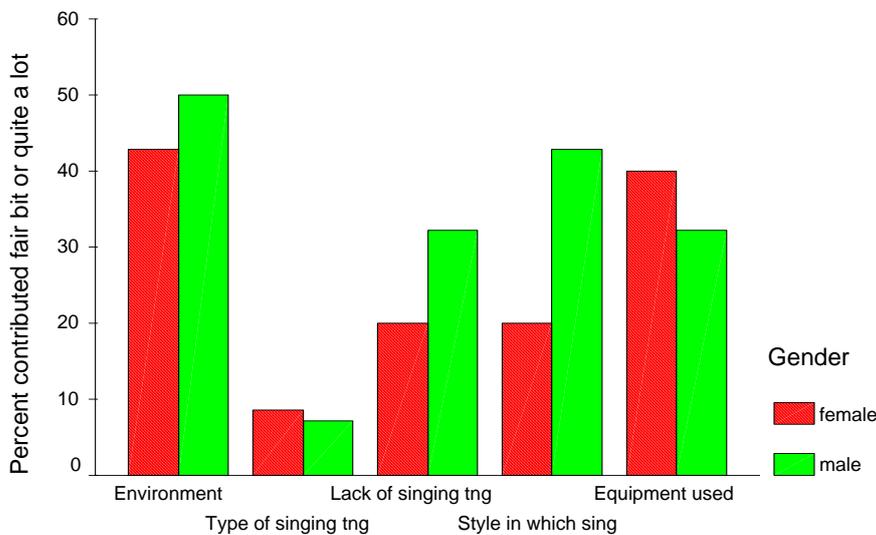


Figure 21: Percentage of participants reporting various influences on voice problems by gender

These participants’ responses are in line with predictions in the literature that performance environments may impact on singers’ vocal health. The literature reports in the literature were predominantly focused on the importance of fold back monitors (Borch & Sundberg, 2002; Lobdell, 2006) but offered little insight into the range of monitor systems, their application or their effectiveness with respect to the wide range of PCGS performance situations.

Although fold-back monitors are important, they are only one component in a complex network of electronic amplification that PCGS employ to improve the quality of their performance environments. Fold-back and alternative methods of monitoring (side fill

and back fill monitors) must be integrated into an effective P.A. system, which then needs to be engineered appropriately for each performance space.

5.2.8 Acoustics and sound equipment

PCGS commonly refer to live sound reinforcement as P.A. (public address) equipment, inclusive of amplifiers, mixers, speakers and microphones. Question 14(a) & (b) was framed to investigate participants' understanding of, and involvement with P.A. equipment.

To protect and maintain their vocal health, PCGS must employ P.A. effectively and efficiently through fine electronic adjustments to the volume controls, the frequency band equalization (E.Q.) and if available, digital effects. The goal is to create a balanced volume throughout the performance space and to build and/or enhance the room acoustics. These engineering skills are crucial to vocal longevity for PCGS as they compete with amplified instruments in a background of continuous white noise (i.e., general conversation and communication between patrons and staff in addition to noise created in food and drink preparation), and in poor acoustic spaces (e.g., hotel function rooms, pubs, clubs, alfresco restaurants, and other open air venues). In the absence of efficient P.A., PCGS can only increase their vocal volume through over production of muscle fatiguing and unsustainable sub-glottal pressure levels; in other words, they will sing with excessive loudness in order to hear themselves.

As mentioned earlier, Borch & Sundberg (2002) and Lobdell (2006) emphasized the need for efficient foldback monitoring. Lobdell included a sound engineer in her case study as she proposed that sound engineers should be employed by the singers in her sample for most of their professional performances. This could reflect a location-based, situational aspect of her study (her study was carried out in Louisiana, U.S.A.) as this was not the case

for the PCGS in my sample. Of the 94 participants who responded to a Question 14a *Who operates the P.A.?*, the majority (n=64) said that, for all but large gigs (for example, concert, open air), they or other band members were responsible for the set-up, pull down and in many instances the operation of the P.A. equipment for the duration of the performance.

Given the itinerant nature of PCGS performances and the subsequent range of their performance venues, knowledge and management of P.A. may be a major factor in longevity for PCGS. All 102 participants answered the question regarding their understanding of how P.A. works (Q.14b). Of the 71 who said that they were responsible for operating the P.A., the majority (n=45) claimed a strong functional understanding and 15 said they had a moderate understanding, while the remainder (n=11) said they understood *a little or not much*.

In the following section, PCGS participants report other aspects of their real world performance lives previously unreported in the literature, including their beliefs about the range of factors that affect their vocal health, being more prone to voice damage than other professional voice users, the relationship of training and vocal health, voice use in their non-performance work and singers as vocal athletes.

5.3 PCGS' beliefs about voice problems and contributing factors

The compounding realities of PCGS' non-performance activities such as hours of rehearsal and the physical rigors of touring have not been addressed by previous reports. A comment offered by Participant #20 exposed a range of variables that she considered had contributed to her voice problems. In response to the question of styles that may be potentially damaging she had identified "rock, heavy metal, dance and funk" but suggested the following additional factors:

I also take into account rehearsal time as well, which can be anywhere from 1 night a week to 3 nights/days...When I started performing as a

soloist, I became more aware of voice tiredness as I worked a lot more gigs doing sometimes 2 gigs a day in restaurants and cafes, still performing in pubs and other social events (i.e.: parties etc). Touring, I find is the most taxing of all because of the travelling in a bus factor, hence lack of sleep and singing 9-12 gigs in a row (Participant #20).

This participant was an experienced, 37-year old female PCGS who had her first professional performance at 15 years of age. She had been a smoker *in the past* (Q.28d). She had no voice training and was currently singing folk *all the time*, and R&B, Rock and Pop *sometimes*. She was engaged in 3-4 gig performances per week *currently* with an average 4-hour call in pubs *always* and at festivals *often*. She played guitar and bass while singing, and sang 95% of her time as lead and 5% as back-up singer. She rehearsed with her *band* twice per week for 2-3 hours per session. Additionally, she rehearsed daily for 1-2 hours *solo*. She rated symptoms from the list (*tired or weak voice*, and *breathy sounding voice*) as having occurred *sometimes*. In considering whether some symptoms had most impact on her ability to perform (Q18f), she said that “emotional stress affects mostly”. She reported her worst voice problem (Q.20a) as “singers’ nodules” and rated the effect on her performance (Q.20b) as *extremely disruptive*. This organic voice problem had occurred in the last 12 months and she attributed her ongoing voice issues to poor amplification at gig venues. She identified emotional stress as having a major impact on her performance but style did not factor in her attributions of cause. Interestingly, none of these issues had halted her career and she said that she enjoyed her singing performances as much as she ever had. She continued to earn her living with 3-4 gigs per week. At the time of completing the survey her voice problems had been managed or had resolved. This detailed account of the work-life of an individual PCGS (Participant #20) highlights the need for all variables to be taken into account when assessing the causes of vocal health issues for this group of professional voice users.

The comments from Participant 20 are supported by another 61 participants, who spoke of *other factors* that they felt might have contributed to their voice problems (Q22f).

These *other factors* included: loss of voice after cold and flu, emotional stress and physical tiredness, illness (including having to perform while sick), habitual smoking and drinking, singing technique issues (such as singing out of range, high vocal volumes and not warming up properly), frequency of singing, spoken voice activities and the influence of other musicians and sound technicians who were involved in their performances.

Forty-seven participants identified a single contributing factor such as the common cold and flu. Nine of this group identified a specific traumatic injury as the cause of their voice problems. For example, Participant #15 (a 30-year old female) attributed her ‘worst’ voice problem to a catastrophic trauma: “*Most problems were caused due to physical injuries caused in a car accident and occurred due to this*”(#15), and Participant #23 (a 34-year old male) reported, “*Back and rib strain and pinched nerves putting pressure on the diaphragm*”. Other issues included stress or tiredness, smoking, poor speech production, singing in keys that were out of range, poor P.A., and smoky environments.

Fifteen participants described two or more factors. For example, a 28-year old female participant suggested four factors, “*Singing out of range, not warming up properly, having to perform while sick, smoky environments*” (Participant #32). The first three factors were additions to the list (Table 10) while the fourth qualified a listed item of Q.22 (*the environment you were singing in*).

Six participants commented that other musicians and sound technicians had negatively affected their performance, and that compensating for these negative influences had contributed to their perceived voice problems. For example, a 53-year old female participant noted: “*Deaf sound engineers or egotistical technicians who manipulate the bands to suit themselves*” (#39). In a related vein, another female (41 years old) suggested that her voice problems were directly attributable to “*Singing in incorrect keys because musos [musicians] change keys to suit their sound*” (Participant #43).

Seven participants attributed their voice problems to lifestyle behaviours, notably smoking and drinking. For example, a 36-year old female recognised smoking as an issue but qualified her response: “*Smoking may be a factor, although since I stopped smoking my voice is worse*” (Participant #38). A 49-year old male PCGS revealed that “*drinking and smoking for last ten + years*” (Participant #77) may have contributed to his voice problems.

These self-reports highlight the unhelpful preoccupation of the literature with style as the major contributor to CCS voice problems (for example, Miller, 2004; Osborne, 1979a). This preoccupation probably springs from an etic view of the CCM field, where commentators lacked knowledge of and consequently empathy with the impact of other variables such as PCGS performance workloads, environmental conditions and lifestyle behaviours.

5.3.1 Beliefs about singers being more prone to vocal damage

One hundred participants responded to a question about whether singers in general are more prone to vocal damage than other voice professional groups (Q.23c). Sixty indicated that they were (Table 29). This affirmative view was equally distributed across gender with majorities of females (65%) and males (54%) agreeing.

Q23C Do you think that singers in general are more prone to vocal damage than other groups	Probably Yes	Not Sure	Probably No	No response	Total
	60	25	13	4	102

Table 29: Beliefs about singers in general being more prone to vocal damage

Those in the *probably yes* group (n=60) added written comments offering a range of qualifications to support their beliefs. Some were basic and definitive, attributing cause to one factor. For example, Participant #18 (50-year old male) attributed it to *lack of training*: “If the voice is not trained” (Participant #18). Some responses were more descriptive:

“Training gives heuristic knowledge – ignorance of physical limitations leads to singers attempting the impossible – like a sprinter trying to be an acrobat” (Participant #39 was female and 53 years of age). Others were couched in inclusive rhetoric, linking the risk of vocal damage to professional voice users generally: *“Because you hear a lot about them [singers] more, but in general life, I hear a lot of rough speaking voices on young women...also in sports, coaches and teachers. Anthony Robbins (motivational speaker) is very bad as well”* (Participant #35, was female and 29 years of age).

Some participants suggested that high frequency speaking and singing were equally problematic. For example, Participant #12 (a 24-year old female) proposed that singers were most at risk, *“Because they are using their vocal chords generally more”*, while Participant #27 (a 26-year old female) thought that *“Anyone using their voice for singing or talking is putting more strain on those muscles – like an athlete is more likely to pull and strain a muscle than someone who isn’t an athlete”*. Participant #53 (a 29-year old female) continued this theme: *Use more voice, more problems”*. In all, 18 participants cited the frequency of singing as problematic, combining it with other variables such as vocal volumes, on-the-gig behaviours, venue environments, and style. Participant #17 (a 26-year old male) suggested that: *“Using the voice at high output levels for any length of time, no matter how slight, is damaging”*, while Participant #37 (a 34-year old male) volunteered that high speech volume over background noise plus other environmental factors were problematic: *“Constantly breathing in smoke, temperature extremes, talking above DJ etc. during breaks”*(Participant #37).

Most participants (n=60) believed that singers have greater propensity for vocal damage than other occupational voice groups and many painted a complex picture of two or more factors rather than individual ones in their attributions of cause. These were grouped

thematically into six categories: *lack of training, gig environments, frequency of voice use, gig behaviour, speaking-voice load, and awareness of vocal health and physiology.*

The strength of participants' associations between a factor or combination of factors and the propensity for vocal damage is reflected in a variety of ways. For example, the following responses focused on a single factor. Participant #91 highlighted lack of training: *"I believe that an uneducated singer can do damage to their voice no matter what style they are singing and are more prone to damage"*, while Participant #12 highlighted voice load: *"Because they [singers] are using their vocal cords generally more"* and, Participant #21 focused on *technique: "If they are singing with wrong technique they will do vocal damage. With the right technique there should be no reason for vocal damage"*. While the single factors provide important data, 17 participants identified a combination.

5.3.2 Training and associated factors

Although participants did not rate *type of singing training* highly as a contributing factor to their voice problems (See Table 28) the need for training dominated the various combinations of factors across 60 sets of comments about singers being more prone to vocal damage.

In all, 15 of the 60 participants in this group believed that a lack of training significantly increased the risk of vocal damage. Eight of the 17 combined it with one or more additional factors (see Appendix 2). For example, Participant #89 linked training and awareness of vocal health: *"I believe if a singer has been trained correctly and they know how to look after their vocal health this shouldn't be too much of a problem"*. Participant #16 connected training with consciousness of vocal problems: *"If singers are trained they are probably more conscious about vocal problems than the general public"*, while Participant #2 associated it with ego and poor gig environments: *"Many singers are hesitant to having vocal*

training as it bruises their egos. Also smoky environments and poor foldback increases chance of vocal damage” (the issue of training and the need for a specific pedagogy for CCM singers will be discussed in greater detail later in this chapter).

Another group of participants emphasised physiology in their comparisons, comparing voice to other physical activities. The following comment by Participant #27 typifies this awareness: “Anyone using their voice for singing and talking is putting more strain on those muscles – like an athlete is more likely to pull and strain a muscle than someone who isn’t an athlete.” Further, “any person involved in an activity that continually uses or overuses a part of their body – that part is probably more prone to injury or at least more at risk”.

While the responses shown above exemplified a belief that singers are more prone to vocal damage than other groups, some participants (n=17) were more inclusive and specific and identified who they believed were at equal or greater risk of voice damage than singers. For example: “I would say yes, but public speakers and actors, DJs who use their voice constantly as well, may have similar problems [to singers]” (Participant #15), and “I believe any professional who uses his vocal tool for his profession (be it actors/lecturers/teachers, etc.) as well as singers are equally prone to vocal damage” (Participant #43).

5.4 The effect of speaking voice load on vocal health

As reported in Chapter 4, PCGS use their speaking voices during and after gigs often in environments with poor acoustics and in the presence of loud background noise. A comment from Participant #13 highlights the vocal health implications of this speaking voice use: “In the past I used to talk a lot with my friends in the room, but the music was too loud that sometimes I was without my voice the next day” (Participant #13). Participant #67 highlighted a possible reason why PCGS did not leave the noisy environment between their

performance sets: “Very rarely is there a “gig room” where the band is separate from the audience – so it is very difficult to remove yourself from the environment and smoke” (Participant #67). Participants’ responses and my insider experience confirm that this lack of dedicated, quiet space is typical of the most common performance venues for PCGS: namely pubs, bars and restaurants.

PCGS participants reporting the vocal health implications of their past ‘after gig’ social voice use raised the associated factors of alcohol consumption and late night eating. For example: “Kick on, drink too much, abuse my body, voice etc. generally be stupid” (Participant #3), and “I used to get drunk with my fellow band mates and party for a long time” (Participant #62).

Participants in this study were asked to document the duration of their gig performances and the additional time involved with setting up and taking down instruments and sound gear but they were not asked to specify the actual timing of gigs. Therefore, I rely on my personal experience to report that the average gig finishes between 11.00 p.m. and 1.00 a.m necessitating PCGS to eat late (i.e., after the gig) as food is rarely included in the gig contract. Taking into account the additional hour to break down instruments and P.A., fast food is often the only option available to PCGS in the early hours of the morning. The following comments exemplify this: “Talk too much and eat bad food (e.g.) fatty and cheesy” (Participant #44), and “Sometimes I would go socialize with friend[s], see other bands, or go have dinner with friends” (Participant #15). This is important background knowledge for those who train and care for PCGS as style is most often their primary focus, whereas tiredness, extended voice use and laryngeal reflux (exacerbated by fatty and spicy foods) may be the cause of voice dysfunction. Participant #30 (a 29year old female) offered an age related perspective firmly situating her ‘partying’ behaviours with early career experiences: “As you get older you don’t seem to bring half the audience home with you like in the early

days” (#30). Participant #64 (a 38 year old male) offered a similar insight: “I used to party nearly always – but now with family etc. – Kids get me up early so I try to get more sleep than in the past” (#64).

Overall, participants reported very heavy, non-singing related voice use across a range of activities including gig-related social speaking, speech voice use during performances and the additional day-to-day communications with family and friends. As well, for many in the sample, involvement in work *other than singing* (Q.17) demanded additional speaking voice use.

5.4.1 Non-performance speaking voice use

During the pilot studies, it became apparent that in many cases participants’ *other* work was “speaking-voice” focused; that is, participants’ speaking voices were important for their professional functioning across the range of their employment (Fritzell, 1996; Titze, et al., 1997; Verdolini & Ramig, 2001). Therefore, it was considered that the extent and frequency with which participants used their speaking voice should be investigated as part of a complete picture of vocal health for PCGS as a group.

In addition to their gig performances, 65 participants reported that they were regularly *employed in work other than singing*. They listed 28 different occupations where they were working for up to 50 hours per week, averaging 20.92 hours (*s.d.*=12.57). Females reported significantly more hours of *other* work than males (Kruskal-Wallis: $X^2_{(1)} = 13.204$, $p < .001$). There was no effect for age.

To further investigate this *other* work, participants were presented with a 5-point Likert scale to rate the *noisiness of their workplace*, *how often they used their speaking voice*, and how often they needed to *speak more loudly than normal* in this workplace (Table 30).

Participants	noisy workplace	use of speaking voice	speak more loudly
Number employed in work other than singing	66	66	65
Singing work only	35	35	35
No data entered	1	1	2
Mean on 5point scale	2.82	4.47	2.85
Std deviation	1.42	0.88	1.28

Table 30: External conditions related to speaking voice

Few of the 65 who reported being employed in work *other than singing*, said that their workplace was noisy (Mean=2.82, *s.d.*=1.42). However, the responses to use of the speaking voice were statistically significant with the majority reporting that they *most often* or *always* used their speaking voice as part of their work (Mean=4.47, *s.d.*=0.88). In relation to how often they needed to speak more loudly than normal, most fell at the lower end of the frequency range (Mean=2.85, *SD*=1.28).

These data suggest that for the majority of PCGS participants, their *other* non-performance related work did not occur in noisy environments and they were not required to speak more loudly *than normal* in the course of their work, so the noisiness of the context did not emerge as a problematic factor. However PCGS participants indicated that they are likely to be employed in *other* work that is heavily voice related. This work may add significantly to their overall voice loads (other work + performance voice use) and should be factored into any investigation of voice dysfunction for the group.

To further illustrate this point, four participants (n=66) offered detailed descriptions of the impact of their non-performance based employment on their vocal health. Comments from Participants #43 and #62 are representative of these responses and illustrate the tendency for a singer to use his/her voice as the principal tool of trade in work activities additional to singing. Participant #43 was a 41-year old female who was engaged in a wide range of speaking-voice centred work: “Actor (TV, commercials, video, television – one off, anywhere from 1 day to a week at a time), Voice-overs – this sort of work constantly

changing”. At the time of completing the survey she reported working 2-3 performance gigs per week with an average of 4 hours performance time for each gig. She was singing across a range of styles including pop, rock, dance/funk styles *all the time* and jazz and R&B *often*. In the past, she had sung pop and jazz *all of the time* and rock and funk/dance *often*. In addition to her frequent gig singing she was employed in heavy speaking voice occupations (theatre production and voice over work). It is beyond the scope of the collected data to ascertain whether one voice related activity (speaking or singing) or the combination of the two produced her reported experience of “strained voice” *often* and “hoarseness or roughness of the voice” *sometimes*, however it would appear that on average and given the addition of everyday speaking voice use, Participant #43 was speaking more than singing.

Similarly, Participant #62 was involved in a range of spoken voice activity in addition to her gig performances. She was representative of four other participants in the sub-set (n=60) who reported ‘theme park’ as their other work. Ingram (Ingram & Lehman, 2000; Sundberg, 1989) and Lehman (2000) specified a difficulty for Theme Park singers and actors while addressing the management of high-risk performers: “Typical dysphonic performers who are seen clinically are at a higher level of risk with increased vocal abuse, misuse, or sickness. However, there is a group of performers who work in theme parks that present even greater vocal risk” (p.143). Participant #62 described her occupation as “Attractions presenter” and she added, “I prefer my singing work to my other job”. This participant was a 23-year old female currently working 2-3 gigs per week with 4 hours on average for each gig. Currently, she was singing pop *all the time* and dance/funk *often*. In the past she had sung pop *all the time* and rock *often*. She reported experiencing “hoarseness or roughness of the voice” *often* and “strained and tired or weak voice and inability to get high notes” *sometimes*. If, as the literature suggests, theme park performers are one of the most “at risk” groups for occupational voice problems, this participant’s reported voice symptoms may reflect a strong

association with her speaking-voice load in isolation from or in combination with her singing voice work (although no determining data were collected in this study).

The remaining two participants in this group offered comment on another area of voice use, that of parenting their children. They believed that this activity should be considered in terms of the speaking-voice loads involved. Both were female. Participant #34 was a 45-year-old female PCGS who commented that she was also a “teacher aide” in addition to her role as “a mother with constant voice disciplining of children”. She was currently singing jazz *often* and rock, country and music theatre styles *sometimes*; in the past she had sung pop, rock and country *all of the time*. Currently, she worked 2-3 gigs per week with an average of 4 hours performance time for each gig. In response to the question on voice symptoms, she reported having experienced only mild voice problems over the past 12 months and related this specifically to “physical tension”.

Participant #5 was female and 43-years of age. She was a mother of two school age children and worked in the production of TV documentaries in addition to her gig work. She emphasised awareness of the impact of speaking-voice habits on singing-voice sustainability: “I was producing TV educational documentaries part-time, but have put that on hold. I have 2 children and help out at school sometimes. Since becoming a parent I use my voice a lot more and I’m aware my speaking voice has had to adapt/change and be treated with care to preserve for singing”. At the time of the survey she was singing jazz style *all the time* and dance/funk and R&B *sometimes*. In the past pop, funk/dance and R&B had been her most regularly sung styles. She was working 2-3 gigs per week currently with an average of 5.5 hours performance time for each gig. In response to the question on voice symptoms, she reported hoarseness or roughness of the voice *sometimes* - but commented that these appeared to relate to infection rather than voice load. As previously reported, this view is supported by the literature (Ingram & Lehman, 2000; Sundberg, 1989).

The extensive range of voice related activities evidenced in the comments of these four participants, points to the need for further research that explores the total voice use of PCGS rather than the general focus of the literature on singing voice and style production.

5.5 PCGS as long distance vocal athletes

In the literature of singing voice, professional singers are commonly referred to as “vocal athletes” in recognition of their heavy singing and speaking voice loads. For example, voice scientists, Schlomicher-Their and Weikert (2006) referred to singing as an athletic activity: “Professional singing must be regarded as a high performance sport; it requires special training conditions and top physical performance. Singing is an athletic activity and as such requires good physical fitness and coordinated interaction” (p. 139). Noted otolaryngologist Sataloff (2000) also clearly draws the athletics metaphor: “Many of these patients place Olympic demands on their voices and must meet standards of near-perfection to succeed as vocal artists” (p. 923).

By their own reporting, the PCGS participants in this current study must qualify as ‘long distance’ vocal athletes as they describe the high frequency and extensive durations of their singing voice use, their extensive and sustained, heavy speaking voice loads over continuous and high intensity background noise, and for many, an engagement in voice intensive employment in addition to their performance work. They also describe an engagement in a wide range of performance-related physical activities. These include the physicality of playing an instrument in addition to singing and the setting up and pulling down of musical equipment and sound gear prior to and after each performance (see Chapter 4). For many PCGS, formal and informal choreography/movement is an expected component of their performances (for pop styles this may include fully-choreographed dance routines within a group of dancers). This physicality is a form of artistic and musical expression and is

used to create performance energy and as a visual stimulation for the audience. Participant #73 was one such PCGS. Working well beyond the criterion for inclusion in this study, she offered the following detailed comment describing the frequency, duration and the diversity of her gig performances:

Gig times vary from venue to venue. Some are 2 sets (45 minutes) some are 3 1/2 hour sets over 2 1/2 hours. Some are concerts that last 50 minutes, or in 2 acts of 40 minutes. I could have one each of these in any given week. I've put the average at 2 or 3 per week, but I also work doing school shows - this could mean doing anywhere between 30-50 one hour shows over a period of 2 months or so. Up to 10 shows a week (with normal gigs on top of that). (Participant #73)

This PCGS is representative of others in the sample who do not fit into a stereotypical model of the CCM singer but use their voice in many and varied performance styles, in various venues to a wide range of audiences. Her performance schedule of world music, country, jazz and dance/funk styles, speaks to the high functional demands that PCGS place on the laryngeal mechanism in terms of frequency, range, amplitude and acoustic variation. Self-reports of PCGS in this study, as exemplified by (Participants #20, #2 and #73), present pictures of PCGS' frequent and sustained vocal loads that qualify them to be considered as the "long distance" vocal athletes of the singing profession.

If, as the literature suggests (Ferrone, et al., 2010) the voice tires more quickly from inefficient use than from too much use, then it is possible that PCGS develop the muscle resilience and strength which supports their extensive performance schedules through their frequent and extraordinary voice use. A specific training regime could prepare all singers for extraordinary as well as traditional vocal production regardless of style. The following section gives voice to the participants' beliefs about the need for and value of training for CCM singers.

5.5.1 PCGS' beliefs about voice training

As reported in Chapter 4, 74 participants described some duration of training (Q.2b) before and during their careers. More specific research is needed to ascertain whether or not training increases performance longevity for the group; however, data from older participants (45+ years) indicate long and continuing careers with little or no singing training in their performance backgrounds. For example, Participant #58 reported no singing training either prior to or during her performance career. She was 54 years of age, and had her first professional gig when 16 years old. Her only break in this long career was 12 months “many years ago”. She was currently performing 2-3 gigs per week with 4 hour calls on average and she played an instrument *all the time* during performances. She sang across a range of styles (rock and jazz *all the time*; pop and Latin *often*) in brasserie/bars *all the time* and large halls and pubs *often* or *sometimes*. She reported few voice symptoms and reported her worst voice problem as an insignificant event: “tickling sensation - couldn't sing for a few minutes”. She *hardly ever or never* did vocal exercises or warm ups but she avoided shouting, screaming and throat clearing and used efficient P.A. equipment *always*.

Participants such as #58 may be the survivors, the ‘natural singers’ whose intuitive approach to their singing in some way protects their instrument. They may be genetically predisposed to vocal health possessing a resilient laryngeal musculature or, their frequent and regular singing serves to strengthen their vocal musculature. Their lack of singing training might be ascribed to the paucity of CCM style-relevant training available in the past. As reported in Chapter 2, the literature suggests that this remains a problem in relation to tertiary-based courses for CCM performance and perhaps more importantly, to CCM courses needed to train teachers in specific CCM pedagogies. Where either of these is available

researchers found that the teachers delivering the coursework rarely possessed contemporary backgrounds (LoVetri, 2002; LoVetri & Weekly, 2003).

Fifteen participants offered comments on the necessity of “technique”, “training” or “knowing how to use your voice” (Q.22f and Q.23c), and in response to whether singers were more prone to vocal damage than other groups (Q.23c), 25 participants believed that a lack of training could be a contributing factor (Q.22c). The following comment is representative of the participants who had training: “If they are singing with wrong technique they will do vocal damage. With the right technique there should be no reason for vocal damage”. Participant #21 was an 18-year old female and was one of the youngest PCGS in the sample. She reported her first professional performance was at 16 and said that she had sung *mostly continuously* since then. She had 11 years of contemporary training overall and was taking weekly lessons currently. She was performing 2-3 gigs per week with 4-hour calls on average. She sang pop, jazz and musical theatre styles *often* or *all the time* in restaurants and brasserie/bars *all the time* and, pubs and hotel function rooms *sometimes*. She reported few voice symptoms and listed her worst voice problem as “a cold”. She used a range of prevention strategies *often*, including “vocal exercises”, “focusing on good performance techniques”, using “efficient” P.A. equipment and resting her voice when necessary.

Of the 74 participants who reported some training, 65 responded to a later question regarding their teacher’s singing style background. Data for this group suggests that their teachers sang in both styles: classical (n=22) and contemporary (n=43). These results are limited by the construction of the question as there is no way to assess how well these teachers executed the styles they claimed to sing or whether the participants had heard them sing beyond some studio demonstrations.

The training and performance experiences of singing teachers is important with respect to their ability to communicate effective, style relevant techniques to their students. The

following comment from Participant #91 highlights the problems inherent in a “one size fits all” application of training across genres: “Rock-belted at gigs for extended periods. Classical singer - untrained [in contemporary style technique] pushing too high, too low, bad breathing” (Participant #91). Despite reporting 8 years of classical training this participant considered herself “untrained” in the necessary techniques for her CCM style singing. She highlights the problem of a “one size fits all” approach that promotes training in a classical singing technique to singers of any style or genre (Bartlett, 2010). Participant #91 was a 26-year-old female, who started gigging professionally at 18 years of age. She averaged four gigs per week with 2-3 hours per performance call. She sang pop, classical and MT *often* and jazz *sometimes*. Six months was her longest break from performance in her career. She reported having had 8 years of classical training and felt that it had not been very relevant to her performance styles. Further, she considered that her classical training had contributed to her voice problems (Q.22f): “I feel that being a classically trained singer who performs contemporary music contributes to a sometimes breathy tone” (Participant #91). She went on to report voice symptoms of strained voice, breathy sounding voice, inability to control vocal pitch, excessive mucus in the range of *sometimes to often*, and described laryngitis as the problem that had *most affected* her ability to perform (Q.20a).

This participant’s report suggests a possibility of vocal damage and a probability of vocal production inefficiency exacerbated by the application of classical technique to CCM styles. As reported in Chapter 2, singers of CCM styles, especially female singers, require a very different laryngeal and vocal tract set-up to that of their classical counterparts. Vocal production for CCM style requires a neutral to higher laryngeal position and a complimentary narrowed pharynx in addition to other factors of breath, resonance, vowel modification, etc. The necessary low larynx, wide pharynx position essential for excellence in classical singing

tone and production is both inappropriate and inefficient when applied to the low register tessitura and speech based production of CCM styles.

Generally, participants identified the duration of gig performances and their performance environments as contributing most to detrimental effects on their vocal health. Across the sample, many were working beyond the criterion of 6 performance hours per week (currently) and/or equivalent hours of recording session calls, reporting more than 4 gigs per week at an average of 4 hours per performance. Participant #2 wrote the following unsolicited statement in the margin of the questionnaire: “I do overseas contracts – 6 nights per week, 5 hours per night” and her responses to the rest of the questionnaire present a detailed profile of the work life of a PCGS. A 27-year old female who had her first professional performance at age 17 years, she had worked consistently since, reporting only 3 months of non-performance in her 10 year career. She had singing training for three years and described her teacher as having a classical singing background only. She was not attending singing lessons currently. She was performing Pop Jazz, Dance/Funk and R&B styles *often* or *all the time* and this had been the same in the past and she played an instrument while singing *sometimes*. She said that she felt very experienced in Pop, Rock, Dance/Funk and R&B although her preference was for singing Jazz and R&B. She described her performance venues as hotel function rooms and large halls *always*. In the past, she had worked in all venues (pubs, function rooms, large hall, restaurant, outdoors and brasserie/bars) *sometimes*. She spent 100% of her gig performances “singing LEAD”. Her gig behaviour demonstrated preventative strategies to minimize vocal load and to avoid voice problems: “I leave the gig room and socialize” (avoiding the need to speak in loud background noise), and after the gig, “I rest quietly or go to sleep”. This was typical of her behaviour both currently and in the past. She reported *never or hardly ever* experiencing voice symptoms as per the symptom list (Q.18). She describes the worst voice problem of her career as “laryngitis following a cold”.

In response to the survey question whether singers generally are more prone to vocal damage than other groups (Q.23c), she offered the following comment which reflects on voice training and the negative impact of performance environments: “Many singers are hesitant to have vocal training as it bruises their egos. Only when it is too late do they seek help. Also smoky environments and poor foldback increases chance of vocal damage” (Participant #2).

She went on to say that she *always* knew when she was in a vocally damaging situation and that she worried *somewhat* about her vocal health. She had always been a non-smoker. She *hardly ever or never* experienced fatigue (Q25) and said that she always took all precautions to prevent voice problems. She rated her enjoyment from singing performance as *very high* and said that she “enjoys performing more now than I used to”. This participant is representative of the PCGS in this study who rely on performance as their sole income. Her self-report demonstrates a professional attitude to her performance work-life that is undocumented in the existing literature.

5.6 Summary of PCGS’ stories of their lived experiences

This profile offers the most comprehensive picture to date of PCGS as a population. Across the sample PCGS participants reported a great deal of enjoyment from their performance work. They commenced their professional careers at an early age and many had training but with varying frequency and duration. Rather than specializing, they sang across a range of CCM styles in a wide range of venues. They reported few voice problems, but where these occurred they managed them, seeking little help from voice specialists. They cared about their vocal health, knew when they were in a situation that could be vocally damaging and used coping strategies. They believed that Rock styles could be damaging to their vocal health but suggested that performance environments and performance conditions had a greater impact. They have told us that their work-life reality is characterized by performance

venues with high levels of background noise, variable acoustics, the demands of style elements, social interactions (with other musicians and audience) and the pressures to perform regardless of their vocal health condition. Consideration of these issues is imperative for the development of a relevant pedagogy for PCGS. Further emic research will help build a clearer understanding of these issues and the range of music styles, speaking voice loads and the environmental and social conditions that populate PCGS' lives.

6 Conclusion

“I would say that music is the notation, the sound, the process, the performance, the talk about/around it and more” (Taylor, 1997, p. xviii).

A central assumption at the outset of this research was that contemporary commercial singers use a very different vocal production to their classical contemporaries, this difference being fuelled by specific style demands of the music and the disparate performance conditions of venue and environment. This opinion was grounded in my personal experience as a working PCGS of 44 years, and supported through my pedagogical work with trainee CCM singers and practicing PCGS who sought my help in developing and maintaining a healthy, stylistically-appropriate vocal production. I was troubled by the general dearth of research sources that addressed singers of non-classical styles and their singing. Where studies did exist there was often a conclusion of inevitability about style-driven vocal damage. For the most part, the evaluations of what constitutes a healthy vocal production reflected critics’ own backgrounds in classical voice and their aesthetic preferences for a tone and quality based on an implicit stylistic hierarchy favouring classical voice; or, on select samples of contemporary style singers who were in treatment for voice disorders. There has been little grounded research conducted with singers in the CCM field highlighting the need for a pan-stylistic or pan-cultural approach to sustainable vocal production for PCGS.

6.1 Strengths and limitations of the study

My unique position as an “insider” and empathetic observer of PCGS provided the context for this study and gave rise to many of the questions it has investigated. There is both potential strength and weakness in this personal position. The strength is that it helped me to identify issues from my own experience as both teacher and performer; most importantly, the

lack of any existing clear description of PCGS as a population, an awareness of potential relationships between vocal health problems, their management and the performance and lifestyle behaviours of singers. This position also provided me with knowledge of the language and shared experiences of the group that permitted a more emic positioning of my research and therefore the development of a credible survey instrument.

The potential weakness of researching from this perspective is that the above may not be the only issues. For example, there are also issues related to audience that are at the periphery of what has been investigated here. Audience response and appreciation are likely to associate with PCGS' work. In terms of a key finding of my study, such audience appeal conceivably might restrict the range of stylistic switches a PCGS could take. Further research is needed to explore this possibility because it relates to what options PCGS have to adjust to onset of problem symptoms. Additionally, appropriateness of fit between audience expectations and repertoire might be examined in relation to PCGS' developing preferences for style combinations.

When viewed against the small numbers of participants in the few research studies to date, the sample size (N=102) is significant, although it does present limitations for statistical analysis, such as restricting complex interactions examined across the several variables studied to only three. For example, I have reported for age of first public performance (and separately for first professional performance) on the relation between singers' frequency of gigs over the past 10 years and length of training. However, I was unable to examine whether the combination of these two "firsts" provided additional power to the prediction of gigging and training. Larger numbers would have reduced this restriction, albeit obtaining my 102 volunteers exhausted the innovative sourcing capacities that my supervisors, helpful contacts and I could muster. However, the data provided by this sample of 102 do represent a useful early step in debunking arguments concerning an inevitability of style related voice damage.

The current debate about style-related issues of vocal health and the emerging view of a need for specific, comprehensive and legitimate techniques to support and enhance contemporary commercial singers' vocal production may represent a developmental milestone in this evolving field. Given the considerable international interest in focusing pedagogy for teachers of singers of CCM styles, the data here make their contribution with both a descriptive profile of PCGS and an account of the adaptive practices these singers are using when symptoms of voice problems occur. In terms of PCGS reports of organic voice problems such as nodules (approximately 10% of participants in this study) it would be interesting to view the incidence for PCGS in comparison to classical style singers of equivalent professional standing. Similarly, a study of this type might also include a comparison of the frequency of PCGS and classical singers' consultations with ENT and other health professionals.

As reported in Chapter 2, there is ample evidence to suggest that globally, PCGS are working in very significant numbers. Yet, the literature of singing voice remains firmly focused on the teaching and practice of western classical styles. The attitude of etic writers towards CCM and the style elements that define the genre have had far-reaching implications for the emerging field of contemporary commercial vocal pedagogy. It is my view, supported by the research in this dissertation, that singing teachers and voice care specialists need accurate information about the contextual features of PCGS' performance and lifestyle realities in order to develop a sustainable vocal health system for CCM singers generally and PCGS specifically.

6.2 The profile of PCGS

The findings from this study challenge the legitimacy of using aesthetic-based, etic commentary and principles of traditional classical voice training techniques as the basis for generalization to PCGS. The profile gained from my participants' self reports affords the view that vocal damage is neither an inevitable nor impossible consequence of PCGS' performance styles. Most PCGS had experience of a wide range of symptoms, but few reported these as chronic or debilitating. Typically, the PCGS participants in this study believe that rock styles put them at risk of voice damage, but that few of their other performance styles do. Most sing rock, but their highly developed ability to sing across a range of styles gives them adaptability to switch styles as necessary for their vocal longevity. Most report an awareness of and are able to manage the onset of problem symptoms when they do occur – they do this successfully by employing preventative measures including modifying their “on the gig” and “after the gig” behaviours, controlling their performance conditions through appropriate application of live sound reinforcement and through a range of vocal health supports such as vocal exercises and vocal rest. This knowledge offers an important basis for challenging the view that CCS are subject to style related “inevitability of vocal damage” as suggested by the literature. It also provides important generic contextual information for those singing teachers and the voice care specialists who manage PCGS in the course of their studio and clinical work.

In addition to information about vocal health, the study's profile of PCGS in the Australian context gives particular attention to issues of age and gender, training and performance experience, professional longevity, and professional attitudes. Rather than a single style focus, Australian PCGS sing across a range of styles with an average of 3-4 gigs per week where Rock and Pop and associated sub-styles are the sung most commonly.

Beyond these two styles, some gender variation occurs with males more likely to sing Country and females more represented in Dance/Funk, R&B and Jazz.

Typically, PCGS are in their early 30's. Many of them play an instrument while singing. As a regular part of their gig routine they spend time setting up and pulling down gear at gig venues such as pubs and hotel function rooms, brasserie/bars, restaurants, churches, festivals, nightclubs, RSL clubs and recording studios prior to and after performances. In terms of voice loading, males were more likely than females to stay in the gig room and socialise between "sets" and after the gig; females more than males to deliberately rest their voices. They know about amplification and foldback and, most commonly they self-manage these on stage. They own their own microphones and rehearse regularly. They began singing in public before 16 years of age, their professional debuts occur two years later and they have sung thereafter with few career interruptions. Most, especially females and younger singers, have some duration of vocal training in either a combination of both classical and contemporary styles or in contemporary singing alone. The majority supplements their income through other work – customarily where their voice use is significant. PCGS enjoy their work and they are concerned for vocal health, however they seek the help of health specialists only infrequently. They value their teachers and many seek their advice and attention not only for vocal quality and production issues, but also for direction when they are experiencing voice symptoms.

Such a profile should assist PCGS, and their singing teachers and voice care specialists, to plan for excellence in performance and vocal health, and to monitor and adjust the plan in a cycle of reflection and improvement by bringing to focus the "real world" demands of their performance conditions and lifestyle behaviours.

In conclusion, given the significant numbers of PCGS in the workforce and the reality that this is a global phenomenon, I believe that the field needs to be more assertive in separating

“good ideas” and “personal opinion” from “evidence” and “research”. A rigorous and systematic commitment to research would be a sign of progression and may help those institutions that confer voice-teaching awards to acknowledge that effective CCM training programmes require a developed and specific pedagogy that respects the validity of PCGS’ performance practice. This dissertation seeks to contribute to such progression in presenting evidence from the lived experiences of 102 participant PCGS currently working in the CCM field.

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Appendices

Appendix – 1 – Ethical Clearance

From: Gary Allen <g.allen@griffith.edu.au>
To: Irene Bartlett <I.Bartlett@griffith.edu.au>
Date: 06/04/2011 11:47 AM
Subject: Re: Sorting out the question of Griffith University ethical clearance

Dear Irene

I write further to our telephone conversations and the material you have provided. I confirm that, because the data was collected prior to your arrival at the University and this occurred under the auspice of ethical clearances granted by UQ and La Trobe, you do not need to obtain a ethical clearance from Griffith University for this work. I am satisfied that the national ethical requirements have been addressed.

Kind regards

Gary

Dr Gary Allen
Senior Manager, Research Ethics and Integrity
Office for Research
Griffith University
ph: 3735 5585
fax: 5552 9058
email: g.allen@griffith.edu.au
url: www.griffith.edu.au/or/ethics

Appendix – 2 – Survey Instrument

Office use only: subject no. _____

Date _____

RESEARCH QUESTIONNAIRE
VOICE AND PERFORMANCE -
PROFESSIONAL CONTEMPORARY SINGERS

Irene Bartlett, Alison Winkworth and Jean Callaghan
A research project of the University of Queensland, Australia

Thank you for participating in this project about voice and performance issues for professional contemporary singers. We hope the results will lead to a better understanding of the needs of contemporary singers in terms of training and voice care.

The questionnaire is about your voice and performance experience. There are sections on singing training, performance conditions, voice problems and voice care, among others. We estimate that the questionnaire will take about 30 minutes to complete, although you do not have to complete it all in one go.

ONLY COMPLETE THIS QUESTIONNAIRE
IF YOU ARE CURRENTLY PERFORMING FOR 6 OR MORE HOURS
PER WEEK

INSTRUCTIONS

1. Complete this questionnaire only if you currently perform for 6 or more hours per week.
2. Please answer all questions as completely as you can. If there's a question that does not really apply to you, please specify this on the questionnaire.
3. If you would like to add more information or comments, please attach a separate sheet if needed.
4. If you have any questions about the questionnaire or the project, please contact one of the investigators listed below.
5. Please return the completed questionnaire using the envelope provided, to Ms Irene Bartlett and Dr Alison Winkworth, Dept of Speech Pathology & Audiology, University of Queensland, Brisbane Qld 4072, Australia.

CONTACT US - If you have any queries about the questionnaire or the research project, please contact us at the above address, or telephone/email:

Irene Bartlett: **Telephone** (07) 3202 8278 or 0410 492 548. **Email:**
I.Bartlett@mailbox.gu.edu.au.

Alison Winkworth: **Telephone** (07) 3365 3080 or 0403 166 480. **Fax** (07) 3365 1877.
Email: a.winkworth@mailbox.uq.edu.au

1. Performance history

- a) How old were you when you did your first **public** performance? Age (years) _____
- b) How old were you when you started singing professionally? (please *indicate below*)
Age at time first **paid** performance: (years) _____
- c) Have you sung pretty much continuously since? (**Please tick one**):
 Yes, mostly continuously **Yes, somewhat** continuously **No**, I have had longish breaks between singing
- d) What has been the longest break from singing professionally? (Please write the number of weeks, months or years):
Number _____ weeks / months / years (**circle one**)

2. Singing Training

- a) Have you had singing lessons ? (**Tick one**) YES NO
IF YES:
- b) How long have you had singing lessons for? _____ years
- c) Classical training, or contemporary? Please complete:
_____ years classical training, and _____ yrs contemporary training
- d) How relevant is that training to the *work you are performing now*? (**Circle one**)
- | | | | | |
|---------------------------|---|-------------------------------|---|-------------------------------|
| 1
<i>very relevant</i> | 2 | 3
<i>somewhat relevant</i> | 4 | 5
<i>not very relevant</i> |
|---------------------------|---|-------------------------------|---|-------------------------------|
- e) Did you take lessons before performing professionally? (**Tick one**): YES NO
- f) How many singing teachers have you trained with altogether? Number _____
- g) What styles did your teacher(s) mainly sing? (**Tick one**) Mainly classical Mainly contemporary
- h) Are you currently taking singing lessons? (**Tick one**): NO Yes, classical Yes, contemporary
- i) If you ticked YES in (h) above, please indicate how often you currently attend singing lessons: (**Circle one**)
- | | | | | |
|---|------------------------------------|---------------------------|------------------------------|---------------------|
| <i>about every three months or less often</i> | <i>once every couple of months</i> | <i>about once a month</i> | <i>twice a month or more</i> | <i>every week +</i> |
|---|------------------------------------|---------------------------|------------------------------|---------------------|

Performing styles - current and past

3. Current styles. How often do you sing the following styles NOW? (Circle a number next to each style)

Style of music performed CURRENTLY	1 hardly ever, or never	2 not very often	3 sometimes	4 often	5 all the time, or nearly
a. pop	1	2	3	4	5
b. rock	1	2	3	4	5
c. country	1	2	3	4	5
d. jazz	1	2	3	4	5
e. classical	1	2	3	4	5
f. dance/funk	1	2	3	4	5
g. R& B	1	2	3	4	5
h. Other (<i>please write</i>) _____	1	2	3	4	5
i. Combination of above (<i>please write</i>) _____	1	2	3	4	5

4. Past styles. How often did you sing these styles in the PAST? (Circle a number next to each style)

In the PAST, I used to sing these styles..	1 hardly ever, or never	2 not very often	3 sometimes	4 often	5 all the time, or nearly
a. pop	1	2	3	4	5
b. rock	1	2	3	4	5
c. country	1	2	3	4	5
d. jazz	1	2	3	4	5
e. classical	1	2	3	4	5
f. funk/dance	1	2	3	4	5
g. R& B	1	2	3	4	5
h. Other (please write) _____	1	2	3	4	5
i. Combination of above (please write) _____	1	2	3	4	5

5. How experienced do you feel in each of the following styles? (Circle a number next to each style)

Experienced	1 not at all experienced	2 a little experienced	3 moderately experienced	4 quite experienced	5 very experienced
a. pop	1	2	3	4	5
b. rock	1	2	3	4	5
c. country	1	2	3	4	5
d. jazz	1	2	3	4	5
e. classical	1	2	3	4	5
f. dance/funk/	1	2	3	4	5
g. R&B	1	2	3	4	5
h. Other (please write) _____	1	2	3	4	5

6. Which style(s) do you prefer to sing?

Gigs and venues - current and past

7. Current gigs or sessions

a. In the last month, how many gigs or sessions have you done per week? (Circle one):	None	1 or 2 per week	2 or 3 per week	3 or 4 per week	More than 4 per week
---	------	--------------------	--------------------	--------------------	-------------------------

b. How long is a normal gig or session, on average? (Please write): _____ hours per gig

c. What percentage of time in each gig do you spend setting up and breaking down gear (including sound checking) versus performing? (on average) _____ % setting up/breaking down and _____ % performing

d. What percentage of the time do you sing LEAD versus back-up, on average? (Please write) _____ % LEAD and _____ % back-up

e. How often do you play an instrument while you sing during a performance? (Tick one):

Hardly ever, or never Not very often Sometimes Often All the

time, or nearly

Which instrument(s) do you play while you sing? *(Please write)*

8. PAST gigs or sessions

a. <i>In the last 2 years or so, how many gigs or sessions have you done per week? (Circle one):</i>	None	1 or 2 per week	2 or 3 per week	3 or 4 per week	More than 4 per week
--	------	-----------------	-----------------	-----------------	----------------------

b. How many hours were there per gig or session in the past (on average)? _____ hours per gig

c. What percentage of time in each gig did you spend setting up and breaking down gear versus performing, in the past, on average?

_____ % **setting up/breaking down and** _____ % **performing**

d. What percentage of the time did you sing LEAD versus back-up, on average in the past? *(Please write)*

_____ % **LEAD and** _____ % **back-up**

e) Please add any comments about past gigs here.

9. Venues. Currently, how often do you sing at the following? *(Please circle a number next to each venue)*

VENUES NOW	1 always or nearly always	2 often	3 sometimes	4 not very often	5 hardly ever, or never
a. pub	1	2	3	4	5
b. hotel function room	1	2	3	4	5
c. large hall (eg, convention centre)	1	2	3	4	5
d. restaurant	1	2	3	4	5
e. outdoors	1	2	3	4	5
f. brasserie/bar	1	2	3	4	5
g. Other (please write) _____	1	2	3	4	5
h. Combination of above (please write)	1	2	3	4	5

10. Venues Past. In the past, how often did you sing at the following? *(Please circle a number next to each).*

VENUES IN THE PAST	1 always or nearly always	2 often	3 sometimes	4 not very often	5 hardly ever, or never
a. pub	1	2	3	4	5
b. hotel function room	1	2	3	4	5
c. large hall (eg, convention center)	1	2	3	4	5
d. restaurant	1	2	3	4	5
e. outdoors	1	2	3	4	5
f. brasserie/bar	1	2	3	4	5

g. Other (please write)	1	2	3	4	5
h. Combination of above (please write)	1	2	3	4	5

11. Between sets – NOW. We are interested in what you typically do between sets, in a performance.

When you are between sets, how often do you do each of the following? (*Circle a number next to each statement*).

NOW,	1 always or nearly always	2 often	3 sometimes	4 not very often	5 hardly ever, or never
a. I stay in the gig room and socialize	1	2	3	4	5
b. I leave the gig room and socialize – eg, go outside	1	2	3	4	5
c. I rest your voice	1	2	3	4	5
d. I practice the next set	1	2	3	4	5

12. Between sets – IN THE PAST.

Please indicate what you USED to do in the past between sets. (*Please circle a number next to each statement*).

IN THE PAST,	1 always or nearly always	2 often	3 sometimes	4 not very often	5 hardly ever, or never
a. I USED TO stay in the gig room and socialize	1	2	3	4	5
b. I USED TO leave the gig room and socialize – eg, go outside	1	2	3	4	5
c. I USED TO rest my voice	1	2	3	4	5
d. I USED TO practice the next set	1	2	3	4	5

13. After the gig

After the gig, how often do you do each of the following? (*Please circle a number next to each statement*).

CURRENTLY,	1 always or nearly always	2 often	3 sometimes	4 not very often	5 hardly ever, or never
a. I hang around the venue and socialize	1	2	3	4	5
b. I leave the venue and socialize	1	2	3	4	5

c. I rest quietly or go to sleep	1	2	3	4	5
----------------------------------	---	---	---	---	---

d. Was any of this different *in the past*? (*Tick one*): YES NO

If YES, please describe what you used to do after the gig *in the past*.

.....

.....

.....

Equipment

14. Amplification

a. Who operates the P.A.? (*Please write*).....

b. How well do you understand how a P.A. works? (<i>Circle a number</i>).	1 not very well	2 a bit	3 moderately well	4 quite well	5 very well
---	--------------------	------------	----------------------	-----------------	----------------

c. Do you know the E.Q. settings best for your voice? (*Tick one*): YES NO, not really

d. How well can you hear your voice over the instruments or backings, usually?	1 <i>usually</i> not very well	2 <i>usually</i> a bit	3 <i>usually</i> somewhat	4 usually quite well	5 usually very well
e. How often do you use foldback monitors?	hardly ever	not very often	sometimes	often	always, or nearly always
f. How often do you have the same effects (eg, reverb) in the foldback as in the front of house speakers?	hardly ever	not very often	sometimes	often	always, or nearly always
g. How often do you use 'in ear' monitors?	hardly ever	not very often	sometimes	often	always, or nearly always

15. Microphone

a. What is your opinion of the microphone you normally use? (<i>Please circle one</i>): It's....	1 not very good	2	3 <i>okay</i>	4	5 very good
--	--------------------	---	------------------	---	----------------

b. Do you own your own microphone? (*Tick one*): YES NO

c. If YES, what type is it? (type, brand, model etc)

.....

.....

d. If YES, how often do you use <i>your own microphone</i> for performance?	1 hardly	2 not	3 someti	4 often	5 always,
---	-------------	----------	-------------	------------	--------------

	ever	very often	mes		or nearly always
--	------	------------	-----	--	------------------

[Q15 continued]

e. Why did you get this particular type of microphone? (*please tick all that apply*)

It was recommended by: teacher friend other

I have used this one before

I did my own research about it

Other reason

.....

Rehearsals and other work

16. Rehearsals

a. How often do you rehearse with <i>the full band</i> ? (<i>Choose <u>one</u> and write in number of times</i>)	<hr/> Times per year, or	<hr/> times per month, or	<hr/> times per week
--	--------------------------	---------------------------	----------------------

b. On average, how long is each rehearsal *with the band*?

.....

c. How often do you rehearse with a <i>solo instrument</i> (eg, guitar or keyboard) (<i>Choose <u>one</u> and write in number of times</i>)	<hr/> times per year, or	<hr/> times per month, or	<hr/> times per week
---	--------------------------	---------------------------	----------------------

d. On average, how long is each rehearsal *with a solo instrument*?

.....

e. How often do you rehearse <i>unaccompanied</i> ? (<i>Choose <u>one</u> and write in number of times</i>)	<hr/> times per year, or	<hr/> times per month, or	<hr/> times per week
---	--------------------------	---------------------------	----------------------

f. On average, how long is each *unaccompanied* rehearsal?

.....

g. How often do you use PA for rehearsals? (<i>Circle one</i>)	1 hardly ever	2 not very often	3 someti mes	4 often	5 always, or nearly always
--	---------------------	---------------------------	--------------------	------------	--

h. Please add any comments here.

.....

.....

17. Other work

a. Are you employed in work other than singing? (*Tick one*): YES NO → **If NO**, go to **Question 18**.

If YES, please complete the questions below.

b. How many hours a week do you do this work, on average? (*Please write*)
 _____ hours per week

c. What kind of work do you do, and what kind of place do you work in? (E.g., teacher in a primary school, food server in a deli, waiter in a café).

.....

.....

Comments:

d. How often is this workplace <i>noisy</i> ? (<i>Circle one</i>)	1 hardly ever	2 not very often	3 someti mes	4 often	5 always, or nearly
e. How often do you use your <i>speaking voice</i> as part of this work? (<i>Circle one</i>)	1 hardly ever	2 not very often	3 someti mes	4 often	5 always, or nearly
f. How often do you need to <i>speak more loudly than normal</i> , in this work? (<i>Circle one</i>)	1 hardly ever	2 not very often	3 someti mes	4 often	5 always, or nearly

Voice problems

18. VOICE SYMPTOMS - LAST 12 MONTHS

In the last 12 months, have you experienced the following symptoms and how often have they affected your performance?

SYMPTOMS RELATED TO YOUR VOICE that have affected performance in the last 12 months	1 always, or nearly	2 often	3 sometimes	4 not very often	5 hardly ever, or never
a. hoarseness or roughness of the voice	1	2	3	4	5
b. lost your voice	1	2	3	4	5
c. severe dry throat	1	2	3	4	5
d. very sore throat	1	2	3	4	5
e. laryngitis following a cold	1	2	3	4	5
f. strained voice	1	2	3	4	5

g. tired or weak voice	1	2	3	4	5
h. breathy-sounding voice	1	2	3	4	5
i. inability to get high notes	1	2	3	4	5
j. inability to achieve enough loudness or volume of the voice	1	2	3	4	5
k. unable to control vocal tone or quality of the voice	1	2	3	4	5
l. unable to control vocal pitch	1	2	3	4	5
m. excessive mucus, phlegm	1	2	3	4	5
n. physical tension – eg, neck, shoulders – that has affected your voice	1	2	3	4	5
o. emotional or mental stress that has affected your voice	1	2	3	4	5

p. If some symptoms affected your performance, *which ones had the most impact* on your ability to perform?

(please write)

.....
.....
.....
.....

19. Seeking help in the last 12 months – for a voice problem

In the last 12 months, what kind of help, if any, did you seek for the symptoms that affected your performance? (Please indicate how often you consulted the following professionals for a voice problem.)

a. SINGING TEACHER. (Only write in here if you saw a singing teacher for a voice problem)

Number of times consulted for a voice problem in the last 12 months *(please write)*

7.1.1.1.1.1.1.1

Please tick one of the following:

The treatment given mostly worked The problem sorted itself out The problem did not really get better

b. EAR NOSE AND THROAT SPECIALIST. (Only write in here if you saw this specialist for a voice problem)

Number of times consulted for a voice problem in the last 12 months *(please write)*

7.1.1.1.1.1.1.2

Please tick one of the following:

The treatment given mostly worked The problem sorted itself out The problem did not really get better

c. OTHER MEDICAL SPECIALIST (please specify) _____

(Only write in here if you saw them for a voice problem)

Number of times consulted for a voice problem in the last 12 months

Please tick one of the following:

The treatment given mostly worked The problem sorted itself out The problem did not really get better

d. GENERAL PRACTITIONER. (Only write in here if you saw a GP for a voice problem)

Number of times consulted for a voice problem in the last 12 months (*please write*)

Please tick one of the following:

The treatment given mostly worked The problem sorted itself out The problem did not really get better

e. SPEECH PATHOLOGIST (ie, speech therapist) (Only write in here if you saw a speech pathologist for a voice problem) Number of times consulted in the last 12 months

Please tick one of the following:

The treatment given mostly worked The problem sorted itself out The problem did not really get better

[Q19 continued]

f. ALTERNATIVE HEALTH PRACTITIONER (eg, herbalist, acupuncturist).

Please specify _____

(Only write in here if you saw an alternative practitioner for a voice problem)

Number of times consulted for a voice problem in the last 12 months

7.1.1.1.1.1.1.3 *Please tick one of the following:*

The treatment given mostly worked The problem sorted itself out The problem did not really get better

g. What *other kind of help* did you seek for the above symptoms affecting your performance, not covered by the professionals above? (*please describe*)

.....
.....
.....
.....

20. a. What is the *worst* voice problem you have experienced in your career? (*Please describe the problem and the effects on your voice*).

.....
.....
.....
.....

.....

b. How did this worst voice problem affect your performance? (*Please circle a number below from 0 to 10 according to this scale*):

0 = no effect on performance
 5 = the effects were troublesome
 10 = the effects were extremely disruptive)

0 1 2 3 4 5 6 7 8 9 10

c. When did this worst voice problem happen? (<i>Please circle one</i>):	Last 12 months	Last 1-2 years	Last 3-5 years	Longer than 5 years ago
--	----------------	----------------	----------------	-------------------------

21. Voice problems in the PAST

a. How many voice problems have you had in the past ? (<i>Circle one</i>)	none or hardly any	not very many	some	quite a few	a lot
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b. Altogether, how did these voice problems in the past affect your performance? (*Please circle a number below from 0 to 10 according to this scale*):

0 = no effect on performance
 5 = the effects were troublesome
 10 = the effects were extremely disruptive)

0 1 2 3 4 5 6 7 8 9 10

c. Have you had to change your *performance style* in the past because of voice problems? (*Tick one*):

YES NO

7.1.1.1.1.1.1.1.4

d. Which of the following statements is the most true for you? (*Please tick one.*)

- My voice symptoms have *improved* in the last 12 months or so, compared to before that.
- My voice symptoms have *been worse* in the last 12 months, compared to before that.
- My voice symptoms have *not really changed* in the last 12 months.

22. Factors contributing to voice problems

How much do you think the following factors might have *contributed to the voice problems* you have had? (Circle a number for each factor.)

Factors contributing to voice problems	1 did not really contribute	2 contributed a bit	3 contributed moderately	4 contributed a fair bit	5 contributed quite a lot
a. The environment you were singing in	1	2	3	4	5
b. The type of singing training you have had	1	2	3	4	5
c. A lack of singing training	1	2	3	4	5
d. The style you were singing	1	2	3	4	5
e. The equipment you were using – eg, poor amplification	1	2	3	4	5

f. Please comment on *any other factors* you feel might have contributed to voice problems

.....

Beliefs about voice problems in general

23. a. Do you think some contemporary styles are more vocally damaging than others? (Please tick one)

- Probably yes Not sure Probably no

b. If YES, which do you think are the more damaging styles? (Please write)

.....

c. Do you believe that singers in general are *more prone to vocal damage* than other groups?

- Probably yes Not sure Probably no

Comments:

.....

24.

a. How well do you usually know when you are in a situation that may be vocally damaging?	1 Not too sure	2	3 I think I know	4	5 I'm sure
b. How much do you worry about your vocal health?	1 I don't worry	2	3 Worry somewhat	4	5 Worry a great deal

25. Vocal Fatigue

a. How often do you experience vocal fatigue specifically?	hardly ever or never	not very often	sometimes	often	nearly always
--	----------------------	----------------	-----------	-------	---------------

b. **Is there any particular time you experience vocal fatigue** – e.g., before or after rehearsals or a gig? *(Please describe).*

.....

c. **On average, how long would it take for your voice to recover from this fatigue?** (Please tick one)

a matter of hours a matter of days a matter of weeks

Comments

.....

d. **When you experience vocal fatigue, how much does it affect your performance?** *(Please circle a number below from 0 to 10 according to this scale):*

- 0 = no effect on performance
- 5 = the effects were troublesome
- 10 = the effects were extremely disruptive)

0 1 2 3 4 5 6 7 8 9 10

e. **Please describe how your voice sounds when it is fatigued.**

.....

f. **What works best to alleviate vocal fatigue, when you experience it?** *(Please describe).*

.....

Preventing voice problems

26. Thinking realistically, how often do you do each of the following, to try and prevent voice problems?

Preventing voice problems	1 always, or nearly	2 often	3 sometimes	4 not very often	5 hardly ever, or never
a. specific vocal exercises	1	2	3	4	5
b. vocal warm ups	1	2	3	4	5
c. avoid shouting and screaming	1	2	3	4	5
d. avoid excessive throat clearing	1	2	3	4	5
e. minimize going to noisy or polluted places	1	2	3	4	5
f. I am very careful about how I use my voice	1	2	3	4	5
g. Focus on using good vocal technique during performance	1	2	3	4	5
h. Drink plenty of water	1	2	3	4	5
i. Avoid foods or drink that I know will cause a problem for my voice	1	2	3	4	5
j. I try to get plenty of sleep	1	2	3	4	5
k. Make sure we have the right PA equipment etc, and that it works	1	2	3	4	5
l. Look after my health in general	1	2	3	4	5
m. Rest my voice when I've overdone it	1	2	3	4	5

n. What else do you do, to try and prevent voice problems? (Please describe)

.....

.....

.....

Enjoyment

27.	1	2	3	4	5
a. How much enjoyment do you currently get from performing?	not much enjoyment		some enjoyment		a great deal

b. Which statement is the most true for you, about enjoyment? (Please tick one).

- I enjoy performing *more now* than I used to.
- I enjoy performing *less now* than I used to
- My enjoyment levels have *not really changed*

A bit about you

We need a few personal details to complete the questionnaire.

28. a. How old are you? _____ years old
- b. Are you: female male
- c. How would you describe your *general health*? (**Tick one**)
- poor fair good very good
- d. Do you smoke? Please tick the statement that most applies to you.
1. I currently smoke *more than 20 cigarettes a day* on average
 2. I currently smoke *between 10 and 20 cigarettes a day* on average
 3. I currently smoke *between 10 and 20 cigarettes a day* on average
 4. I currently smoke *between 5 and 10 cigarettes a day* on average
 5. I currently smoke *less than 5 cigarettes a day* on average
 6. I currently smoke, but *only 1-2 a day* or I smoke *only on one day a week*
 7. I used to smoke *a lot*, but have now given up
 8. I used to smoke *occasionally*, but have now given up
 9. I have never smoked
- e. Do you take *regular medication* for any of the following health complaints? (**Tick all that apply**)
- asthma
- sinusitis
- hayfever or allergies involving nose and throat

Comments

.....

- f. When did you last have your *hearing tested*? (**Tick one**)
- cannot recall Never tested 5 or more years ago last 1-5 years
- last 12 months

- g. Do you have any illnesses or injuries that could affect your voice? (**Please describe**)

.....

.....

Thank you for participating in this research project. Please complete the contact details on the next page.

Please add any further comments here if you would like to:

Office use only: Subject no.

Please complete your contact details – CONFIDENTIAL

THIS PAGE TO BE DETACHED FOLLOWING RECEIPT OF QUESTIONNAIRE

We would like to stay in touch with you to keep you informed about the results of the project, and also to contact you if we need to clarify any of the questionnaire details.

We assure you that all of the information you have provided will remain completely confidential. When we receive your questionnaire, this contact sheet will be detached, and all information will be coded by number, not your name. When we report the results, only group results will be provided.

Your name (please print)

.....

Address for correspondence (please print)

.....

.....

.....

Telephone numbers

.....

.....

Email address

.....

COMMENTS

We welcome any further comments you have about any aspect of the project, or any feedback you have about the questionnaire. If space is not sufficient, please add a separate sheet.

Please return the whole questionnaire using the envelope provided. If no envelope, please send to Dr Alison Winkworth, Department of Speech Pathology & Audiology, University of Queensland, Brisbane Qld 4072, Australia.

CONTACT US - If you have any queries about the questionnaire or the research project, please contact us at the above address, or telephone/email:

Irene Bartlett: **Telephone** (07) 32028278 or 0410 492 548. **Email:**
I.Bartlett@mailbox.gu.edu.au

Alison Winkworth: **Telephone** (07) 3365 3080 or 0403 166 480. **Fax** (07) 3365 1877.
Email: a.winkworth@mailbox.uq.edu.au

Appendix – 3 – Glossary

AMEB	Australian Music Examinations Board. Since 1918, a national body that administers graded examinations in musical performance and develops syllabi for that purpose.
CCM	Contemporary commercial music. CCM encompasses a wide range of non-classical vocal styles including pop, rock, country, R&B, dance, rap, jazz, musical theatre and numerous sub-styles.
EMIC	A term used in anthropology and ethnomusicology to refer to the positioning of a cultural observer as an insider, or to refer to a cultural description or account given by an “insider”. See also “Etic.”
ENT	Ear, Nose and Throat - medical speciality in the disorders of the ear or nose or throat. Also referred to as otolaryngology, otorhinolaryngology, or rhinolaryngology. Colloquially used to refer to a medical doctor who practices in this field (“an ENT”).
EQ	Equalization or Frequency band equalization – fine electronic adjustments to the frequency output of amplified sound through adjustment of controls on the amplifier or equalizer components of live sound reinforcement. Creates a balanced sound throughout the performance space by reinforcing and/or enhancing the room acoustics..
ETIC	A term used in anthropology and ethnomusicology to refer to the positioning of a cultural observer as an outsider, or to refer to a cultural description or account given by an “outsider”. See also “Emic.”
FOLD-BACK	Onstage monitor speakers that compose one component in a complex network of electronic amplification that PCGS employ to improve the quality of their performance environments. Fold-back and alternative methods of monitoring (side fill and back fill monitors) are integrated into an effective P.A. system. PCGS use monitoring systems to enhance their hearing of their own voices and to provide an accurate perception of their vocal output.
GIG	Colloquial term that refers to paid, live, public performances or engagements, such as by an individual musical artist or band, or more broadly, any kind of artistic performance. In widespread use amongst professional CCM artists.
GLOTTIS	The space between the vocal folds
LARYNGOSCOPY	A procedure used to view the inside of the larynx (the voice box). A laryngoscope is a medical instrument used to obtain a view of the vocal folds and the glottis.

LARYNX (voice box)	A cartilaginous structure at the top of the trachea; contains elastic vocal folds that are the source of sound in speech and singing
NODULES	A reference to vocal nodules, small benign thickenings of the margins of the vocal folds commonly resulting from vocal abuse (e.g., prolonged shouting); these ordinarily occur at the junction of the anterior and middle thirds of the vocal folds. The resulting effect of vocal nodules is that the vocal folds do not close completely during the vibration cycle characteristically producing a hoarseness and/or breathiness in spoken and singing voice production. Treatment of vocal cord nodules aims to eliminate or reduce this hoarseness, through specific vocal exercises or removal by surgery.
P.A.	Live sound reinforcement equipment routinely used by PCGS and CCM bands.
PCGS	Professional Contemporary Gig Singers - singers who earn their income through regular performances of CCM styles in local, national and sometimes international contexts, either emulating the 'star' recording artists as singers in covers bands, or performing their original music in various band combinations in a range of "live music", commercial venues (pubs, clubs, hotels etc.).
SETS	Periods of actual performance punctuated by breaks. A number of sets comprise a gig. A "set" can be of 30 minutes to an hour in duration, most commonly followed by a 15 minute break in an average gig performance of 3-4 hours.
SPRUIKER	A person standing outside a place of business trying to persuade patrons to enter, or vigorously trying to persuade customers to purchase their wares (colloquial, Australian English).
SUB-GLOTTAL	Below the vocal folds
SUPRA-GLOTTAL	Above the vocal folds
VOCAL FOLD	Twin infoldings of mucous membrane stretched horizontally across the larynx, which vibrate, modulating the flow of air from the lungs during phonation, producing the sound waves associated with talking and singing.