

2003

Use of music by collegiate athletes

Laura D. Ellingson
The University of Montana

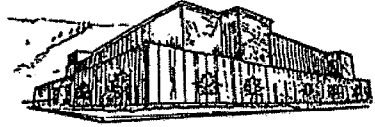
Let us know how access to this document benefits you.

Follow this and additional works at: <https://scholarworks.umt.edu/etd>

Recommended Citation

Ellingson, Laura D., "Use of music by collegiate athletes" (2003). *Graduate Student Theses, Dissertations, & Professional Papers*. 3978.
<https://scholarworks.umt.edu/etd/3978>

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.



**Maureen and Mike
MANSFIELD LIBRARY**

The University of
Montana

Permission is granted by the author to reproduce this material in its entirety, provided that this material is used for scholarly purposes and is properly cited in published works and reports.

****Please check "Yes" or "No" and provide signature****

Yes, I grant permission

No, I do not grant permission

Author's Signature: Laura Ellinger

Date: August 18, 2003

Any copying for commercial purposes or financial gain may be undertaken only with the author's explicit consent.

USE OF MUSIC BY COLLEGIATE ATHLETES

by

Laura D. Ellingson

B.S., Western Washington University, 2001

B.A., Western Washington University, 2001

presented in partial fulfillment of the requirements

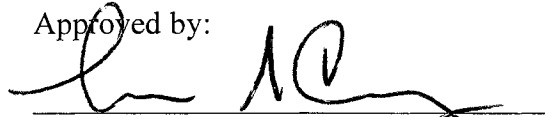
for the degree of

Master of Science

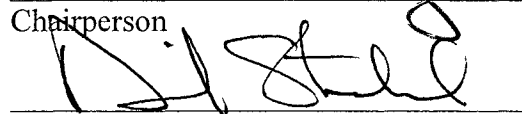
The University of Montana

August 2003

Approved by:



Chairperson



Dean, Graduate School

8-22-03

Date

UMI Number: EP35469

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI EP35469

Published by ProQuest LLC (2012). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code



ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Thesis Abstract

Ellingson, Laura D., M. S. August 2003

Health and Human Performance

Use of Music by Collegiate Athletes

Committee Chair: Lewis A. Curry, Ph.D.



The purpose of the present investigation was to determine the general and sport-specific uses of music by collegiate, student-athletes. Four main research questions were investigated. Firstly, are athletes currently utilizing music? Are there differences in usage with respect to gender, year of athletic eligibility, level of competition, and/or age? Secondly, for what purposes is music being used in the hours and days before competition? Thirdly, what specific music artists and/or tracks are student athletes using when preparing for competition? And lastly, what meaning and value do athletes place on music in their lives outside of sport, and does this meaning and value correlate with their use of music in sport?

169 student athletes were surveyed using the Use of Music in Sport Questionnaire, developed specifically for this study. Descriptive statistics showed that the vast majority of participants incorporate music into their pre-performance routines. There were no differences in music usage with respect to gender, year of athletic eligibility, level of competition, or age. Participants reported using music most frequently for “psych-up”, followed by imagery and visualization, relaxation, and taking one’s mind off performing. Further, participants reported using a wide variety of different artists and tracks in preparation for competition.

More research is needed in this area to gain a greater understanding of the ways in which student athletes use music to influence sport performance. Issues yet to be addressed include the effectiveness of music related interventions and the mediating factors that may influence their success. Nonetheless, the results of the present study do add to the growing body of research, supporting the inclusion of music in sport preparation.

TABLE OF CONTENTS

<i>Introduction</i>	1
Background on music uses.....	1
Music in Performance Psychology.....	3
Purpose of the Present Investigation.....	5
<i>Methods</i>	6
Participants.....	6
Questionnaire.....	7
Procedure.....	9
<i>Results</i>	10
<i>Discussion</i>	13
<i>References</i>	17
<i>Appendix A: Use of Music in Sport Questionnaire</i>	20
<i>Appendix B: Specific Artists and Tracks Used to Get ‘Psyched-Up’ for Competition</i>	27
<i>Appendix C: Specific Artists and Tracks Used to Relax Before Competition</i>	31
<i>Appendix D: Specific Artists and Tracks Used to Image and Visualize</i>	35
<i>Appendix E: Specific Artists and Tracks Used to Take One’s Mind off Performing</i>	38

LIST OF TABLES

Table 1: Specific Music Uses by Athletes in the Hours Before Competition.....	41
Table 2: Specific Music Uses by Athletes One to Three Days Before Competition....	42
Table 3: Gender Differences in Music Use in the Hours Before Competition.....	43

Use of Music by Collegiate Athletes

For many athletes, music appears to be an integral part of their collegiate athletic experience. With the advent of portable tape and CD players, athletes are frequently seen listening to music, via headphones, prior to sporting events (Weinberg & Gould, 1999). Further, music is often played in locker rooms and stadiums before and after competitions as well as during pauses in play. Athletes, coaches, and practitioners in sport psychology increasingly attest to the effectiveness of using of music to enhance performance in sport (L. A. Curry, personal communication, October 2002; Henschen, 1998; Vernacchia, 1996; Williams & Harris, 1998). However, the majority of current literature, with respect to both music's effectiveness and the prevalence of its use, relies heavily on anecdotal and/or testimonial evidence. The lack of empirical research, including research on current uses of music by athletes, has hindered the development of effective, music-based, sport psychology interventions, as well as effective testing of such interventions.

Background on Music Uses

Music has been an important part of human existence since the beginning of recorded history (Lucaccini & Kreit, 1972). For centuries, people have utilized music's melodies and rhythms as an integral part of many rituals and ceremonies (Lösel, 2000). It is one facet of life found in nearly every aspect of all known cultures (Shreeve, 1996).

Music has long been recognized for its healing abilities, as well as its power to affect thought processes, mood, and energy (Lösel, 2000; Scott, 2000). It is believed to be both the earliest and most popular means for producing appropriate mood states and directing attentional focus (Czikszenmihalyi, 1991). More recently, neurological studies have confirmed that music directly affects both physiological processes and brain

structures (Lösel; Scott; Shemagonov & Sidorenko, 2000; Sidorenko, 2000; Thompson & Andrews, 2000). This evidence has been used to support the application of music in a wide range of fields.

One such field, the world of sport, is very much connected with music. Music is experienced through loud speakers, live bands, stereos, and headphones throughout a majority of sporting events (Hohler, 1989). It serves a variety of purposes including assembling and unifying athletes and fans, regulating the movements of individuals and groups, and evoking motor reactions (Hohler). However, though music appears to play an active and prevalent role, its connection to sport, health, and fitness is far from fully understood.

The vast majority of empirical literature concerning the effects of music on physical performance comes from the areas of health and fitness, and exercise psychology. There are numerous studies employing music, which examine a variety of effects on the human mind and body (Karageorghis & Terry, 1997, Lucaccini & Kreit, 1972). Nearly all of these studies take place in controlled, laboratory settings and examine the effects of music on variables such as heart rate, breathing rate, rate of perceived exertion (RPE), time to fatigue/endurance, and overall performance (Boutcher & Trenske, 1990; Copeland & Franks, 1991; Dorney, Goh, & Lee, 1992; Ellis & Brighouse, 1952, Pujol & Langenfeld, 1999; Schwartz, Fernall, and Plowman, 1990). Taken together, results of studies in this area are inconclusive, with some showing ergogenic effects (Boutcher & Trenske; Copeland & Franks) and others either remaining uncertain (Ellis & Brighouse), or revealing no significant differences (Dorney et al.; Pujol & Langenfeld; Schwartz et al.).

Relative to exercise psychology, Gfeller (1989) conducted a study attempting to understand students' perceptions of the effects of music in aerobics classes. She hypothesized that certain musical components (e.g. tempo, rhythm, and style), personal preferences, and music's ability to evoke extra-musical associations may mediate the perceived effectiveness of music in aerobics classes. Gfeller found that the above variables did significantly affect student attitudes, with 97% of respondents indicating that music made a difference in their class performance.

Music in Performance Psychology

Music has also been empirically studied both in sport settings and with athlete populations. However, the focus has been more on the use of music for sport performance preparation rather than as a part of the sport performance itself. One such study by Ferguson, Carbonneau, and Chambliss (1994) examined the effects of listening to music prior to performance of a karate drill. Karate students performed a specified drill three times following one-minute exposures to three different conditions: positive music (fast tempo, loud), negative music (slow tempo, soft), and white noise. Both karate experts and the students, themselves, rated performances higher, following exposure to either type of music. Ferguson et al. hypothesized that the musical selections aided in the students' comfort and relaxation, thus enhancing their performance.

With respect to prevalence of music use in pre-performance routines, Theise and Huddleston (1999) conducted a study on the application of mental skills by female, collegiate swimmers. They found that swimmers frequently reported using music both for 'psych-up' and for relaxation. Music for 'psych-up' rated third among the skills most used by participants.

Butryn (2002) extended the work of Theise and Huddleston (1999), by examining athletes' use of music more specifically. In his qualitative study, Butryn investigated the use of music before, during, and after practices and competitions through interviews with sixteen intercollegiate athletes. Questions related to the role of music in childhood and adolescence, the role of music in daily life and in sport, and music preferences. Butryn found that athletes use a wide variety of musical types and selections, for a number of purposes. All athletes reported using music for arousal control, specifically for "getting pumped or psyched up". Athletes also discussed regularly using music to boost confidence, to improve team unity, to match their body's rhythm and flow, and to reflect their personal identity. Butryn also found that sensitivity to both individual and team preferences, is essential when choosing music for individual interventions and/or for group settings (e.g. music played in locker rooms). However, limitations such as the relatively small sample size and inclusion of only those athletes that currently utilize music restrict the generalizability of findings and any subsequent recommendations for music-related interventions.

Encouraged by empirical research, anecdotal evidence, and testimonials, practitioners in performance psychology are increasingly recommending incorporation of music into pre-performance and competition routines. Weinberg and Gould (1999) refer to listening to music as a strategy for arousal control. They state that music can be used to energize an athlete prior to competition, as well as increasing enthusiasm and emotion during exercise. Further, Henschen (1998) recommends use of music for relaxation to combat athletic staleness and burnout.

In line with recommendations, a relaxation and guided imagery CD was created by Western Washington University for use by United States, track and field athletes in preparation for the 2000 Olympic Games (Vernacchia, 1998). Music was included throughout the CD to enhance its effectiveness. Soft, slow music was used in the background during the progressive relaxation exercise, a method of training muscles to sense and release unwanted tension (Williams & Harris, 1998). Further, music was also included as a part of guided imagery, exercises for helping athletes learn to use visualization to alter arousal levels.

Vernacchia, McGuire, and Cook (1992), recommend the use of music as an essential component of mental rehearsal tapes and CDs. For this type of intervention, music is thought to enhance imagery indirectly through enhancing one's attentional readiness (Norretranders, 1998). For mental rehearsal to be most beneficial, Vernacchia et al. stress that music should be individually selected in order to induce an appropriate mood and an optimal level of emotional arousal. Along similar lines, Templin and Vernacchia (1995), recommend incorporating musical selections, chosen by athletes, into video highlight tapes. They stress that each athlete must choose the music for him/herself in order for the tapes to be effective. However, while many practitioners propose incorporating music into athletes' pre-performance routines, little research exists with respect to the actual practices of athletes.

Purpose of the Present Investigation

The present study was designed to assess the use of music by athletes. More specifically, the purpose of the present investigation was to determine the general and sport-specific uses of music by collegiate, student-athletes. Four main research questions

were investigated. Firstly, are athletes currently utilizing music? Are there differences in usage with respect to gender, year of athletic eligibility, level of competition, and/or age? Secondly, for what purposes is music being used in the hours and days before competition? Thirdly, what specific music artists and/or tracks are student athletes using when preparing for competition? And lastly, what meaning and value do athletes place on music in their lives outside of sport, and does this meaning and value correlate with their use of music in sport? Since literature in this area is lacking, no hypotheses can be formulated and statistics will be restricted to limited empirical and descriptive analyses.

Methods

Participants

Participants consisted of 169 male (n = 68) and female (n = 101) collegiate, student athletes from six, western and mid-western, Division I universities (n = 129), and one western, NAIA university (n = 40). Student athletes were recruited from twelve varsity sports including basketball (n = 29), crew (n = 5), cross country (n = 17), diving (n = 1), fencing (n = 1), football (n = 21), golf (n = 1), soccer (n = 10), softball (n = 7), tennis (n = 1), track and field (n = 35), and volleyball (n = 34), and three club sports, skiing (n = 1), lacrosse (n = 1) and rodeo (n = 5). Participants range in age from 18-27, with 97% falling between the ages of 18 and 24. Twenty-six percent of participants were freshman, 32% sophomores, 21.9% juniors, and 20.1% seniors. The sample was 80.5% Caucasian, 5.3% Native American, 3.6% African American, 2.4% Asian, 1.8% Hispanic, and 6.5% other.

The musical background of participants was also assessed. Music was both present and emphasized in the homes of 40.8% of participants while growing up, and

another 50.9% reported that they were raised in homes where music was at least present. Sixty-two percent of participants played a musical instrument at some point in their lives and 14.2% still play. Further, 6.5% had voice training and 26.6% reported that singing and dancing were common family and/or community experiences for them.

Questionnaire

The *Use of Music in Sport Questionnaire* (Appendix A) was developed by the investigators, specifically for the purposes of the present study. Demographic information related to age, sport, position/event, NCAA Division, ethnicity, gender, and year of eligibility is requested from each participant. Further, background information related to family preferences for music in the home, musicality of family members, history of learning/playing musical instruments, and experiences singing and dancing during participants' youth was also requested.

The main body of the survey consists of five sections regarding athletes' use of music in a variety of domains. Section one consists of 14 items regarding the general role of music in an athlete's daily life. Sample items include preference for music over television, use of music while walking or riding in a vehicle, and the influence of music on one's emotional state. All items are scored on a three-point, Likert-type scale with options of: never, sometimes, and always. Participants are directed to circle the word that best fits them for each statement.

Section two deals with the general meaning and value participants assign to music. Participants are asked to circle the number that best represents the importance of music to them, specific to each statement. This section consists of 10 such statements including: the role of music in one's life, playing a musical instrument/singing, and

listening to music to block things that are troubling or bothering. Section two is scored on a five-point, Likert-type scale with options of: 1 (not at all important), 2 (not very important), 3 (somewhat important), 4 (very important), and 5 (extremely important).

Section three relates to use of music in sport, specifically during the hours prior to competition. This part is broken into three parts. Part A includes two statements referring to listening to as part of one's preparation and listening to music while "hanging out" and/or stretching and warming up. Both items are scored on a three-point, Likert-type scale with options of: never, sometimes, and always. Participants are instructed to circle the word that best represents the percentage of time that fits them for each statement. Part B deals with five possible purposes for listening to music prior to competition including: aiding in relaxation, getting "psyched up", and helping with visualization and imagery. Each item is scored on a six-point, Likert scale with choices of: 0% (Never), 20% (Seldom), 40% (Sometimes), 60% (Often), 80% (Most of the time), and 100% (Always). Part C asks participants to name the specific artists and/or tracks they listen to prior to competition, listing them under each of four categories: music to relax, music to get "psyched up", music to image and visualize, and music to take one's mind off performing.

Section four closely resembles section three, but deals specifically with use of music one to three days prior to competition. It is again broken down into three parts. Part A consists of two statements, one dealing with use of specific music played at specific times prior to competition and the other dealing with perceived effectiveness of listening to music in preparation for competition. It is again scored using the three point, Likert scale. Parts B and C are identical to those in the previous section.

The last section deals with the meaning and value participants assign to using music in sport. It includes 12 statements rated on the same, five-point scale used in section two. Participants are asked to circle the number that best represents the importance of music to them, specific to each statement. Sample items include rating the importance of: overall use of music in helping to prepare for performing at my best at upcoming competitions, having music playing in the locker room area before and after competition, and listening to specific music on head phones so I can get ready in my own way for upcoming competitions.

The items included in the questionnaire were developed by a panel of graduate students and faculty in the area of performance psychology. The questionnaire was then pilot tested on a group of twenty graduate students and faculty members, and further tested using a group of eight student athletes, similar to those who participated in the actual study. Revisions were based on suggestions from those asked to review the instrument.

Procedure

The sample of student athletes was recruited from seven universities at which the investigators already had contacts. These existing contacts served as on-site coordinators for each of the schools. Coordinators recruited student-athletes for participation through their connections with coaches, athletic trainers, and the athletes themselves. Coaches and athletes were given an explanation of the purpose of the research and the procedure, including the amount of time required to complete the questionnaire. Further, they were informed that participation was completely voluntary and confidentiality of athlete's responses was guaranteed.

All athletes who agreed to participate were included in the sample. The primary researcher is unaware of any athletes refusing to participate in this study. Exact response rates were not controlled on all campuses, but at three universities that contributed the most data (77% of total respondents), less than 5% failed to complete the questionnaire as requested. In all likelihood, response rates were lower at the other four universities, where athletes were asked to complete and return the questionnaire on their own.

Questionnaires were placed in self-addressed, self-stamped envelopes and distributed to participants by the on-site coordinators. Participants completed the questionnaires at their convenience and returned them through campus mail or the US Postal Service. No further contact was initiated with either coaches or athletes.

Results

The primary purpose of this investigation was to assess the use of music by student-athletes in preparation for competition. Overall, 88.7% of participants reported purposely using music as part of their sport participation either sometimes (42%) or always (47%) during the hours just prior to competition ($M = 2.36$, $SD = .68$). Further, 94.1% of participants reported that they either sometimes (34.3%) or always (59.8%) enjoy listening to music when 'hanging out', stretching, and warming up prior to competition ($M = 2.54$, $SD = .61$). During the one to three days before competition, reports of purposeful use of music were considerably lower. Only 47.4% of participants reported incorporating music into their preparation either sometimes or always ($M = 1.57$, $SD = .66$). However, 52.1% of participants reported that while they hadn't thought about it before, listening to music during the days before competition does help them to be better prepared for competition at least sometimes ($M = 1.61$, $SD = .64$). The present

study did not reveal significant differences in overall music use with respect to gender, year of athletic eligibility, level of competition, or age in either the hours or the days prior to competition.

A secondary purpose of this study was to investigate specific purposes of listening to music during the hours and days before competition. Four potential purposes were considered: relaxation, getting ‘psyched up’, helping with visualization and imagery, and taking one’s mind off the upcoming competition. Overall, the highest number of participants reported using music either most of the time or always for getting ‘psyched up’, followed by visualization and imagery, relaxation, and taking one’s mind off the upcoming competition. Tables 1 and 2 show the percentages of participants who reported using music for each of the four purposes in the hours and days before competition, respectively. Only those student athletes who reported using music during these time periods are included in Tables 1 and 2.

Although overall music use did not differ between genders, there were significant gender differences with respect to the more specific uses for music (see Table 3 for *M*, *SD*). Females reported use of music for relaxation significantly more than males, $t(166) = 2.84, p < .05$. Females also reported significantly greater use of music for getting ‘psyched up’, $t(166) = 2.34, p < .05$, as well as for taking one’s mind off performing $t(166) = 2.29, p < .05$. Table 3 includes the means and standard deviations for participants’ use of music overall and broken down by gender.

In the free response components of sections three and four student athletes named the specific artists and/or tracks they listen to prior to competition, listing them under each of four categories: music to relax, music to get “psyched up”, music to image and

visualize, and music to take one's mind off performing (for a complete listing of responses see Appendixes B, C, D, and E). The number of responses per category was fairly consistent with participants' reports of specific music usage. The greatest number of artists/tracks was listed under the heading "to get psyched up", with 299 responses. This was followed by "to relax" with 169 responses, "to image and visualize" with 120 responses, and "to take mind off performing" with 88 responses. However, student athlete music preferences varied considerably within each category. Artists and tracks, as noted in the appendixes, showed little consistency for each of the music-use categories (124/299 for "to get psyched up"; 96/169 for "to relax"; 80/120 for "to image and visualize"; 61/88 for "to take mind off performing").

The final purpose of this investigation was to examine a possible correlation between the meaning and value student athletes place on music in their lives in general and their use of music within the context of sport. A reliability analysis was conducted on the ten questions in the section two of the questionnaire: Music in General, Meaning and Value, $\alpha = .84$. Participant responses for these ten questions were then added to create a total score for this section. Total scores for Music in General, Meaning and Value correlated significantly with participants' reports of purposely using music as part of their sport participation in the hours prior to competition, $r(168) = .42, p < .01$. Total scores also correlated significantly with participants' reports of enjoying listening to music when 'hanging out', stretching, and warming up prior to competition, $r(168) = .28, p < 0.01$. Further total scores were significantly correlated with reports of purposeful use of music during the one to three days before competition, $r(167) = .47, p < 0.01$.

Discussion

The primary purpose of the present study was to assess student athletes' use of music in sport. More specifically, this study was developed to explore overall music use, differences in use with respect to gender, year of athletic eligibility, level of competition, and/or age, and the specific purposes for which athletes are using music. This study was also designed to investigate which specific music artists and/or tracks athletes employ in their pre-competition routines.

From a descriptive standpoint, findings show that student athletes are, overwhelmingly, using music in preparation for sport. Nearly 90% of the student athletes sampled reported using music at least sometimes in the hours prior to competition, with 47% stating that they always use music during this time period. Further, over 94% of athletes reported that they enjoy listening to music when 'hanging out', stretching, and/or warming up prior to competition. Fewer athletes, just over 47%, reported purposefully including music in their preparation during the one to three days before competition. However, over 52% stated that while they hadn't thought about it before, listening to music during this time period does help them to be better prepared for competition at least some of the time. There were no significant differences in general music usage with respect to gender, year of athletic eligibility, level of competition, or age in either the hours or the days prior to competition.

These findings substantiate previous anecdotal and empirical evidence. In particular, the data lend support to the work of Butryn (2002) and Theise and Huddleston (1999). Butryn's qualitative interviews emphasized the prevalence of music usage by student athletes stating that, "athletes are socialized into sporting culture where music is

omnipresent, and where walkmen are standard equipment” (presentation quote). Further, in their study on use of psychological skills by collegiate swimmers, Theise and Huddleston found that participants frequently reported use of music, both for ‘psych up’ and for relaxation.

The present study considered four potential purposes for listening to music: relaxation, getting ‘psyched up’, helping with visualization and imagery, and taking one’s mind off the upcoming competition. Overall, getting ‘psyched up’ appears to be the most prevalent use of music among student athletes, followed by visualization and imagery, relaxation, and taking one’s mind of the upcoming competition. This was further confirmed by the free response component of the questionnaire, in which participants listed a considerably larger number of musical artists and tracks under the heading “to get psyched up” as compared to the other purposes. These results further support the work of Butryn (2002) and Theise and Huddleston (1999), who both found music for ‘psych up’ to be a significant component of athletes’ pre performance routines.

Though gender differences did not appear in overall music use, there were significant differences with respect to the specific purposes for listening to music. Female athletes reported use of music for relaxation, for getting ‘psyched up’, and for taking one’s mind off the upcoming competition, more often than male athletes. This finding is interesting, but difficult to speculate about due to the lack of research in this area. In general, affect and mood research has shown to support gender differences in how emotions affect thinking (Thompson & Andrews, 2000), but to date, little research is available to support emotional response gender differences to the use of music in sport.

Participants reported using a wide variety of musical types, artists, and selections in their pre competition routines. Though some overlap was evident, music selection appears to be highly individualized. Athletes may choose music based on personal experiences, extra-musical associations, or simply personal taste (Butryn, 2002; Gfeller, 1988; Templin & Vernacchia, 1995; Vernacchia, McGuire, & Cook, 1992). This supports much of the previous research, which emphasizes the importance of athletes being allowed to choose their own music for use prior to competition (Butryn; Dorney, Goh, & Lee, 1992, Gfeller; Templin & Vernacchia; Vernacchia, et al.).

Coaches and sport psychology practitioners are increasingly recommending that athletes incorporate music into their pre-competition routines (Henschen, 1998; Templin & Vernacchia, 1995; Vernacchia, 1998; Vernacchia, McGuire, & Cook, 1992; Weinberg & Gould, 1999; Williams & Harris, 1998). However little research exists regarding factors that should be considered prior to prescribing a music-related intervention. Thus, a further purpose of this study was to investigate the possible correlation between music usage and the meaning and value athletes assign to music in their daily lives. The data show a significant correlation between the meaning and value athletes place on music in their daily lives and their use of music in sport in both the hours and days prior to competition. This finding suggests that practitioners may want to investigate how much participants value music in general, prior to recommending its use as part of an intervention. Though this intuitively makes sense, further research is needed to fully understand this relationship, including whether the meaning and value participants place on music in general influences the effectiveness of using music-related interventions. Moreover, research is also needed to determine what other mediating factors may

influence the success of musical interventions. This additional information would allow coaches and practitioners to be more effective in working with student athletes.

The results of the current study are limited by a number of factors. As data come solely from the self-report questionnaire, it is possible that responses may not accurately reflect participants' actual music usage. Also, the sample of student athletes used for this study was drawn from only six, NCAA, Division I universities, and one NAIA university, and was largely Caucasian. Further, this sample was not random, but rather one of convenience. Response rates were only loosely monitored and it is possible that those choosing not to participate would have responded differently to the questionnaire. Thus the results, and any subsequent conclusions and recommendations may be not applicable to the population of student athletes, in general.

More research is needed in this area to gain a greater understanding of the ways in which student athletes use music to influence sport performance. Issues yet to be addressed include the effectiveness of music related interventions and the mediating factors that may influence their success. Further research is also needed in order to understand the apparent gender differences in specific music usage. Nonetheless, the results of the present study do add to the growing body of research, supporting the inclusion of music in sport preparation.

References

- Boutcher, S. H., & Trenske, M. (1990). The effects of sensory deprivation and music on perceived exertion and affect during exercise. *Journal of Sport and Exercise Psychology, 12*, 167-176.
- Butryn, T. M. (2002, October). *Name that tune A qualitative analysis of college athletes' use of music*. Paper presented at the meeting of the Association for the Advancement of Applied Sport Psychology, Tucson, AZ.
- Copeland, B. L., & Franks, B. D. (1991). Effect of types and intensities of background music on treadmill exercise. *The Journal of Sports Medicine and Physical Fitness, 31*, 100-103.
- Csikzentmihalyi, M. (1991). *Flow: The psychology of optimal experience*. New York: Harper-Collins Perennial.
- Dorney, L., Goh, E. K., & Lee, C. (1992). The impact of music and imagery on physical performance and arousal: Studies of coordination and endurance. *Journal of Sport Behavior, 15*, 21-33.
- Ellis, D. S., & Brighthouse, G. (1952). Effects of music on respiration and heart rate. *American Journal of Psychology, 65*, 39-47.
- Ferguson, A. R., Carbonneau, M. R., & Chambliss, C. (1994). Effects of positive and negative music on performance of a karate drill. *Perceptual and Motor Skills, 78*, 1217-1218.
- Gfeller, K. (1988). Musical components and styles preferred by young adults for aerobic fitness activities. *Journal of Music Therapy, 15*(1), 28-43.
- Henschen, K. P. (1998). Athletic staleness and burnout: Diagnosis, prevention, and

- treatment. In J. M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (pp. 398-408). Mountain View, CA: Mayfield.
- Hohler, V. (1989). Sport and Music. *Sport Science Review*, 12, 41-44.
- Karageorghis, C. I., & Terry, P. C. (1997). The psychophysical effects of music in sport and exercise: A review. *Journal of Sport Behavior*, 20, 54-68.
- Lösel, H. (1972). Psychoregulative effects of music. *ISSF News*, 40 (6), 6-9.
- Lucaccini, L. F., & Kreit, L. H. (1972). Music. In W. P. Morgan (Ed.), *Ergogenic aids and muscular performance* (pp. 235-262). New York: Academic Press.
- Norretranders, T. (1998). *The user illusion: Cutting consciousness down to size*. New York: Viking.
- Pujol, T. J., & Langenfeld, M. E. (1999). Influence of music on wingate anaerobic test performance. *Perceptual and Motor Skills*, 88, 292-296.
- Schwartz, S. E., Fernhall, B., & Plowman, S. A. (1990). Effects of music on exercise performance. *Journal of Cardiopulmonary Rehabilitation*, 10, 312-316.
- Scott, G. J. (2000). Spiritual moments with precious people: A look at music and transformation in a long-term care center. *Dissertation Abstracts International Section A. Humanities & Social Sciences*, 60, 3839.
- Shemagonov, A. V., & Sidorenko, V. N. (2000). Can the Medical Resonance Therapy music affect autonomic innervation of cerebral arteries? *Integrative Physiological and Behavioral Science*, 35(3), 218-223.
- Shreeve, J. (1996). Music of the hemispheres: why can a toddler sing? Why is even the most ordinary human brain a library of melodies? *Discover*, 17 (10), 90-99.

- Sidorenko, V.N. (2000). Effects of the medical Resonance Therapy Music in the complex treatment of epileptic patients. *Integrated Physiological Behavioral Sciences*, 35(3), 212-217.
- Templin, D. P., & Vernacchia, R. A. (1995). The effect of highlight music videotapes upon the game performance of intercollegiate basketball players. *The Sport Psychologist*, 9, 41-50.
- Thiese, K. A., & Huddleston, S. (1999). The use of psychological skills by female collegiate swimmers. *Journal of Sport Behavior*, 22, 602-610.
- Thompson, B. M., & Andrews, S. R. (2000). An historical commentary on the physiological effects of music: Tomatis, Mozart, and neuropsychology. *Integrative Physiological and Behavioral Science*, 35, 174-188.
- Weinberg, R. S., & Gould, D. (1999). *Foundations of sport and exercise psychology* (2nd ed.). Champaign, IL: Human Kinetics.
- Williams, J. M., & Harris, D. V. (1998). Relaxation and energizing techniques for regulation of arousal. In J. M. Williams (Ed.), *Applied sport psychology: Personal growth to peak performance* (pp. 219-236). Mountain View, CA: Mayfield.
- Vernacchia, R. A., McGuire, R., & Cook, D. (1996). *Coaching mental excellence: It does matter whether you win or lose*. Portola Valley, CA: Warde.
- Vernacchia, R. A. (1998). *Compact Disk: Relaxation and Imagery Music for Olympic Track & Field Athletes*. Bellingham, WA: Western Washington University.

Appendix A

Use of Music in Sport Questionnaire

Use of Music In Sport Questionnaire

Throughout history, music has been a part of human life. You may feel music is an important part of your sport-life and/or life in general, or you feel music has little or no value. *There are no right or wrong answers – Our goal is to assess the role of music in the life of today's athlete, not pass judgment on what that role may be.* In this regard, please respond to what is being asked as HONESTLY as you can. Remember, too, your responses will be kept confidential.

Part I: Music in General – Role of Music

Circle the response that BEST fits YOU for each statement:

I'd rather listen to music than watch TV	Never	Sometimes	Always
When traveling in a car, I make sure to have my favorite radio station or CDs playing	Never	Sometimes	Always
I sing to myself and/or hear music playing in my head when I am not listening to music	Never	Sometimes	Always
When I really need to concentrate, hearing music interferes with my ability to think	Never	Sometimes	Always
Each week, I take some time to watch music-videos on TV	Never	Sometimes	Always
When I have a choice, I listen to music on my head phones instead of speakers	Never	Sometimes	Always
It seems I choose music with a beat matching my "internal rhythm"	Never	Sometimes	Always
Music affects me on an emotional level in positive and good ways	Never	Sometimes	Always
I have very specific "tastes" on the types of music I enjoy or like to listen to	Never	Sometimes	Always
When I know I will be walking around some, I make sure to bring my head phones & music	Never	Sometimes	Always

[Go to back of this page](#)

I prefer music to be played loud	Never	Sometimes	Always
When watching a movie, I notice and/or pay attention to the music	Never	Sometimes	Always
When traveling on a plane or bus, I make sure to bring my head phones & music	Never	Sometimes	Always
I re-record or "download" my favorite music	Never	Sometimes	Always

Part II: Music in General – Meaning & Value
--

Circle number that best represents importance of music to YOU specific to each statement:

	Not at all Important	Not Very Important	Somewhat Important	Very Important	Extremely Important
The role of music in my life overall	1	2	3	4	5
Listening to music to help me relax	1	2	3	4	5
Seeing "live" performers and/or bands	1	2	3	4	5
Playing a musical instrument and/or having opportunities to sing	1	2	3	4	5
Listening to music while I think through what is troubling or bothering me	1	2	3	4	5
Dancing to music with friends	1	2	3	4	5
Listening to music affects my emotions in positive and good ways	1	2	3	4	5
Listening to music to help me block out what is troubling or bothering me	1	2	3	4	5
Listening to music I re-record or download	1	2	3	4	5
Listening to music to help me image and/or visualize good things in my life	1	2	3	4	5

Part III: Music in Sport – HOURS BEFORE a Competition (Game, Match)

(A) Circle the response that BEST fits YOU for each statement during the HOURS BEFORE a competition:

Hours Before a Competition

I purposely use music as part of my preparation	Never	Sometimes	Always
I enjoy listening to music where I “hang out” and/or stretch & warm up	Never	Sometimes	Always

(B) If circled “Never” to BOTH above, go to Part IV on next page – for all other responses, continue answering the statements below:

<u>Hours Before a Competition</u>	0% Never	20% Seldom	40% Sometimes	60% Often	80% Most of time	100% Always
Music I listen to helps me relax	1	2	3	4	5	6
Music I listen to helps me get "psyched up"	1	2	3	4	5	6
Music I listen to helps me to visualize and image performing well	1	2	3	4	5	6
Music I listen to helps me take my mind off the upcoming competition	1	2	3	4	5	6
I purposely listen to only to specific artists and/or specific tracks	1	2	3	4	5	6

(C) Please name the specific artists and/or tracks you listen to during the HOURS before a competition

to relax	to get "psyched up"	to image & visualize	to take mind off performing
----------	---------------------	----------------------	-----------------------------

--	--	--	--

Go to back of this page

PART IV: Music in Sport – 1-3 DAYS BEFORE a Competition (Game, Match)

(A) Circle the response that BEST fits YOU for each statement during the 1-3 DAYS BEFORE a competition:

1-3 Days Before a Competition

I purposely listen to music at specific times and in specific ways to help me prepare for an upcoming competition Never Sometimes Always

I haven't really thought about it before, but listening to music during this time period does help me be better prepared for competition Never Sometimes Always

(B) If circled "Never" to BOTH above, go to Part V on next page – for all other responses, continue answering the statements below:

1-3 Days Before a Competition 0% Never 20% Seldom 40% Sometimes 60% Often 80% Most of time 100% Always

Music I listen to helps me relax	1	2	3	4	5	6
Music I listen to helps me get "psyched up"	1	2	3	4	5	6
Music I listen to helps me to visualize and image performing well	1	2	3	4	5	6
Music I listen to helps me take my mind off the upcoming competition	1	2	3	4	5	6
I purposely listen to only specific artists and/or specific tracks	1	2	3	4	5	6

(C) Even if listed on previous page, please name the specific artists and/or tracks you listen to during the 1-3 days before a competition:

to relax	to get "psyched up"	to image & visualize	to take mind off performing

PART V: Music in Sport – Meaning and Value

Circle number that best represents importance of music to YOU specific to each statement:

	Not at all Important	Not Very Important	Somewhat Important	Very Important	Extremely Important
My overall use of music in helping me prepare for performing my best at upcoming competitions	1	2	3	4	5
My use of music during the HOURS BEFORE upcoming competitions	1	2	3	4	5
My use of music during the 1-3 DAYS BEFORE upcoming competitions	1	2	3	4	5
My use of music to help me block out thinking about upcoming competitions	1	2	3	4	5
Having music playing in my locker room area before & after practices	1	2	3	4	5
Having music playing in my locker room area before & after a competition	1	2	3	4	5
Having music playing during warm-ups prior to a competition	1	2	3	4	5
Choosing music to be played in the locker room and/or during warm-ups immediately prior to a competition	1	2	3	4	5
My use of music to help me relax and/or stay calm in preparing to perform my best	1	2	3	4	5
My use of music to help me get energized and/or "psyched up" for performing my best	1	2	3	4	5
My use of music to help me visualize & image performing my best	1	2	3	4	5
Listening to specific music on my head phones so I can get ready in my own way for upcoming competitions	1	2	3	4	5

Go to back of this page

Part VI: Background & Demographic Information

(A) Check all that apply (and fill blanks as needed):

- I grew up in a household where music was present and emphasized
- I grew up in a household where music was present, but not emphasized
- I grew up in a household where music was seldom present, nor emphasized
- *****
- My parent(s) and/or elders often played musical instrument(s) and/or sang
- My parent(s) and/or elders at times played musical instrument(s) and/or sang
- My parent(s) and/or elders seldom if ever played musical instrument(s) and/or sang often
- *****
- For awhile growing up, I played a musical instrument (please name): _____
- I no longer play this musical instrument (state years you played): _____ years
- I still play this musical instrument (how many years): _____ years
- I have been trained in voice and/or singing (state how many years): _____ years
- *****
- Singing and/or dancing were common family/community experiences for me growing up
- Singing and/or dancing were sometimes family/community experiences for me growing up
- Singing and/or dancing seldom were part of family/community experiences for me growing up

(B) Please complete the following demographic information (College Athletes)

Sport: _____ Position(s) or Event(s) _____

NCAA Division:	<input type="checkbox"/> Div. III <input type="checkbox"/> Div. II <input type="checkbox"/> Div. I & I-AA <input type="checkbox"/> Div. I-AAA (NAIA) <input type="checkbox"/> Other: _____	Ethnicity:	<input type="checkbox"/> African American <input type="checkbox"/> Asian: _____ <input type="checkbox"/> Caucasian <input type="checkbox"/> Hispanic <input type="checkbox"/> Native American <input type="checkbox"/> Other: _____
Age:	<input type="checkbox"/> 18-19 <input type="checkbox"/> 20-21 <input type="checkbox"/> 22-24 <input type="checkbox"/> 24-26 <input type="checkbox"/> Over 26	Gender:	<input type="checkbox"/> Female <input type="checkbox"/> Male
		Eligibility:	<input type="checkbox"/> Freshman <input type="checkbox"/> Sophomore <input type="checkbox"/> Junior <input type="checkbox"/> Senior

Thank you for your participation in this study!

Appendix B

Specific Artists and Tracks Used to Get 'Psyched-Up' for Competition

<u>Artist/Track</u>	<u>Frequency</u>	<u>Artist/Track</u>	<u>Frequency</u>
112	1	Celine Dion	1
50 Cent	12	Chappa	1
80s Music	2	Chariots Of Fire	1
AC/DC	19	Chris LeDoux	1
Adema	1	Clispe	1
Aerosmith	2	Common	1
Alabama	1	Confederate Railroad	1
Alternative	1	Country	1
Audioslave	1	Dance	2
Biggie	1	Dave Matthews	3
Blink 182	2	Def Leopard	2
Bombs Over Baghdad	1	Def Squad	1
Bon Jovi	1	Disturbed	5
Bone Thugs	1	DMX	1
Boots Randolph	1	El-P	1
Britney Spears	2	Eminem	20
Brooks And Dunn	1	Etc	1
Busta Rymes	2	Evanescence	1
Cake	1	Eve	2
CCR		Eye Of The Tiger	2
		Fabulous	2

Foo Fighters	1	Boys	
Frank Sinatra	1	Lil Kim	2
Garth Brooks	3	Limp Bizkit	4
Glenn Campbell	1	Linkin Park	7
Glenn Miller	1	Ludacris	2
Godsmack	2	Madonna	1
Green Day	1	Marilyn Manson	3
Guns And Roses	1	Metallica	14
Heavy Metal	3	Michael Bolton	1
Hip Hop	9	Missy Elliot	2
Insane Clown Posse	1	Mos Def	1
Ja Rule	1	Mudvayne	1
Jay Z	4	MXPX	1
Jimmy Eat World	1	Nas	1
Jj Fad	1	Nelly	11
Jock Jams	1	Nickelback	1
Joe Baddens	1	Nine Inch Nails	1
Johnny Cash	1	Oldies	1
Jurassic 5	1	Outkast	2
Justin Timberlake	4	Ozzy	1
Kentucky Headhunters	1	Paddy Noonan	1
Korn	1	Papa Roach	2
Lil John And The Eastside	1	Phish	1

Pod	2	Slipknot	1
Pop	2	Snoop Dogg	6
Power Saw 5000	1	Soundtrack- Chicago	1
Punk	1	Soundtrack- Moulan Rouge	1
Queen	1	Soundtrack- Rocky	1
R & B	2	Sountrack- Rock	1
R Kelly	3	Staind	1
Rage	1	Sublime	1
Rage Against The Machine	4	System Of A Down	3
Ramstein	2	Techno	4
Rap	23	The Chieftans	1
Rob Zombie	2	The Dead	1
Rock	9	The Kinks	1
Roots	1	The Vandals	1
Sage Francis	1	Tupac	2
Sawyer Brown	1	Twisted Sister	1
Sean Paul	3	U2	1
Shakira	1	Xhibit	1
Shania Twain	1	Zombie	1

Appendix C

Specific Artists and Tracks Used to Relax Before Competition

<u>Artist/Track</u>	<u>Frequency</u>	<u>Artist/Track</u>	<u>Frequency</u>
112	1	Dave Matthews	5
Beck	1	David Gray	2
Ben Harper	3	David Rose	1
Beethoven	1	Dido	2
Big Band	1	Diplomats	1
Billy Vaughn	1	Dixie Chicks	1
Bob Marley	4	Dru Hill	1
Brian McKnight	1	Eagles	1
Bruce Hornsby	1	Elton John	1
CCR	1	Enya	6
Celine Dion	2	Eric Clapton	1
Chris LeDoux	2	Faith Hill	1
Christian	1	Fleetwood Mac	3
Classical	4	Frank Sinatra	2
Cold Play	1	Garth Brooks	1
Cold Smoke	1	George Strait	1
Counting Crows	3	Goo Goo Dolls	1
Country	17	Hootie And The Blowfish	1
Creed	1	Incubus	1
		India Arie	1

Instrumental	2	Nora Jones	9
Jack Johnson	3	Of A Revolution	1
Jennifer Lopez	1	Pachelbel Cannon In D	1
Jewel	3	Phish	1
Jim Croche	1	Pink	1
Jimi Hendrix	1	Pop	1
John Mayer	5	R & B	6
Journey	2	R Kelly	2
Kenny G	1	Rascal Flatts	2
Kid Rock	1	Sarah Mclachlan	3
Laryn Hill	1	Sean Paul	1
Lawrence Welk	1	Smashing Pumpkins	1
Les Baxter	1	Soundtrack- Beautiful Mind	1
Love Songs	3	Soundtrack- Dances With	1
Mariah Carey	1	Wolves	
Matchbox 20	1	Sountrack- Robin Hood	1
Michael Jackson	1	Sountrack-Gladiator	1
Missy Elliot	1	Stone Temple Pilots	1
Modest Mouse	1	Sublime	2
Montovani	1	Sugar Free	1
Mozart	2	Tchaikovsky	1
Natalie Merchant	1	The Cores	1
Nature Sounds	1	The Dead	1

The Julian Theory	1	Tori Amos	1
The Samples	1	Train	1
Third Day	1	Tyrese	1
Third Eye Blind	1	U2	1
Tom Petty	1	Willie Nelson	1
Tommy Dorsey	1	Xavier Cuget	1

Appendix D

Specific Artists and Tracks Used to Image and Visualize

<u>Artist/Track</u>	<u>Frequency</u>	<u>Artist/Track</u>	<u>Frequency</u>
112	1	Dance	1
50 Cent	3	Dave Matthews	3
AC/DC	2	David Gray	2
Ben Harper	1	Dido	1
Black Sabbath	1	Diplomats	1
Bob Marley	1	Disturbed	1
Bone Thugs	1	Dixie Chicks	1
Brian Adams	1	DMX	1
Britney Spears	1	Eminem	5
Busta Rymes	1	Eric Clapton	1
Camiron	1	Eye Of The Tiger	2
CCR	2	Garth Brooks	1
Chariots Of Fire	2	Gershwin	1
Chicago	1	Greatful Dead	1
Chris LeDoux	1	Gregorian Chant	1
Christina Aguilera	1	Harmony	1
Classical	2	Hip Hop	1
Counting Crows	1	Instrumental	3
Creed	1	Ja Rule	1
		Jack Johnson	1

Jay Z	2	Ray Anthony	1
John Mayer	1	Red Hot Chili Peppers	1
Linkin Park	1	Rock	2
Madonna	1	Sage Francis	1
Metallica	3	Sarah McLachlan	1
Michael Bolton	1	Shania Twain	1
Missy Elliot	1	Snoop Dogg	3
N Sync	1	Soundtrack- Rocky	1
Nappy Roots	1	Stravinski	1
NAS	2	Techno	2
Nat King Cole	1	Tennessee Ernie Ford	1
National Anthem	1	The Dead	1
Nelly	2	The Eagles	1
Nelson Riddle	1	The Kinks	1
Night Rage	1	Tori Amos	1
Nora Jones	1	Tupac	3
Of A Revolution	1	Vanessa Carleton	1
Patti Page	1	Wallflowers	1
Perry Como	1		
Queen	1		
R & B	3		
Rage Against The Machine	1		
Rap	4		

Appendix E

Specific Artists and Tracks Used to Take One's Mind off Performing

<u>Artist/Track</u>	<u>Frequency</u>	<u>Artist/Track</u>	<u>Frequency</u>
50 Cent	3	Easy Listening	1
80sMusic	2	Eminem	3
AC/DC	1	Fats Domino	1
Beatles	1	Foghat	1
Bill Haley And The Comets	1	Garth Brooks	1
Bob Marley	2	George Strait	2
Britney Spears	1	Guns And Roses	1
Celine Dion	1	Hawaiian Music	1
Color Me Bad	1	Herb Alpert	1
Country	6	Hip Hop	2
Dance	1	Jay Z	1
Dashboard Confessionals	1	Jimmy Dorsey	1
Dave Matthews	2	Justin Timberlake	2
David Gray	1	Linkin Park	2
Destiny's Child	1	Metallica	1
Diplomats	1	Nelly	2
Dispatch	1	Night Rage	1
Dr Dre	2	O Town	1
Dead	1	Of A Revolution	2
		Oldies	2

Pop	1	The Ventures	1
R & B	2	The Vines	1
Rap	4	Third Day	1
Rascal Flatts	1	Tom Petty	1
Red Hot Chili Peppers	1	Trick Pony	1
Rock	2	Tupac	1
Snoop Dogg	1	U2	1
Spike Jones	1	White Stripes	1
Staind	2	Willie Nelson	2
Techno	1		
Tenacious D	1		
The Hives	1		
The Samples	1		

Table 1

Specific Music Uses by Athletes in the Hours Before Competition.

<i>Music uses</i>	<i>Never</i>	<i>Seldom</i>	<i>Sometimes</i>	<i>Often</i>	<i>Most of the time</i>	<i>Always</i>
Relaxation	6.7%	9.3%	18.8%	26.2%	32.2%	6.7%
Psych up	0.7%	1.3%	6.7%	17.4%	38.3%	35.6%
Visualization	3.4%	7.4%	21.5%	29.5%	26.2%	12.1%
Distraction	14.1%	13.4%	28.9%	17.4%	18.8%	7.4%

Note. Table 1 includes only those participants who responded “sometimes” or “always” when asked if they used music in the hours prior to competition ($n = 150$).

Table 2

Specific Music Uses by Athletes One to Three Days Before Competition

<i>Music uses</i>	<i>Never</i>	<i>Seldom</i>	<i>Sometimes</i>	<i>Often</i>	<i>Most of the time</i>	<i>Always</i>
Relaxation	3.4%	4.5%	29.2%	34.8%	20.2%	7.9%
Psych up	0.0%	7.9%	10.1%	32.6%	33.7%	15.7%
Visualization	0.0%	20.2%	22.5%	24.7%	21.3%	11.2%
Distraction	6.7%	27.0%	22.5%	20.2%	20.2%	3.4%

Note. Table 2 includes only those participants who responded “sometimes” or “always” when asked if they used music 1 to 3 days prior to competition ($n = 90$).

Table 3

Gender Differences in Music Use in the Hours Before Competition

Music use	Males (n = 68)		Females (n = 101)		Overall (n = 169)	
For overall preparation	2.31	0.67	2.39	0.68	2.36	0.67
During stretching/warm up	2.44	0.65	2.60	0.57	2.54	0.61
To relax	3.31	1.52	3.95	1.31	3.69	1.43
To get 'psyched up'	4.43	1.38	4.92	1.22	4.72	1.30
To visualize/image	3.60	1.43	3.89	1.41	3.77	1.42
To take mind off competition	2.88	1.52	3.42	1.45	3.20	1.49