

Factors Affecting Response Rates in Survey Research: The Case of Intercollegiate Coaches

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A common challenge when conducting survey research is obtaining an adequate number of completed questionnaires from a chosen sample. The present study examined four factors (timing, salience, oversampling, and population characteristics) deemed to be most likely to influence response rates when utilizing the population of intercollegiate coaches. A stratified, random sample of NCAA coaches from six sports at each division level was selected ($n = 2964$). A total of 1096 (37.0%) questionnaires were returned. Results indicated a significant difference in response rates based on time of the season sent and sport, with football reporting the highest response rates. On average, coaches receive four requests for participation in research studies per year. Finally, coaches felt that research on their profession was only somewhat important.

A common challenge when conducting survey research is obtaining an adequate number of completed questionnaires from a chosen population. The response rate of a study can be defined as the number of participants who complete and return a research questionnaire. An additional consideration when calculating response rates is the determination of what constitutes a completed questionnaire. While there is not consensus on what percentage of questions answered establishes a usable survey in sport studies, it has been suggested that if 80% of the critical items are completed the survey can be deemed usable (see The American Association of Public Research, 2004, for a discussion on completion rates). However, before the issue of completion percentage can be addressed the participant must agree to be part of the study by completing and returning the questionnaire. Achieving a satisfactory response rate has been identified as a critical factor when establishing the external validity of a study (Thomas & Nelson, 2001). Participants unwilling to take part in research projects raise the issue of non-response bias, which can pose a serious threat to the validity of established results (Roth & BeVier, 1998). If persons who complete and return a questionnaire are significantly different from those who do not, there is the possibility that participants are not truly representative of the larger population. This problem is magnified when the population is determined to be more heterogeneous with respect to the characteristics of interest for a particular study (Dolsen & Machlis, 1991). An additional difficulty associated with survey research is lack of consensus on what constitutes an adequate response rate (Baruch, 1999). It is generally agreed upon that in order to have results that are valid, reliable, and representative of a target population, a high response rate is desirable

(Dillman, 2000). However, it is unclear on how high the response rate needs to be. Instead, the focus of research on response rates has tended to examine different factors that are likely to increase or decrease the willingness of individuals to complete and return survey questionnaires (Bickart & Schmittlein, 1999; Greer, Chuchinprakarn, & Seshadri, 2000; Huang, Hubbard, & Mulvey, 2003; King, Pealer, & Bernard, 2001).

One method used by researchers to achieve a high response rate is the application of established methodologies such as Dillman's (2000) Total Design Method (TDM), which incorporates a systematic approach to data collection. While utilization of TDM procedures has been shown to increase response rates with certain studies, these increases are not guaranteed and often are not discernable at all (Huang et al., 2003). This fact is evident by the large disparity in reported response rates in scholarly journals across various disciplines (Baruch, 1999; Kent & Turner, 2002). Additionally, research such as Baruch (1999) has shown a steady decline in reported response rates for studies published in studies journals despite the implementation of procedures intended to increase the total number of respondents. This pattern suggests there are other factors besides research methodology (e.g., TDM) which often influence whether someone is willing to participate in survey research (Greer et al., 2000; Shannon & Bradshaw, 2002).

While attention in other disciplines has been given to the issue of what factors increase the likelihood that a participant will complete and return a survey questionnaire, there remains a lack of information in sport studies. Lack of attention to response rates in the sport studies literature could prove harmful as the number of research projects in the discipline continues to increase. One such area is the

increasing number of research studies which involve intercollegiate athletic personnel. Slack (1996) established that sport studies research has continually sampled populations from intercollegiate athletics, specifically coaches. Previous research suggests continual sampling of a particular population reduces the willingness of individuals to take part in survey research (Baruch, 1999; Bikart & Schmittlein, 1999; Groves, Cialdini, & Couper, 1992). The growing number of studies in sport, combined with the lack of research on what factors increase response rates in the sport studies literature establishes the need to determine what factors are likely to increase or decrease participants willingness to complete and return survey questionnaires (Kent & Turner, 2002). The purpose of the present study was twofold. First, intercollegiate coaches' preferences regarding three factors (i.e., timing of questionnaire appeals, salience of content, and oversampling) that have been shown to influence response rates in survey research were examined. Further, actual response rates to the questionnaire used in this study for two factors (i.e., timing of the study and population characteristics) were assessed.

Background Literature

Research on response rates has examined a wide range of factors such as personalization of correspondence (Clark & Kaminski, 1990), questionnaire length (Jobber, 1989), type of sponsoring organization (Faria & Dickinson, 1996) and even questionnaire color (Greer & Lohtia, 1994). The number of studies, as well as variation in the types of factors examined, identifies the importance of understanding why people choose or do not choose to participate in survey research (Greer et al., 2000). As mentioned previously, in an

attempt to add to the rather limited understanding of participant response characteristics in sport studies, the present study examined four factors identified in the literature as having an effect on survey research response rates. These factors included: a) timing of the research project; b) salience of content; c) oversampling; d) and population characteristics (Baruch, 1999; Heberlein & Baumgartner, 1978; Huang et al., 2003; Kent & Turner, 2002; Sheehan & McMillan, 1999). While not an exhaustive list, the present study represents an initial attempt in sport studies to examine multiple factors which could affect response rates.

TIMING

A factor identified by researchers as having a potential influence on survey research response rates is timing. Study of the influence of timing has tended to focus on the day of the week that a participant receives the research questionnaire. In general, results have indicated that there is no relationship between the day of the week the questionnaire is received and response rates (Blythe & Essex, 1981; Diamantopoulos & Schlegelmilch, 1996). However, Greer et al. (2000) suggested that the likelihood of a person responding to a survey questionnaire is based on the relative workload that individual is experiencing at the time of reception rather than the day of the week. If individuals are busy fulfilling their responsibilities at work they may have less time to complete and return a survey questionnaire. Therefore, it may be more beneficial to examine the factor of timing based on participants work schedule and work load as opposed to the day of the week (Huang et al., 2003). In the present study involving coaches, timing was defined as preseason, in-season, or postseason. Coaches were asked to indicate the time of year they would prefer to receive

survey questionnaires. This definition of timing would appear to be more appropriate for the population of intercollegiate coaches due to the fact that workload is likely to vary more by time of year as opposed to day of the week.

SALIENCE OF CONTENT

The content of a research study is likely to be considered salient when it explores a topic that is important or of interest to a particular population (Sheehan & McMillan, 1999). Participant interest in the content of a study has been shown to be a significant, and at times, the most important determinant of response rates (Baruch, 1999; Greer et al., 2000; Heberlein & Baumgartner, 1978). Individuals chosen to be part of a research study are more likely to participate when they feel the study is relevant and results might provide some type of benefit or improvement to their current situation. Conversely, research studies which examine content not easily understood by participants run the risk of appearing to have less benefit and therefore response rates may suffer (Baruch, 1999). Participant indifference seems likely if the divide between the scholarly content of research and the practical application of results is great. To date, it has not been determined how important scholarly research is to intercollegiate coaches. An understanding of the relative importance of research for the population of intercollegiate coaches would be beneficial when addressing the issue of response rates.

OVERSAMPLING

Excessive sampling of a particular population has been identified as one factor that has led to declining response rates in survey research (Baruch, 1999). Groves et al. (1992)

suggested that repeated sampling of a population could lead to declining response rates for two reasons. First, as the number of contacts by researchers increase, individuals' attitudes about survey research can deteriorate and become a barrier to participation. Second, an increase in requests to participate in research studies might make the experience seem less unique, thus diminishing the perceived value of responding to a survey questionnaire. As mentioned previously, intercollegiate athletics is a commonly studied population in sport studies (Slack, 1996). Specifically, coaches are a group that continues to be the focus of many research projects in sport (Gilbert, 2002). This trend is likely to result in a situation similar to that of management personnel in business organizations. Baruch (1999) identified that persons occupying management positions are a group that is consistently used as participants for survey research in the business literature. This excessive sampling of managers was identified as one barrier against participation in survey research. One method to determine if a population is being oversampled is to identify the number of requests for participation in survey research a group receives per year (Bickart & Schmittlein, 1999). Examination of how many times each year intercollegiate coaches are asked to complete a survey questionnaire would enable researchers to determine if this population is being oversampled.

POPULATION CHARACTERISTICS

Population characteristics is another factor to consider when determining how to increase response rates among a particular sample (Heberlein & Baumgartner, 1978). Research has indicated that certain subgroups of a population (e.g., middle and top management) are less likely to

respond to questionnaires than other subgroups within the same population (Baruch, 1999; Denison & Mishra, 1995). Achieving similar response rates from various subgroups in a population is important because it provides evidence toward the representativeness of the sample in relation to the population (Cook et al., 2000; Jiang & Klien, 1999-2000).

Research, including the present study, which sample the population of intercollegiate coaches as a whole rely on equal participation from different groups in order to establish representativeness of important subgroups (e.g., sports, gender of team, NCAA divisional membership). For example, the NCAA sponsors championships in 39 sports, across three divisions (NCAA, n.d.a). If coaches from some sports respond at a different rate than coaches in other sports, the results for the entire population may be skewed. That is, the likelihood that the non-responders in the lower responding sports will have an impact on the validity of the population estimate is greater than in higher responding sports (see Mangione, 1998). Thus, population characteristics are not only a factor that can impact actual response rates, but also the representative nature of one's sample.

RESEARCH QUESTIONS

To assist in the development of knowledge on how selected factors affect response rates in studies involving intercollegiate coaches the following research questions were developed:

1. Do the response rates for intercollegiate coaches vary based on sport, gender of team, or NCAA division?
1. Is there a 'best time' to send questionnaires to intercollegiate coaches?

3. How important is scholarly research on the profession of coaching to intercollegiate coaches?
4. How many times per year are intercollegiate coaches asked to complete survey questionnaires?

Method

SAMPLE

The subjects in this study were NCAA Division I, II, and III head coaches for six selected sports. Two sports (one male sport and one female sport) were chosen from each of the NCAA-defined seasons (i.e., fall, winter, and spring) based on popularity and the number of schools sponsoring the sport. Using a 95% confidence level and a sampling error of $\pm 5\%$, a stratified, random sample (by division and by sport) was calculated with the assistance of the "Sample Size Calculator" (Sissons, 1999). The total sample for this study was 2964 head coaches (Table 1). Specific schools were then randomly chosen from the NCAA's website on sport sponsorship (NCAA, n.d.b), with approximately one-third coming from each division.

Table 1
Sample by Sport, Division and Season Questionnaire Was Sent

	Pre-Season			During Season			Post Season			Overall Total	
	Div. I	Div. II	Div. III	Div. I	Div. II	Div. III	Div. I	Div. II	Div. III		Total
Football	49	38	47	49	36	47	49	36	47	132	396
Volleyball	57	51	66	57	51	66	57	51	66	174	522
Men's Basketball	58	55	64	58	55	64	58	55	64	177	531
Women's Basketball	58	55	66	58	55	66	58	55	66	179	537
Baseball	54	48	60	54	48	60	54	48	60	162	486
Softball	50	51	63	50-	51	63	50	51	63	164	492
TOTALS	326	296	366	326	296	366	326	296	366	988	2964

Instrument

To address the previously mentioned research questions, three items were developed: a) What time of year is best for you to fill out and return research questionnaires? b) How many times have you been asked to complete a research questionnaire in the last 12 months? and c) How important is research conducted on NCAA coaches to you personally (from 1—Not Important to 7—Very Important)? Also included were items addressing demographic information (i.e., gender, age, sport, division, and years of coaching experience). All items were printed on one side of a 3" x 5" postcard; the other side included a postage-paid return address and a code number to reflect the respondents' sport, divisional membership, and time of season the code was sent. Items developed for this research project were sent to a panel of experts in order to establish face and content validity. The panel reviewed all items and made suggestions for minor revisions which were completed prior to mailing the survey questionnaire to the chosen sample.

PROCEDURE

Since one of the research questions involved timing of mailings, each of the participants in the sample was divided into one of three groups: a) pre-season; b) season; and c) post-season. These groups were randomly selected and equal in size for each sport and for each division. Questionnaires for coaches in the pre-season were mailed two weeks prior to the first official practice, while those in the post-season group had their questionnaires two weeks after the championship game for their particular sport. Those in the season group were mailed questionnaires at

the approximate mid-point between the first official practice and the championship game in their sport.

A cover letter explaining the study, along with the postage-paid postcard questionnaire was sent to each coach at the appropriate time. Because of the nature of this project, no follow-up mailings were sent.

DATA ANALYSIS

To determine differences in response rates based on sport, gender of team, and NCAA division, chi-square analyses were used. This type of analysis was also used to determine differences in the time of year coaches stated they preferred to receive questionnaires and the actual response rates for each time of year (i.e., pre-season, during season, or post-season). Differences in salience of content and oversampling were computed using ANOVAs, with follow-up *t*-tests when results were significant.

Results

SAMPLE

From the initial mailing of 2964 questionnaires, useable responses were received from 1096 head coaches (37.8%). By division, response rates ranged from 34.8% for Division II to 38.0% for Division I. There was no significant difference in response rates based on divisional membership, $\chi^2(2, n = 2964) = 2.598, p = .273$, nor by gender of sport, $\chi^2(1, n = 2964) = 4.384, p = .036$. However, there was a significant difference in response rates based on sport, $\chi^2(5, n = 2964) = 15.611, p = .008$, with rates ranging from 29.8% for men's basketball to 39.6% for football (Table 2).

Table 2
Actual Response Rates and Coaches' Preference
by Division and Sport

<i>By Division</i>	Overall Response Rates	Pre-Season	During Season	Post Season
Division I	38.0%	43.9% (29.1%)	35.6% (2.9%)	34.7% (68.0%)
Division II	34.8%	39.9% (37.4%)	32.0% (3.04%)	29.8% (59.6%)
Division III	37.8%	40.4% (33.9%)	36.3% (2.9%)	36.6% (63.3%)
<i>By Sport</i>				
Football	39.6%	39.4% (13.7%)	46.1% (5.9%)	33.3% (80.4%)
Women's Volleyball	39.1%	46.6% (8.8%)	27.6% (3.5%)	43.1% (87.8%)
Men's Basketball	29.8%	28.8% (34.6%)	28.8% (2.9%)	31.6% (62.5%)
Women's Basketball	39.5%	46.9% (29.8%)	38.0% (0%)	33.5% (70.1%)
Baseball	37.0%	46.9% (54.1%)	34.6% (4.1%)	29.6% (41.8%)
Softball	37.6%	39.6% (60.8%)	39.0% (2.7%)	34.1% (36.5%)
TOTALS	37.8%	41.4% (33.4%)	35.2% (2.9%)	34.3% (63.8%)

Top numbers are the actual response rates; (numbers in parentheses and italicized are the coaches' reported preferences for each time of the year they would rather receive questionnaires)

TIMING

To determine if there was a “best” time to survey inter-collegiate coaches, two methods were employed. First, coaches were asked what time of year they preferred receiving questionnaires (i.e., pre-season, during season, or post-season). Results showed that coaches prefer questionnaires to be sent during the post-season ($n = 522$; 63.8%), followed by pre-season ($n = 272$; 33.3%) and during the season ($n = 24$; 2.9%). This order was consistent by division (Table 2). Sports at the end of the academic year (i.e., baseball and softball) preferred receiving questionnaires during the pre-season rather than the post-season (i.e., during the summer).

The second method used to determine the “best” time to send questionnaires was the response rate from questionnaires sent at three different times of the year (as explained in the methods section). Although coaches stated they preferred to receive questionnaires after their competitive seasons, using chi-square analyses actual response rates were significantly higher for questionnaires sent out during the pre-season (41.4%; $\chi^2(2, n = 2964) = 12.60, p = .002$). Furthermore, while only 2.9% of the coaches surveyed said they preferred to receive questionnaires during the season, response rates for during the season and post-season were similar (Table 2). There were no significant differences in response rates within divisions based on when the questionnaires were sent.

Response rates by sport and the time questionnaires were sent out are reported in Table 2. Results showed there was no significant difference for football, $\chi^2(2, n = 396) = 4.580, p = .101$, men’s basketball, $\chi^2(2, n = 531) = .451, p = .798$, women’s basketball, $\chi^2(2, n = 537) = 6.983, p = .030$, or softball, $\chi^2(2, n = 492) = 1.266, p = .531$, based on when

questionnaires were sent; there was, however, a significant difference for women's volleyball, $\chi^2(2, n = 522) = 14.918, p = .001$, and baseball, $\chi^2(2, n = 486) = 11.01, p = .004$.

SALIENGE OF CONTENT

Intercollegiate coaches indicated that scholarly research was moderately important, averaging a 4.70 ($SD = 1.56$) on a 7-point Likert scale (Table 3). There was no significant difference in importance of research based on division, $F(2, 1092) = 2.295, p = .101$. There was, however, a significant

Table 3
Coaches' Opinions on Research and Number
of Times Surveyed

<i>By Division</i>	Importance of Research ^a	# of Times Surveyed ^b
Division I	4.75 (1.63)	4.11 (2.31)
Division II	4.81 (1.54)	3.72 (2.26)
Division III	4.57 (1.51)	3.94 (2.32)
<i>By Sport</i>		
Football	4.84 (1.49)	3.88 (2.25)
Women's Volleyball	4.83 (1.50)	3.97 (2.20)
Men's Basketball	4.43 (1.65)	4.38 (2.47)
Women's Basketball	4.55 (1.54)	4.29 (2.37)
Baseball	4.57 (1.66)	3.57 (2.31)
Softball	4.95 (1.50)	3.55 (2.25)
TOTALS	4.70 (1.56)	3.94 (2.32)

^a Mean scores (from a 7-point Likert scale; standard deviations in parentheses).

^b Estimated number of questionnaires that coaches have received in the last 12 months (standard deviations in parentheses).

difference based on sport, $F(5, 1092) = 3.11, p = .009$. Follow-up analyses showed that softball coaches rated scholarly research significantly more important than men's basketball coaches, $t(2, 341) = 3.07, p = .002, \chi^2 = .027$.

OVERSAMPLING

Coaches were asked approximately how many times in the previous 12 months they were asked to complete a questionnaire. On average, coaches received almost 4 questionnaires ($M = 3.94, SD = 2.32$; Table 3) within the last year, with 34.7% receiving 5 or more. Coaches at each division reported similar results, with no significant difference between divisions, $F(2, 1093) = 2.430, p = .088$. By sport, there was a significant difference in the number of questionnaires received, $F(5, 1093) = 4.182, p = .001$. Follow-up analyses found that men's and women's basketball coaches receive significantly more questionnaires than baseball coaches ($t(2, 336) = 3.125, p = .002, \chi^2 = .027$, and $t(2, 391) = 3.056, p = .002, \chi^2 = .023$, respectively) and softball coaches ($t(2, 341) = 3.273, p = .001, \chi^2 = .030$, and $t(2, 396) = 3.208, p = .001, \chi^2 = .025$, respectively).

Discussion

The study of the factors that affect response rates in survey research in the organizational sciences has been fairly extensive and ongoing for a number of decades (e.g., see meta-analyses by Cook et al., 2000; Heberlein & Baumgartner, 1978; Roth & BeVier, 1998). The main problem or concern associated with mailed survey designs, which has driven the vast interest by scholars on the factors that shape response, is the high risk of a nonresponse error in these

types of studies (Mangione, 1998). Indeed, these concerns are warranted because nonresponse error can lead to major apprehensions about the external validity of a research project (Roth & BeVier, 1998). Furthermore, most scholars appear to agree with Mangione's contention that a solution to nonresponse errors in mailed questionnaire research is to "do everything in your power to conduct a study that has a very high response rate" (p. 404).

The present study assessed the factors that shape response rates in a coaching sample from two perspectives. First, coaches' preferences toward many of the commonly supported factors found to improve response rates for mailed questionnaires (i.e., timing, salience, and oversampling) were assessed, and if these factors differed by population characteristics. Further, the impact of timing and population characteristics on actual response rates for the short questionnaire used in the study were examined. The findings proved to provide interesting results, along with potentially serious challenges to the external validity of the numerous published studies utilizing coaches in the sport studies literature.

The results related to the issue of timing of a mailed questionnaire have provided some valuable findings for survey researchers. Clearly, the coaches in this sample preferred to receive their questionnaire requests out of the playing season, mainly during their respective post-seasons (for football, volleyball, and basketball), or during the pre-season for softball and baseball. This finding is potentially troubling to researchers if response rates (and subsequent nonresponse errors) are actually impacted by this negative attitude toward in-season attempts of survey research, such that responses are indeed lower during the playing season.

To evaluate this possibility, actual response rates across three specific “times” were assessed.

These results indicated that, although coaches preferred to receive questionnaires during the post-season, the highest response rates across the three divisions were in the pre-season. Furthermore, despite the fact that only 4.9% of the coaches preferred to receive questionnaires during the season, the response rates were similar during the in-season and post-season. The results by sport, however, did indicate some support for a relationship between actual responses and preferred responses. For example, the baseball coaches responded highest to the questionnaire during their pre-season mailing, and also indicated that they preferred to receive mailings during this timeframe. A similar pattern was apparent for volleyball coaches, as they were least likely to respond during their respective in-seasons (i.e., 28% compared to 49.4% during the pre-season and 45.2% in the post-season). While these findings are clearly limited in that the present study only asked the participants to fill out a very short questionnaire (i.e., the response rates may have differed for a long or complex questionnaire), they do provide some evidence suggesting serious threats to the external validity of studies as is explained below.

Consider, for example, coaching studies assessing work attitudes such as job satisfaction. Research has indicated that job satisfaction may be different at various times during a year, depending on a subject’s psychological well-being during data collection (Judge & Locke, 1993). Thus, levels of job satisfaction for coaches may fluctuate with a successful or unsuccessful season, around important games, or near intense practice times. Coaching studies that assess work affect and attitudes at one point in time, across a variety of teams in their different respective seasons, may suffer from

time sampling and mortality threats to external validity, in that the target population is less accessible or willing to respond during various segments of a calendar year (Cook & Campbell, 1979; Huang et al., 2003). Furthermore, the differential return rates by the various teams, overall and at specific times during the year, also suggest an interaction of selection and treatment threat to external validity, in that nonresponse error is likely higher in samples that suffer from lower response rates (Cook & Campbell, 1979). For example, given the low overall response rate for men's basketball (i.e., 28.7%), are studies using only men's basketball less representative of the population, and thus less generalizable compared to samples using football coaches, which may achieve a much higher response rate? This question, along with the concerns outlined above related to external validity, provides evidence indicating potential threats to the generalizability of much of the published literature in sport studies, as no studies using coaching samples that controlled for the timing of their questionnaire (at least they were not reported in the studies) were found. Future scholars in sport studies (using coaches or other similar samples) should be cognizant of this finding related to differential returns for the timing of a questionnaire, and attempt to protect for the various threats to validity in their work.

In citing recent findings in the survey literature, Sheehan and McMillan (1999) claimed, "issue salience had a stronger impact on response rate than did any other issue or research-design decision including advance notice, follow-up contacts, or monetary incentives" (p. 47). To the extent that this factor is also of great importance in coaching samples, the findings of the current study are also alarming. The coaching sample indicated only moderate agreement

(4.7 on a 7-point scale) with the question assessing coaching research salience. More importantly, these results are based solely on those who returned the questionnaire, only 37.8% of those in the sample. Based on the findings mentioned by Sheehan and McMillan (1999), the mean score for issue salience could have been much lower if responses were obtained from every coach in the sample. One could argue that this factor alone can be contributing to the lower than recommended response rates often seen in the coaching literature (i.e., below 80% as suggested by Kerlinger & Lee, 2000). Given the importance of topic salience, attempts should be made to increase the significance of the issues being investigated regarding coaches. Research could be important to coaches; however, researchers might not be investigating topics that interest coaches or maybe the coaches do not see the applicability of study results to their profession (i.e., the results will not help improve their coaching).

Dillman (2000) has provided guidelines for creating positive salience throughout the questionnaire process. For example, Dillman advocates increasing salience by providing professional looking questionnaires that create a positive impression on subjects. Groves et al. (1992) asserted that people are more likely to comply with requests to reply to questionnaires if it comes from a constituted authority (such as a university sponsorship or letter of support). These factors are likely increasing responses because they portray a positive salience for the research. Mangione (1998) has advocated including the results or a final report of the research project for each participant, or even analyzing and reporting individual respondent results back to participants to increase the salience of research projects utilizing questionnaires. Similar techniques could prove fruitful

toward increasing the salience of mailed questionnaires, and subsequent response rates, in coaching samples. Above all, researchers should explore topics that are of interest to coaches and ones where coaches can apply the knowledge gained from the study results.

Oversampling has led to a decrease in response rates in survey research because increased sampling can create negative attitudes toward survey research and lessens the novelty of receiving a questionnaire, thus diminishing the value of such research (Groves et al., 1992). Coaching science research is becoming more popular in the sport literature. For example, a recent annotated bibliography by Gilbert (2002) identified a total of 309 published articles using coaching samples during the 1990's. This figure is up from the 1970's when only 48 articles were published using coaching samples, and the 1980's (195 articles). While it is unknown what the baseline or norm for questionnaires on coaches is historically, the mean for the present sample was almost 4 questionnaires per year. This finding, coupled with the results indicating that 35% of the sample received 5 or more requests for participation each year, does indicate a possible oversampling effect. Given the arguments advanced by Grove et al. (1992), this oversampling, and the subsequent response fatigue effect, can have continued implications to actual response rates achieved in future work. Furthermore, it has been shown that individuals who do participate in surveys frequently are likely to be the most enthusiastic or involved subjects, which can lead to response biases on questions, such as response acquiescence (Bickart & Schmittlein, 1999). This information, and the reports suggesting that most responders to questionnaires are typically habitual responders (Cooper & Schindler, 2004), may suggest that many of the coaches responding to

mailed questionnaires are “heavy responders” and that sport studies researchers may be burning out this particular sample (see Bickart & Schmittlein, 1999).

Limitations and Future Research

As with any mailed questionnaire study, the present study is limited in several ways. Given the lower than desired response rate of the existing study, the extent to which the findings related to the attitudinal measures of survey research is limited. The nonresponse error was further maximized by the nature of this study, in that many of the usual techniques used to increase response were not performed, such as a prenotification or postnotification. The study is also limited by the sample selected. Only head coaches in major team sports were used in this study, and thus limiting generalizations to similar samples of coaches.

There are a number of avenues of future research related to the findings of this study. One line of research that seems merited based on our findings is to develop thorough investigations into the possible over-sampling effect for coach responders. Given the vast literature currently published on coaches (Gilbert, 2002), a meta-analysis should prove fruitful in identifying actual response rates over time, and to what extent (if any) response rates have declined in coaching samples. Further, future research should continue to provide greater empirical support for other factors that affect response rates yet to be studied in sport studies, as called for by Kent and Turner (2002). For example, these studies could assess the efficacy of the use of post-notifications, colored paper, or the number of rounds of data collection. Additionally, studies need to be conducted which examine differences in response rates when

researchers use web based questionnaires compared with mail surveys. Research in other disciplines has shown that response speed increases with web based surveys but that response rates often decrease or remain the same compared with mailed pencil and paper surveys (Ilieva, Baron & Healey, 2002; Paolo et al., 2000; Shannon & Bradshaw, 2002; Tse, 1998). This line of research should be replicated with coaches to discover the affect of web based surveys on response rates and response speed. Finally, other groups of coaches should be examined. While the focus of this study was intercollegiate head coaches, intercollegiate assistant coaches and high school coaches are two potential groups that could be investigated in the future in order to improve their response rates.

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