

Medical Problems Among ICSOM Musicians: Overview of a National Survey

Martin Fishbein, Ph.D., and Susan E. Middlestadt, Ph.D. with Victor Ottati, Susan Straus, and Alan Ellis

This article is reprinted from the August 1987 issue of *Senza Sordino*, the official publication of the International Conference of Symphony and Opera Musicians (ICSOM), and affiliate of the American Federation of Musicians. We are indebted to Melanie Burrell, Chairperson, and the Governing Board of that organization, for permission to use it in MPPA. A list of ICSOM's 48 member orchestras is provided here to emphasize the size and scope of the survey the results of which are reported in this article.

Alabama Symphony Orchestra
Atlanta Symphony Orchestra
Baltimore Symphony Orchestra
Boston Symphony Orchestra
Buffalo Philharmonic Orchestra
Chicago Lyric Opera Orchestra
Chicago Symphony Orchestra
Cincinnati Symphony Orchestra
Cleveland Orchestra
Dallas Symphony Orchestra
Denver Symphony Orchestra
Detroit Symphony Orchestra
Florida Symphony Orchestra
Grant Park Symphony Orchestra
Honolulu Symphony Orchestra
Houston Symphony Orchestra
Indianapolis Symphony Orchestra
Kennedy Center Opera House Orchestra
Los Angeles Philharmonic
Louisville Orchestra
Metropolitan Opera Orchestra
Milwaukee Symphony Orchestra
Minnesota Orchestra
National Symphony Orchestra

New Jersey Symphony Orchestra
New Orleans Philharmonic Symphony Orchestra
New York City Ballet Orchestra
New York City Opera Orchestra
New York Philharmonic
North Carolina Symphony Orchestra
Oakland Symphony Orchestra
Oklahoma Symphony Orchestra
Oregon Symphony Orchestra
Philadelphia Orchestra
Phoenix Symphony Orchestra
Pittsburgh Symphony Orchestra
Rochester Philharmonic Orchestra
Saint Louis Symphony Orchestra
Saint Paul Chamber Orchestra
San Antonio Symphony Orchestra
San Diego Symphony Orchestra
San Francisco Ballet Orchestra
San Francisco Opera Orchestra
San Francisco Symphony
Seattle Symphony Orchestra
Syracuse Symphony Orchestra
Toledo Symphony Orchestra
Utah Symphony Orchestra

Introduction

As the readers of *Senza Sordino* know, ICSOM has played a major role in the development of the field of music medicine. Among its other contributions, ICSOM was the driving force behind a national survey designed specifically to obtain information about medical problems among profes-

sional musicians. This report barely scratches the surface of the data which many of you have provided, but does give an overview of the kinds of information now available. In addition to presenting some basic findings, the report illustrates the types of analyses which can be done with the survey data.

Martin Fishbein and Susan Middlestadt are professors at the University of Illinois at Champaign-Urbana who specialize in research methodology.

Method

Questionnaire

A self-completion questionnaire was developed in conjunction with ICSOM's committee on music medicine. The first page of the questionnaire contained four lists:

1. 59 medical problems, including 34 physical locations for musculoskeletal problems (e.g., right hand, left lower back) and 25 non-musculoskeletal problems (e.g., chin rest sore, eye strain)
2. 9 musculoskeletal symptoms (e.g., pain, swelling)
3. 11 musculoskeletal diagnoses (e.g., bursitis, pinched nerve)
4. 32 medical treatments (e.g., see dentist, application of heat)

The musicians were first asked to "circle the numbers of ALL the musculoskeletal problems and ALL the other medical problems" they had experienced. Respondents who indicated musculoskeletal problems were asked to circle their symptoms and any diagnoses they had received. In addition, the musicians who indicated experiencing any of the 59 medical problems were asked to "circle the numbers of ALL the medical treatments" tried.

On the second page, the musicians indicated which, if any, of the problems they had previously circled were severe, with severity defined in terms of the effect of the problem on the musician's performance. Each musician could list up to four problems in order of severity. The musicians were asked what treatments they had tried and which ones had been effective.

The last page contained general demographic and occupational questions. The musicians were asked to indicate their age, gender, orchestral instrument, the age they began playing, the age they joined an orchestra, and the number of weeks each year spent playing professionally. Information was also obtained about health habits such as extent of exercise and the use of cigarettes, alcohol, beta blockers, and other drugs.

Population

The population of interest was restricted to musicians performing on a regular basis with one or more of the ICSOM orchestras. To help define this total population, the 48 ICSOM orchestras were first classified into four types: Special, Large, Medium, and Small. The Special orchestras consisted of the seven opera and ballet orchestras, Grant Park, and the St. Paul Chamber Orchestra. Grant Park was included here because of its short season and high degree of overlap with the Chicago Lyric. The remaining 39 orchestras were divided into 13 Large, 13 Medium, and 13 Small orchestras. The distinction was based primarily on size of budget, but also reflected the number of musicians performing in the orchestra and the length of season. For example, all of the Large and none of the Small orchestras have 52-week seasons.

To obtain a count and description of the total population of musicians in the 48 orchestras, the membership listings on the printed orchestra programs were analyzed. Whenever it was possible to identify them, musicians playing in more than one ICSOM orchestra were counted only once, while those playing on a part-time basis were not counted. Following this procedure, a total population of 4025 musicians

who perform on a regular basis in one or more of the 48 ICSOM orchestras was defined.

Procedures

In May 1986, the ICSOM delegate for each of the 48 member orchestras distributed the questionnaires to the musicians. A person could fill out the questionnaire anonymously or make his or her name available for approved follow-up studies. The orchestra's entire set of completed, individually sealed questionnaires was mailed to the research staff at the University of Illinois. Responses on all questionnaires were treated as strictly confidential.

Sample

Thanks to the cooperation of the musicians and the work of the ICSOM delegates, 2212 completed questionnaires were received from musicians performing in 47 of the 48 ICSOM orchestras. Thus, 55% (2212/4025) of all ICSOM musicians participated in the study. The response rate of orchestras ranged from 0% (one orchestra did not participate) to 95% (the Detroit Symphony).

Table 1 shows the number of musicians in the sample and in the population separately for the four types of orchestras. Note that 639 (29%) of the sample are from Small orchestras, 641 (29%) are from Medium orchestras, and 768 (35%) are from Large orchestras. The remaining 164 respondents (7%) are from the Special orchestras. These percentages from the sample differ from those in the total population of ICSOM musicians (25%, 29%, 33%, and 13% for Small, Medium, Large, and Special Orchestras, respectively). Thus, musicians performing with Special orchestras are underrepresented in the sample, while musicians from Large and Small orchestras are slightly overrepresented.

These sample biases are also apparent in examination of the response rates shown in the center line of Table 1. Note that relative to the Large and Medium orchestras (with response rates of about 56%), the Special orchestras have a very low response rate (32%), while the response rate among Small orchestras is slightly higher (62%). It is important to recognize that the low response rate among Special orchestras occurs primarily because many of them were not in season at the time of the survey.

Table 2 shows the number of ICSOM musicians in the sample and in the total population, this time as a function of the musicians' gender, instrument, and instrument group.

TABLE 1. Number of Musicians in Sample (and in Population) By Type of Orchestra

	Type of Orchestra				Overall
	Small	Medium	Large	Special	
Number of Musicians					
In sample	639	641	768	164	2212
In population	(1025)	(1156)	(1325)	(519)	(4025)
Response rate	62%	55%	58%	32%	55%
Percent of Musicians					
In sample	29%	29%	35%	7%	100%
In population	(25%)	(29%)	(33%)	(13%)	(100%)

TABLE 2. Number of Musicians in Sample (and in Population) by Gender, Instrument, and Instrument Group

<i>Instrument</i>	<i>Males</i>	<i>Females</i>	<i>Total</i>
First violin	192 (388)	202 (300)	394 (688)
Second violin	138 (290)	163 (314)	301 (604)
Viola	134 (255)	116 (198)	250 (453)
Cello	142 (259)	99 (181)	241 (440)
Bass	170 (297)	22 (34)	192 (331)
<i>String</i>	776 (1489)	602 (1027)	1378 (2516)
Flute and piccolo	38 (75)	57 (85)	95 (160)
Oboe and English horn	61 (102)	28 (54)	89 (156)
Clarinet and sax	73 (139)	9 (20)	*83 (159)
Bassoon	61 (126)	18 (28)	79 (154)
<i>Woodwinds</i>	233 (442)	112 (187)	*346 (629)
French horn	119 (206)	24 (35)	143 (241)
Trumpet	91 (151)	59 (9)	96 (160)
Trombone	79 (144)	6 (4)	85 (148)
Tuba	29 (46)	0 (1)	29 (47)
<i>Brass</i>	318 (547)	35 (49)	353 (596)
Percussion and tympani	81 (179)	12 (15)	93 (194)
Harp	4 (7)	22 (45)	26 (52)
Keyboard	2 (16)	11 (22)	13 (38)
<i>Other</i>	87 (202)	45 (82)	132 (284)
All instruments	†1416 (2680)	794 (1345)	‡2122 (4025)

*One clarinet player did not indicate his or her gender.

†Two males did not indicate their instruments.

‡One person indicated neither gender nor instrument.

Note that women make up 36% of the sample (794/2212), but only 33% of the population (1345/4025). Similarly, musicians playing instruments in the "other" instrument group (i.e., percussion, tympani, harp, and keyboard) make up only 6% of the sample (132/2212) but 7% of the total population (284/4025). Thus, in addition to underrepresenting musicians performing with Special orchestras, the sample overrepresents female musicians and underrepresents musicians playing instruments from the "other" group.

Weighting Model

Because the obtained sample was slightly disproportionate with respect to gender, instrument group, and type of orchestra, statistical weighting was necessary. The weighting process adjusts for non-response and balances the sample to permit meaningful projections of the sample data to the total population of ICSOM musicians. Generally, weights were based on subgroups created by the three-way combination of gender by instrument group by type of orchestra. In two instances, it was necessary to combine subgroups because there were too few musicians in the population. The weighting model resulted in projections to the total population of ICSOM musicians which are accurate within $\pm 2\%$.

The data presented in the remainder of this report are sample results which have been weighted and projected up to the total population of musicians playing on a regular basis with one or more of the 48 ICSOM orchestras.

Results

Composition of ICSOM Orchestras

Table 3 provides descriptive information about the four types of orchestras and about ICSOM. Looking first at the data over all orchestras, and comparing these data to the population data presented in Table 2, it can be seen that the weighting was successful in terms of recapturing the sex and instrument group percentages. For example, Table 3 shows that 33% of the musicians in the weighted sample are female. This is compared to 33% of the total population (1345/4025). Similarly, the distribution of musicians across instrument groups shown in Table 3 is virtually identical to the population distribution shown in Table 2.

More important than demonstrating the adequacy of the weighting model, however, Table 3 describes the composition of the four different types of ICSOM orchestras by instrument group, gender, and age. Note that although the distribution of instrument groups is quite similar in the four types of orchestras, the Special Orchestras have a higher proportion of woodwind and brass players and a smaller proportion of string players than either the Small, Medium, or Large orchestras.

In contrast to their similarity regarding instrument group, Table 3 shows that these orchestras differ markedly in both gender and age composition. As was indicated earlier, there are twice as many males as female orchestra musicians. According to the data in Table 3, this ratio is not consistent across types of orchestras, but changes systematically with the type of orchestra. As one moves from Small to Medium to Large Orchestras, the percentage of female musicians is reduced from 42% to 37% to 23%.

It is interesting to note that in contrast to women playing in Small or Medium orchestras, the women playing in Large orchestras are, on average, significantly younger than their male counterparts. The primary reason for this difference is that the average age of male, but not female, musicians increases as one moves from Small to Medium to Large

TABLE 3. Composition of ICSOM Orchestras by Type of Orchestra

	<i>Type of Orchestra</i>				
	<i>Small</i>	<i>Medium</i>	<i>Large</i>	<i>Special</i>	<i>Overall</i>
<i>Percentage by Instrument Group</i>					
String	62%	64%	64%	57%	62%
Woodwind	15%	15%	15%	18%	16%
Brass	15%	14%	14%	18%	15%
Other	8%	7%	7%	7%	7%
TOTAL	100%	100%	100%	100%	100%
<i>Percentage by Gender</i>					
Male	58%	63%	77%	65%	67%
Female	42%	37%	23%	35%	33%
TOTAL	100%	100%	100%	100%	100%
<i>Average Age</i>					
Male	38	41	47	45	43
Female	38	41	40	42	40
Overall	38	41	46	44	42

Musicians of the three age groups were similar in their concern about cigarettes and alcohol, but differed in their worry about prescription and nonprescription drug use.

orchestras. In Large orchestras, male musicians, on average, are slightly older than female musicians (43 vs. 40 years). Because men outnumber women two-to-one, the average age of an ICSOM musician is 42 years.

The average age at which ICSOM musicians begin playing their orchestral instruments is 10 years and the average age at which they joined a professional orchestra is 23 years. These averages do not vary as a function of the type of orchestra.

General Health Habits of ICSOM Musicians

Fully 61% of ICSOM musicians reported that they get regular physical exercise. Although there was no relationship between gender and exercising, there was a linear relationship between age and exercising. Not surprisingly, a larger percent of those under 35 (67%) exercise regularly. Among those aged 35 to 45, 62% exercise, as compared to 55% of those over 45.

Use of three substances—cigarettes, alcohol, and prescription and nonprescription drugs—is of concern to health professionals. The musicians were asked whether they were concerned about the adverse effects on themselves of these three types of substances. Overall, 10% worried about smoking, 21% about alcohol, and 20% about use of prescription and/or nonprescription drugs. Men were more concerned than women about cigarettes and alcohol, but slightly less concerned than women about using prescription and/or nonprescription drugs. Musicians of the three age groups were similar in their concern about cigarettes and alcohol, but differed in their worry about prescription and nonprescription drug use. That is, those between 35–45 were somewhat more worried about the adverse effects of drug use than were either younger or older musicians.

Use of Beta Blockers by ICSOM Musicians

A major question in the field of music medicine concerns the extent to which beta blockers are used in dealing with performance anxiety. A portion of the questionnaire was devoted to this topic in order to gather data on the use and perceived effectiveness of beta blockers.

Fully 27% of ICSOM musicians have used propranolol hydrochloride (Inderal) or some other beta blocker. The use of beta blockers was higher among women (31%) than men (26%), and more common among those under 35 (30%) than over 45 (23%). There were also differences as a function of instrument group. Brass players were more likely to report using beta blockers (32%) than were musicians playing an instrument from one of the other three instrument groups (27%).

Each respondent who used beta blockers was asked if the medication was prescribed “for a heart problem, headache, or other medical condition” and how often the medication

TABLE 4. Types of Beta Blocker Users by Gender and Age

User Type	By Gender		By Age			Overall
	Males	Females	<35	35–45	>45	
Prescribed daily	24%	10%	5%	11%	46%	19%
Prescribed occasional	12%	11%	10%	14%	11%	11%
Nonprescribed occasional	64%	79%	85%	75%	43%	70%
	100%	100%	100%	100%	100%	100%

was used. A profile emerged of three types of users: (1) daily prescribed users—those who use beta blockers daily under prescription to treat a medical condition; (2) occasional prescribed users—those who use beta blockers occasionally under prescription; and (3) occasional nonprescribed users—those who use beta blockers occasionally without a prescription.

Table 4 shows that the vast majority of those using beta blockers do so without a doctor’s prescription: 11% are daily prescribed users, 12% are occasional prescribed users, and 70% are occasional nonprescribed users. Not surprisingly, given the cardiovascular conditions for which beta blockers are prescribed, user type depends on both the age and gender of the musician. Among those over 45, 46% are likely to be daily prescribed users, while only 5% of those under 35 fall into this category. More males (24%) than females (10%) are daily prescribed users. Thus, occasional nonprescribed use is higher among those under 35 (85%) and those between 35 and 45 (75%) than among those over 45 (43%). In addition, nonprescribed occasional use is higher among females (79%) than males (64%).

It is important to determine the circumstances under which occasional users take beta blockers. Over all occasional users (both prescribed and nonprescribed), beta blockers are most likely to be used before auditions (72%). They are next most likely to be used before solo recitals (52%), difficult orchestral performances (50%), and concerto performances (42%). Very few (4%) occasional users report taking beta blockers before every orchestral performance.

The situations in which beta blockers are used differ between men and women. For example, while more men use beta blockers before difficult orchestral performances (54%) than before solo recitals (47%), the picture is reversed for women. Of female occasional users, 59% take beta blockers before solo recitals and 44% use them before difficult orchestral performances.

The final question on the use of Inderal and other beta blockers concerns the extent to which the drugs are perceived to be effective in reducing performance anxiety. Over 96% of the musicians who occasionally use beta blockers report success in reducing performance anxiety. Beta blockers appear to be as effective for men (97%) as for women (96%), and appear to be slightly more effective for players under 45 (98%) than over 45 (89%).

Given the high proportion of musicians who use beta blockers, it seems imperative that research be conducted to determine the short- and long-term effects of the drugs on musicians’ performance and health.

Prevalence of Medical Problems Among ICSOM Musicians

One of the main purposes of the survey was to determine the prevalence of medical problems among professional orchestra musicians. Prevalence refers to the percent of a population with a given problem at a given time, not to the likelihood of developing that problem. Thus, although 20% of current ICSOM musicians may have a particular medical problem, this does not mean that musicians have a 20% risk of developing it. Indeed, prevalence often underestimates the risk or incidence of a problem. Musicians with extremely severe problems may no longer be able to perform, and therefore may have dropped out of the population.

The results show that the prevalence of medical problems among ICSOM musicians is very high. In fact, 82% of ICSOM musicians reported experiencing a medical problem, and 76% listed at least one problem as severe in terms of its effects on their performance. The questionnaire allowed respondents to indicate up to four severe problems; 14% of the musicians reported one severe problem, 14% indicated two, 12% listed three, and fully 36% reported four severe problems.

Compared to males, female musicians were more likely to report at least one medical problem (89% vs. 78%) and at least one severe problem (84% vs. 72%). There were also differences in the prevalence of problems as a function of age. Musicians between 35 and 45 were most likely to report at least one problem (86%), while those under 35 and over 45 were less likely to list a problem (80% in both instances). The pattern was somewhat different for severe problems. Again, musicians between 35 and 45 were most likely to report at least one problem as severe (81%). Severe problems were more common in people under 35 (77%) than over 45 (71%). The lower prevalence of severe problems among older musicians may indicate that after 45, musicians with severe problems are leaving the orchestras.

The percentage of musicians mentioning medical problems also differed by type of instrument. Medical problems were most prevalent among string players, as 84% of them reported at least one medical problem and 78% indicated at least one severe medical problem. Among players from the woodwind, brass, and "other" instrument groups, 79% of each group indicated at least one medical problem, and 75% or fewer indicated at least one severe problem. There were essentially no differences in the prevalence of medical problems as a function of the type of orchestra in which one performed.

Table 5 lists specific medical problems, and shows both the percent of musicians who indicated experiencing each problem and the percent who listed it as severe. The top half of the table gives problems at musculoskeletal locations, while the bottom half present the non-musculoskeletal problems.

The shoulder, neck, and back appear to be musculoskeletal locations at which many musicians experience problems that are often severe. More specifically, 20% indicated problems with the right shoulder; 20% with the left shoulder; 21% with the right neck; 22% with the left neck; 22% with the right lower back; and 22% with the left lower back. Not surprisingly, few musicians reported problems at lower-body musculoskeletal locations. Table 5 shows that

TABLE 5. Prevalence of Problems Mentioned by ICSOM Musicians

Problem	Location	Percent Mentioning As	
		Problem	Severe Problem
<i>Musculoskeletal Problem</i>			
Finger	Right	9%	5%
Finger	Left	16%	9%
Hand	Right	9%	5%
Hand	Left	14%	10%
Wrist	Right	10%	5%
Wrist	Left	9%	5%
Forearm	Right	7%	4%
Forearm	Left	8%	5%
Elbow	Right	10%	6%
Elbow	Left	8%	4%
Shoulder	Right	20%	13%
Shoulder	Left	20%	11%
Neck	Right	21%	13%
Neck	Left	22%	12%
Upper Back	Right	16%	9%
Upper Back	Left	16%	8%
Middle Back	Right	11%	5%
Middle Back	Left	11%	5%
Lower Back	Right	22%	13%
Lower Back	Left	22%	11%
Hip	Right	3%	1%
Hip	Left	3%	1%
Knee	Right	4%	1%
Knee	Left	4%	1%
Calf	Right	1%	0%
Calf	Left	1%	0%
Ankle	Right	2%	0%
Ankle	Left	2%	0%
Foot	Right	3%	0%
Foot	Left	2%	0%
Toe	Right	1%	0%
Toe	Left	1%	0%
<i>Non-musculoskeletal Problem</i>			
Acquired dental malocclusion		3%	1%
Acute anxiety		13%	8%
Ashma		4%	2%
Chin rest sore		11%	3%
Depression		17%	7%
Earaches		7%	2%
Other ear problems		13%	7%
Eye strain		24%	10%
Other eye problems		8%	4%
Severe headache		10%	5%
Heart condition		4%	1%
Hemorrhoids		12%	3%
High blood pressure		7%	3%
Inguinal hernia		4%	2%
Loss of lip		2%	1%
Loss of seal		1%	0%
Mouth lesions		3%	2%
Respiratory allergies		12%	4%
Sleep disturbances		14%	5%
Stage fright		24%	16%
TMJ syndrome		11%	4%
Ulcer		4%	1%
Varicose veins		4%	1%
Weight problems		11%	3%

many musicians did report experiencing musculoskeletal problems with their fingers, hands, and arms. For example, 16% indicated problems with the left fingers, 14% with the left hand, and 9% with the left wrist. On the right side, these percentages were 9%, 9%, and 10% respectively.

Of the non-musculoskeletal medical problems listed at the bottom of Table 5, eye strain and stage fright were the most prevalent. Fully 24% of ICSOM musicians reported experiencing each of these two problems. Stage fright was by far (16%) the most frequently mentioned non-musculoskeletal severe problem. Many ICSOM musicians reported experiencing psychological problems such as acute anxiety (13%), depression (17%), and sleep disturbances (14%).

The prevalence of many of the specific medical problems differed according to the gender, age, instrument group, and, to a lesser extent, the orchestra type of the musician. It is beyond the scope of this report to present these data for each problem. However, more detailed findings are presented for two specific medical problems: stage fright and a musculoskeletal problem of the left hand.

Focus on Stage Fright as a Severe Problem

The prevalence of stage fright, the most frequently mentioned severe problem among ICSOM musicians, differed depending on the gender, age, instrument group, and type of orchestra of the musician. Women (19%) were more likely to mention stage fright as a severe problem than men (14%). A curvilinear relationship was found between prevalence of stage fright and age. Those between 35 and 45 (19%) were more likely to report stage fright as a severe problem than were those under 35 (17%) or those over 45 (11%). In terms of instrument group, 22% of brass musicians reported severe stage fright, compared to 14% of string players, 14% of woodwind players, and 17% of players of "other" instruments. Finally, stage fright was only slightly related to type of orchestra. Those musicians most likely to have severe stage fright were performing in Small orchestras (17%), while those least likely to have severe stage fright were performing in Large orchestras (14%).

A key question in the area of music medicine concerns what musicians do to treat their medical problems. Table 6 lists the 11 most popular treatments tried by the musicians who experience stage fright as a severe problem. The table also shows the percent of those with the problem who tried each treatment (number who tried treatment divided by number with stage fright as severe problem) and the success ratio for that treatment (number who found treatment effective divided by number who tried treatment).

It is clear from Table 6 that prescribed medication is the most frequently tried treatment for severe stage fright. Fully 40% of those who indicated stage fright as a severe problem

reported they had tried a prescription medicine, and of those, 92% found the treatment effective. These findings are consistent with the data reported above concerning the use of beta blockers.

Psychological or psychiatric counseling was the second most frequently tried treatment for stage fright. Among those with severe stage fright, 25% have tried some form of counseling, and 60% of them have found it effective.

TABLE 6. Treatments Tried and Found to be Effective for Stage Fright as a Severe Problem

	Percent Tried*	Success Ratio†
Prescribed medication	40%	92%
Psychological counseling	25%	60%
Aerobic exercise	17%	70%
No treatment	14%	26%
Hypnosis	13%	60%
See general practitioner	11%	27%
Yoga	9%	58%
Non-prescribed medication	6%	46%
Alexander technique	4%	47%
Massage therapy	4%	38%
Rest—stop playing	3%	100%

*Number who tried treatment divided by the number of respondents who indicated stage fright as a severe problem.

†Number who reported treatment to be effective divided by number who tried treatment.

ICSOM musicians reporting severe stage fright have also tried to treat this problem with aerobic exercise (17%), hypnosis (13%), yoga (9%), massage therapy (4%), and the Alexander technique (4%). In addition, 12% indicated they had tried some form of treatment not on the list provided. Meditation, relaxation, biofeedback, and movement therapy were some of the treatments written in by respondents. Among these alternative treatments, aerobic exercise appears to be most effective (with a 70% reported success ratio), while massage therapy seems least effective (with a 38% success ratio).

Not surprisingly, few of those with severe stage fright reported seeing a doctor or specialist other than one with psychological training. Nevertheless, 11% indicated that they had seen a general practitioner. Unfortunately, general practitioners appear to be relatively ineffective in dealing with stage fright; 27% of those who consulted a GP for severe stage fright reported their visit effective.

The selection of treatment for severe stage fright depended somewhat on the gender and age of the musician. For example, women were slightly more likely than men (44% vs. 38%) to try prescribed medication. Generally speaking, younger musicians were slightly more likely than older musicians to try a prescription medicine. While 44% of those under 35 have tried medication, only 39% of those between 35 and 45 and 34% of those over 45 have tried prescription medication for severe stage fright. Despite the gender and age differences in those attempting treatment, all gender and age groups found the use of prescription medication successful.

Prescribed medication is the most frequently tried treatment for severe stage fright.

14% of ICSOM musicians indicated they had a problem in the left hand, with 10% reporting the problem as severe.

With respect to psychological or psychiatric counseling, there were no gender differences. However, a curvilinear relationship was found between going to a counselor and age. That is, those under 35 (31%) were the most likely to try counseling. Only 20% of those between 35 and 45 and 25% of those over 45 have tried counseling for stage fright. A somewhat higher success ratio was found for females than for males (65% vs. 57%) and for those under 35 (60%) or over 45 (63%) than for those in the intermediate age group (58%).

Focus on a Severe Musculoskeletal Problem in the Left Hand

As shown in Table 5, 14% of ICSOM musicians indicated they had a problem in the left hand, with 10% reporting the problem as severe. The prevalence of this problem did not vary with age, but was higher among females (13%) than males (8%). Not surprisingly, and not unrelated to the findings on gender differences, severe problems in the left hand were mentioned most frequently by string players (12%), least frequently by brass players (2%), and occasionally by woodwind (7%) and "other" instrument (9%) players. Although beyond the scope of this report, the relationship between prevalence and instrument group suggests an occupational component in the etiology of the left hand problem.

Pain was the most frequent symptom for a problem at this musculoskeletal location, and had been experienced by 67% of those reporting a severe problem in the left hand. Stiffness (39%), weakness (38%), restricted range of motion (27%), and decreased motor control (23%) were also reported as symptoms. Of the musicians reporting a musculoskeletal problem in the left hand, 26% received a diagnosis of tendinitis, 14% of arthritis, and 9% of pinched nerve.

Table 7 shows the treatments attempted by ICSOM musicians who reported a severe musculoskeletal problem in the left hand. The table presents the percent of those with the problem who tried each treatment and the percent who found the treatment effective (i.e., the success ratio).

A comparison of Table 6 to Table 7 shows that a wider range of treatments was attempted by those with a severe musculoskeletal problem in the left hand than by those with severe stage fright. Rest was the most frequently attempted treatment (37%) for a musculoskeletal problem in the left hand, and was found effective by 84% of those who stopped playing.

Many ICSOM musicians suffering from a severe problem in the left hand applied heat (32%) or ice (19%). While heat was reported moderately effective (47%), ice was considered relatively ineffective (30%). Both prescribed (28%) and nonprescribed (14%) medications were also used with moderate success (46% and 48%, respectively).

ICSOM musicians having a severe left hand problem consulted various medical professionals: 15% saw an orthopedist; 15%, a general practitioner; 13%, a neurologist; 8%, a surgeon; and 4%, some other specialist (e.g., a rheumatologist or a hand specialist). The success ratios for visits to most medical professionals were very low. However, 6% of those with a severe musculoskeletal problem in the left hand have had surgery for the problem, and fully 94% found the surgery effective.

TABLE 7. Treatments Tried and Found to be Effective for a Severe Musculoskeletal Problem in the Left Hand

	Percent Tried*	Success Ratio†
Rest—stop playing	37%	84%
Application of heat	32%	47%
Prescribed medication	28%	45%
Application of ice	19%	30%
Massage therapy	17%	64%
Chiropractic manipulation	15%	50%
See orthopedist	15%	20%
See general practitioner	15%	6%
Nonprescribed medication	14%	48%
See neurologist	13%	13%
Physical therapy	13%	82%
Acupuncture	11%	40%
Braces or splints	11%	30%
No treatment	10%	36%
See surgeon	9%	22%
Alexander technique	8%	65%
Injection	8%	37%
Structured muscle strengthening	7%	69%
Surgery	6%	94%
Osteopathic manipulation	6%	37%
Aerobic exercise	5%	51%
Yoga	5%	74%
Other specialist	4%	29%

*Number who tried treatment divided by number of respondents who indicated a severe musculoskeletal problem in the left hand.

†Number reported treatment to be effective divided by number who tried treatment.

ICSOM musicians have also tried many forms of manipulation and movement therapy to treat severe left hand problems. More specifically, 17% tried massage therapy; 15%, chiropractic manipulations; 13%, physical therapy; 7%, structured muscle strengthening; 8%, the Alexander technique; 6%, osteopathic manipulations; 5%, aerobic exercise; and 5%, yoga. As shown in Table 7, many of those who tried these treatments found them successful.

Fully 76% of musicians performing with the 48 ICSOM orchestras reported at least one medical problem that was severe in terms of its effect on performance.

Given the high proportion of musicians who use beta blockers, it seems imperative that research be conducted to determine the short- and long-term effects of the drugs on musicians' performance and health.

Summary and Conclusion

The purpose of this report was to provide an overview of a national survey of professional orchestra musicians. The findings clearly show a very high prevalence of medical problems in this population. Fully 76% of musicians performing with the 48 ICSOM orchestras reported at least one medical problem that was severe in terms of its effect on performance. Stage fright was the most prevalent medical problem. The neck and back were the most frequently mentioned locations for musculoskeletal problems. The

prevalence of specific medical problems differs depending on various characteristics of the musicians, including gender, age, and instrument group. The specific sections on stage fright and a musculoskeletal problem of the left hand demonstrate that ICSOM musicians are trying a wide range of treatments for their medical problems. More than one-fourth of ICSOM musicians report using beta blockers, and most report using them occasionally without a physician's prescription. The vast majority of occasional users has found these drugs effective in reducing performance anxiety.

Given the proportion of professional musicians reporting medical problems severe enough to affect performance, there can be little doubt that music medicine is a field that deserves serious attention from health professionals. There is an urgent need for techniques to treat and prevent a variety of occupation-related medical problems. Information on these problems should be disseminated to musicians and their physicians, teachers, and other concerned professionals. ICSOM has done much to open up the issue of music medicine. Clearly, the magnitude of the problem warrants continued work in the field.