

tive methods, to reflections of practitioners and participants, to common-sense and simple logic of theoreticians and practitioners – to the link between theory and practice.

One important step towards the integration of theory, research, and practice was the Ninth World Congress of the ISSP held at the Wingate Institute, Israel, July 5-9, 1997. The ISSP-MC termed the Congress: «Innovations in Sport Psychology - Linking Theory and Practice». A brief overview of the program demonstrates that the majority of keynote speakers stressed the links and interfaces between coach/teacher, researcher, and consultants (R.E. Smith, R.S. Vealey), perception-action, cognition-attention, and skill acquisition (R.J. Bootsma, V. Nougier, J. Summers), stress, anxiety, crisis and performance (M. Bar-Eli, L. Hardy), goal-setting, goal-orientation and other social perspectives and behaviors (R.J. Vallerand), as well as moral and ethical issues in sport (B.J.L. Bredemeier) and sport and the disabled athlete (Y. Hutzler). They all raised some theoretical issues, but the emphasis was the link to reality and applicability.

It is almost two years since we took over the editorship of the IJSP. The issues we raise here are of vital importance to the direction the journal has to take and the ISSP has to develop. We should encourage and enhance the publication of works that link theory and practice, works which allow more freedom to innovative and creative researchers, works that use sophisticated statistical tools in a sensible and logical manner, works which close the gap between the concerns of the theoreticians and the practitioners. ISSP, Sport and Exercise Psychology, and the IJSP can be leaders and an example to the other behavioral and social domains as to the direction and horizons of our discipline as we approach the third millennium.

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Psychological Antecedents of the Frequency and Intensity of Flow in Golfers

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Extending previous qualitative research, the purpose of this study was to investigate the relationship of pre-performance readiness factors, (pre-round confidence, positive thinking, motivation, level of relaxation, mental focus, and physical readiness) to post-game reports of the intensity and frequency of flow. One hundred and sixty three recreational golfers were administered a questionnaire which assessed pre-round readiness variables immediately before a round of golf, and flow frequency and intensity immediately after the round. Canonical correlation analyses indicated that pre-round readiness variables as well as golfer's skill level were significantly related to the experience of flow. Results point to the importance of pre-performance psychological state on the quality of the sport experience and underline the potential value of athletes' mastering self-regulation techniques.

KEY WORDS: Flow, Golf, Mental preparation, Measurement, Optimal experience.

The psychology of optimal experience or «flow» (Csikszentmihalyi, 1975a, b, 1990; Csikszentmihalyi & Csikszentmihalyi, 1988) is an area of research that focuses on the positive aspects of human experience. Past work by Csikszentmihalyi and colleagues has indicated that the flow state is characterized by focused attention, clear performance goals and feedback, mind and body unison, effortless concentration, complete control, a loss of self-consciousness, the distortion of time, and intrinsic enjoyment. Further, based on his extensive work on this topic, Csikszentmihalyi has proposed a model of flow experiences. In essence, this model indicates that a flow state is more

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likely to occur when individuals perceive a balance between above average skills and task demands (Csikszentmihalyi & Csikszentmihalyi, 1988).

In the sport literature, work has been done on the nature of peak experiences (Ravizza, 1984) as well as the mental state associated with peak performance (Cohn, 1991; Garfield & Bennett, 1984; Loehr, 1984). To date, however, study of the flow model in athletic settings has been limited. This is surprising given the empirically supported relationship of flow to correlates of heightened motivation in the physical domain (Chalip, Csikszentmihalyi, Kleiber, & Larson, 1984) and positive athletic performance (Jackson & Roberts, 1992).

This dearth of information on flow led Kimiecik and Stein (1992) to discuss conceptual and methodological issues related to future work on the flow state in sport. In their view, it is not sufficient to know what constitutes the flow experience per se. Rather, they argue that we need to understand the *how* and *why* of flow, or the psychological and situational factors which foster or diminish the frequency and intensity of flow occurrences.

A recent study by Stein, Kimiecik, Daniels, and Jackson (1995) examined goals, perceived competence, and confidence as predictors of flow experiences among tennis players competing in a tennis tournament, basketball players in a college activity class, and regular recreational golfers. Although there were theoretical reasons for expecting these variables to be positively associated with flow, the results generally revealed that none were predictive.

An alternative method for developing hypotheses about psychological predictors of flow is to ask athletes who, on a relative basis frequently experience flow, what they believe promotes and prevents flow. Using a qualitative approach, Jackson (1992) interviewed 16 national champion figure skaters (individual and pairs). Jackson categorized their views about what factors were most important for having a flow experience into five dimensions: (a) positive mental attitude, (b) positive pre-competitive and competitive affect, (c) maintaining appropriate focus, (d) physical readiness, and (e) unity with partner. Jackson observed that positive mental attitude consisted of three elements, namely confidence, positive thinking, and high motivation to do well. The dimension of positive pre-competitive and competitive affect also included three elements, i.e., being relaxed, controlling anxiety, and enjoying the activity. Dimensions identified as hindering flow were physical problems/mistakes, an inability to maintain focus, a negative mental attitude, and a lack of audience response.

Jackson (1995) followed up this initial research with a second qualitative investigation of the factors influencing the occurrence of flow among 28 elite athletes from seven sports. Factors important for the experience of flow

identified by these athletes were quite consistent with those identified in the earlier study and included motivation, pre-competitive arousal, physical preparation and readiness, confidence and positive attitude.

Jackson's (1992; 1995) studies provide valuable insight into what elite performers, upon reflection, perceive to be the psychosocial antecedents of the flow state. The present research builds on this qualitative work by conducting a prospective, quantitative test of these findings. The pre-performance factors identified in Jackson's work that were pertinent to recreational golf were assessed prior to performance and related to subsequent flow experiences. Further, this investigation extended Jackson's studies by examining the psychosocial precursors of flow among recreational as opposed to elite sport participants. Specifically, the purpose of this investigation was to determine the relationship of recreational golfers' pre-round confidence, positive thinking, motivation, level of relaxation, mental focus, and physical readiness to post-game reports of flow experiences. Based on Jackson's (1992) results, it was hypothesized that these pre-performance factors would emerge as positive predictors of the frequency and intensity of flow during either a 9 or 18-hole golf round.

The relative paucity of flow research in sport and the absence of generally accepted measures of flow in this setting provide particular challenges. In the view of Jackson and Marsh (1996, p. 17), «research of flow has lagged behind experiential awareness of the state due to the inherent difficulties of applying empirical methods to phenomenological experiences». Most studies have employed measures of flow that consist of separate items designed to assess various attributes of the flow state (Delle Fave & Massimini, 1988; Jackson, 1992; Jackson & Roberts, 1992). Jackson and Marsh (1996) have recently reported on the factorial validity of the Flow State Scale¹ which assessed nine dimensions of the flow experience and a higher order global flow factor. In their study, a multi-sport sample of Australian and United States athletes responded to this instrument after recalling an optimal experience during their sport participation.

An alternative approach to measurement combines these characteristics of the flow state into a more holistic description of a typical flow experience and has subjects report the degree to which they have experienced something similar (Allison & Duncan, 1988; Han, 1988). No comparison of these two different methods exists in the flow literature and consequently it is unclear how these variations in measurement methods might affect study out-

¹ The flow state scale was not available in the published literature at the time the data for the present study was collected.

comes. As indicated by Jackson and Marsh (1996, p. 32) «a useful direction for further research is to more systematically compare the results of various methods of inferring flow when used with the same group of respondents». Therefore, for purposes of comparison, both methods of measurement were employed in this study.

In terms of measurement issues, past research has also not distinguished between the dimensions of frequency and intensity in assessing the flow state. Csikszentmihalyi and LeFevre (1989) have indicated that flow experiences vary in intensity and that extremely intense experiences are probably rare. How flow frequency and intensity relate to each other, and whether they are differentially related to pre-performance psychological variables is not known. Therefore, this study included measures of both the intensity and frequency dimensions of flow.

Method

SUBJECTS

The subjects were 163 recreational golfers, 120 males and 38 females (5 subjects did not report their gender). The average age of the sample was 33.2 ± 12.9 years. Club or league membership was reported by 46% of the sample with 34% of subjects having an official handicap. Subjects varied widely in the number of years they had been golfing, from less than 1 year to 65 years ($M = 12.3 \pm 11.8$ years). The subjects reported an average score of 47.7 ± 7.8 strokes for 9 holes. Reported official handicaps varied from 0 to 36 ($M = 15.9 \pm 8.1$).

PROCEDURE

The majority of subjects were recruited at various golf courses in a mid-western town shortly before they began a round of golf (ten golfers were contacted at home or at work but received the same information and instructions). Permission to recruit subjects was obtained from the golf professionals who were in charge of the various courses and, when necessary, from the administrators of some golf leagues. Golfers were approached as they were preparing to play (either at the clubhouse or on their way to the first tee) and were informed that a study of golf experiences was being conducted and that volunteers were being sought to complete a questionnaire concerning their golfing experience. Golfers who volunteered to participate were given written instructions and a three-part questionnaire. The instructions requested subjects to complete the questionnaire anonymously and to complete the various sections at designated times during their golfing outing: i.e., the demographic section could be completed at any time, the pre-round section needed to be responded to immediately prior to teeing off, and the post-round section was completed immediately after completing the round. The instructions emphasized that there were no right or wrong answers and encouraged re-

spondents to answer honestly. Approximately 30-40% of those approached agreed to participate, and all but two volunteers completed the requirements as requested and returned the questionnaires to the first author following the completion of their round.

MEASURES

The three sections of the questionnaire focused on the following:

Demographic Information. The subjects were requested to furnish details concerning their age, gender, average or typical score for 9 holes, handicap, years golfing, and whether or not they played on a team or belonged to a club.

Pre-round Section. This section assessed the pre-competitive mental and physical readiness factors that lead to flow as suggested by Jackson (1992). Specifically, respondents used a 5-point Likert scale (1 = not true at all, 5 = very true) to indicate their feelings «right now» with respect to 18 items (3 items per construct) tapping their perceived confidence, positive thinking, motivation, relaxation, attentional focus, and physical readiness before the start of the round. These items were generated by the authors based on Jackson's suggestion (1992) to provide brief assessments of the six variables selected for this investigation. Negatively worded items were reversed.

Post-round Section. The post-round section assessed the golfers' experience of flow upon completion of the 9 or 18 hole round using two methods. The first method required subjects to rate their experience of 11 characteristics of flow on two 9-point Likert scales. The 11 items were derived from descriptions of flow characteristics in the literature (Csikszentmihalyi, 1975b; Csikszentmihalyi & Csikszentmihalyi, 1988; Jackson, 1992; Jackson & Roberts, 1992). The first scale assessed the frequency with which the particular characteristic was experienced (1 = almost never, 9 = almost all the time), while the second assessed depth or intensity of experience of the characteristic by having subjects indicate how much they felt like this when playing (1 = I hardly felt like this, 9 = I really felt like this). The characteristics of flow assessed were clear focus of attention, clear knowledge of goals, mind and body unison, effortless concentration on the task, a sense of control, enjoyment, deep but effortless involvement, direct feedback on performance level, lack of self-consciousness, distortion of time, and a sense of balance between challenges and skills. In Jackson's (1992) research employing the same 11 characteristics of flow, a coefficient alpha of .75 was obtained.

The second assessment of flow consisted of a brief description of a flow experience in the form of a quote by a hypothetical golfer². This quote was derived from a composite of

² «It was just one of those games when everything clicked. Everything went right, everything felt relaxed, smooth...it's just such a rush, like you feel it could go on and on and on, like you don't want it to stop because it's going so well, it's so enjoyable. It's almost as though you don't have to think, it's like everything goes automatically without thinking...it's like you're in automatic pilot, so you don't have any thoughts.

When I was playing I wasn't aware of other problems in my life. It became a world of its own. It's a concentration thing, being absolutely in the here and now, in the present and somehow the right thing is done without having to think about it or doing anything at all...It just happens yet you are more concentrated. Also, there was a real clarity to it all...I felt in such control of everything, every little movement. I was very aware...I could feel everything. And time was different - I wasn't aware of time passing».

various reported descriptions of flow experiences in sport (Csikszentmihalyi, 1975b, 1990; Jackson, 1992) and included the major components of flow as identified by Csikszentmihalyi (1975a, 1990). Subjects were asked to indicate, on a 9-point Likert scale, how frequently (1 = almost never, 9 = almost all the time) and to what degree or how intensely (1 = I hardly felt like this, 9 = I really felt like this) they experienced something similar to the description in the 9 or 18 holes they had just completed. A similar approach has been used by Allison and Duncan (1988) who read descriptions of the flow experience to subjects as the starting point in a structured interview.

Results

INITIAL ANALYSES

Validity and Reliability of Measures. Before examining the relationships between the independent variables and the flow measures, the psychometric properties of the various assessments employed were determined.

The measure of pre-round readiness was factor analyzed (principal component analysis with an oblique rotation and without specification of factors). The result is displayed in Table I. As can be seen, five predominant factors were revealed with an eigenvalue greater than 1.0. A minimum loading of .50 was deemed necessary before a particular item was considered to load on a specific factor.

Although these factors (which accounted for 64% of the variance) did not correspond with the six dimensions the instrument was intended to tap (Jackson, 1992), four did make conceptual sense. Three items originally developed to assess the level of pre-round relaxation loaded on the first factor, which was labeled «Calm». The second factor was labeled «Pessimistic» as the three items which loaded on it reflected negative pre-performance feelings and thoughts. The third factor was comprised of two items concerning motivation that countered each other. These two items were dropped from further analyses. Items concerned with feelings of confidence and readiness loaded on the fourth factor which was labeled «Confident Readiness». The fifth factor was labeled «Positive Focus» as the items which loaded on this dimension reflected positive thinking and a focused mental state. One item, i.e., «I feel nervous», loaded on both Calm and Positive Focus factors. In subsequent analyses, the item was included in the factor on which it loaded most highly, namely Positive Focus.

To assess the internal consistency of the four factors which were retained, Cronbach Coefficient Alphas (Cronbach, 1951) were calculated. The alphas for the Confident Readiness and Positive Focus subscales were within the acceptable range ($\alpha = .86$ and $.76$, respectively) while the observed

TABLE I
Factor Analysis of Pre-round Readiness Measure (Oblique rotation).

	Factor				
	Calm	Pessimism	Uninterpretable Factor	Confident Readiness	Positive Focus
Right Now...					
1. I feel calm	.87	.18	.03	-.08	.03
2. I feel relaxed	.68	-.01	.06	.02	.15
3. I feel nervous	-.58	.40	.15	-.23	.53
4. I am full of self doubt	-.08	.73	-.13	.09	-.16
5. I am talking negatively to myself	.08	.93	.05	.02	.19
6. I feel my skills aren't what they should be for this game	.31	.63	.00	-.14	-.15
7. I don't care how well I do	.03	.13	.75	-.25	.12
8. I feel that nothing is going to stop me from achieving my goal	-.02	-.30	.57	.21	.08
9. I am very confident	.16	-.04	.19	.69	-.08
10. I feel I am well practiced for the game	-.05	.09	-.22	.85	.01
11. I am completely focused	-.05	.03	-.10	.69	.14
12. I have complete belief in myself	-.02	.03	.41	.58	.19
13. I am focusing on my strengths	.00	.13	-.03	.73	.11
14. I feel well prepared for this game	.01	-.11	-.06	.92	-.17
15. I am ready to concentrate on this game	-.01	.07	-.06	-.02	.93
16. I am thinking positively	.20	-.04	.07	.16	.53
17. I really am motivated to do well	-.05	-.01	-.02	.24	.62
18. I am very distracted	-.29	-.41	.19	.38	-.54
Eigenvalue:	6.33	1.66	1.40	1.15	1.03
Percentage of variance:	35.15	9.21	7.76	6.39	5.73
Cumulative Percentage of Variance: 64.24					

internal reliability of the Calm and Pessimism dimensions were marginal ($\alpha = .61$ and $.69$, respectively).

The internal consistency of the multi-item measures of flow frequency and intensity were also determined. Both measures demonstrated high internal reliability ($\alpha = .86$ in each case).

Since two measures of flow frequency and intensity were used, the multi-item and description-based measures were correlated to assess their degree of correspondence. The results for both the frequency and intensity measures ($r = .58, p < .001$ and $r = .60, p < .001$, respectively) indicated that although the multi-item and description-based measures are strongly correlated, they were not redundant. Since these assessments appear to be tapping different aspects of the flow experience, both were included in subsequent analyses.

Flow frequency and intensity were also correlated. The results indicated a strong positive and significant correlation between flow frequency and intensity ($r = .71, p < .001$ in each case) for both the multi-item and description-based measures.

Table II displays the means and standard deviations for the two post-round measures of flow as well as the 11 characteristics comprising the multi-item measure of flow. As can be seen, subjects reported lower levels of flow

TABLE II
Means and Standard Deviations for Flow Measures.

Flow Measures	Frequency		Intensity	
	M	SD	M	SD
Description-based flow	4.71	2.23	5.05	2.42
Multi-item flow:				
Focused attention	6.15	1.54	5.80	1.65
Clear goals	6.93	1.48	6.61	1.47
Mind/body unison	4.78	1.72	5.24	1.85
Concentration	5.28	1.95	5.59	1.93
Complete control	5.06	1.82	5.42	1.87
Enjoyment	6.65	1.88	6.52	1.89
Involvement	5.64	1.92	5.97	1.89
Clear feedback	6.73	1.55	6.50	1.68
Unselfconscious	5.31	2.16	5.58	2.08
Alteration of time	5.86	2.14	5.81	1.96
Balance of challenges & skills	5.28	1.98	5.65	1.98
Multi-item flow	63.83	12.86	64.76	13.15

Note. Responses to all measures were on a 9 point scale; Multi-item flow (a total of the individual characteristics) has a maximum score of 99.

as assessed via the description-based measure in comparison to the multi-item scale.

PRE-ROUND READINESS FACTORS

The means and standard deviations for the pre-round readiness variables are displayed in Table III and their simple correlations with the flow measures are displayed in Table IV.

Canonical correlation analysis was used to examine the relationship between the pre-round readiness factors and the experience of flow frequency and intensity. Separate analyses were conducted for the multi-item and description-based measures of flow. In addition, skill level (average score) was included with the pre-round readiness variable set because simple correlations between average score and the flow measures ($r = -.25$ to $-.35, p < .001$) indicated this variable was significantly associated with flow³. A minimum loading of .3 was required for a variable to be interpreted in the canonical correlation analysis (Tabachnick & Fidell, 1989).

The results for the multi-item measures of flow are displayed in Table V. One canonical function was significant, Wilks Lambda = .57, canonical correlation = .64. Redundancy analysis indicated that the pre-round readiness measures accounted for 18% of the variance in indices of flow. The results

TABLE III
Means and Standard Deviations for Pre-round Readiness Factors

Factor	M	SD
1. Calm	3.86	.70
2. Confident Readiness	3.82	.90
3. Pessimism	2.07	.69
4. Positive Focus	3.71	.70

Note. Items are on a five point scale.

³ T-tests indicated that mean levels of the various flow indices did not significantly differ by gender or club or league membership. The only demographic variables significantly correlated with any of the flow measures were average score, handicap, and years of golfing. Significant intercorrelations between average score, handicap, and years golfing, suggest these variables have a significant relationship with flow because they are indexes of skill level. Average score was selected for inclusion in analyses as the best index of skill level because not all golfers had handicaps, and average score was more strongly correlated with the flow variables than years of golfing experience.

TABLE IV
Correlations between Pre-round Readiness Variables and Flow Measures

Measures	Multi-item flow		Description-based flow	
	Frequency	Intensity	Frequency	Intensity
Calm	.17*	.11	-.05	-.02
Confident Readiness	.48**	.45**	.38**	.34**
Pessimism	-.26**	-.27**	-.20**	-.11
Positive Focus	.43**	.42**	.25**	.29**

* $p < .05$. ** $p < .01$.

indicated that golfers who reported greater pre-round confident readiness, positive focus, degree of calmness, and lower average scores and feelings of pessimism, experienced flow more intensely and frequently.

The results for the description-based measures of flow are also displayed in Table V. One canonical function was significant, Wilks Lambda = .72, canonical correlation = .49. Redundancy analysis indicated that the percent of variance the pre-round readiness variables accounted for in indices of

TABLE V
Correlations, Canonical Correlations, Percents of Variance, and Redundancies between Pre-round Readiness Variables and Flow Measures and their Corresponding Canonical Variates

	Type of flow measure	
	Multi-item	Description-based
Pre-round measures		
Confident Readiness	.93	.91
Positive Focus	.78	.61
Pessimism	-.49	-.38
Calm	.39	.02
Average score	-.56	-.60
Percent of variance	.44	.34
Redundancy	.18	.09
Flow measures		
Flow frequency	1.00	.98
Flow intensity	.77	.87
Percent of variance	.79	.86
Redundancy	.32	.21
Canonical correlation	.49	.64
Squared canonical correlation	.25	.41

flow was 9%. The results indicated that golfers who reported greater pre-round confident readiness and positive focus as well as lower average scores and feelings of pessimism, experienced flow more frequently and intensely.

Discussion

One purpose of the present investigation was to explore issues concerning the measurement of flow. The internal consistency of the multi-item measures of flow was found to be acceptable. The observed correlation between multi-item flow frequency and description-based flow frequency was similar to the correlation between multi-item flow intensity and description-based flow intensity. Although the associations between the multi-item and description-based measures of frequency and the multi-item and description-based measures of intensity were positive and strong, only 34% and 36% of the variance was shared respectively. This suggests a distinction in how subjects seemed to have interpreted these measures. Csikszentmihalyi (1992) has argued that assessments employed to measure flow can only capture part of this complex psychological state and should not be ratified and mistaken for the experience itself. Our data support this argument in that the different forms of measurement did not appear to be interchangeable.

It is also important to note that less flow was reported using the description-based measure of flow than the multi-item measure. One possible explanation of these findings is that the notion of «total» or deep-flow (Csikszentmihalyi, 1975b) was conveyed in the description-based measure. Total or deep-flow may be more than a simple additive composite of the individual features that characterize the experience. If so, the lower levels of flow on this measure could be explained by Csikszentmihalyi's (1975b) suggestion that deep or macro-flow occurs less often.

In general, the results indicated that subjects had occasional feelings of flow of a moderate intensity («I felt somewhat like this»). Further, it seems that those who most frequently experience flow tend to experience flow more intensely.

The measure of skill level (i.e., self-reported average score) was found to relate fairly strongly (and negatively) with all the flow measures. This finding seems quite intuitive and can be explained in terms of the flow model. Golf is a difficult game and presents a reasonable level of challenge. Golfers of higher skill level (i.e., those who have a lower average score) should be more

likely to perceive a balance between challenge and skills. This assumption is supported in the present data via the observed significant relationship between perceptions of a balance between challenge and skill and average score ($r = -.30, p < .001$, and $-.32, p < .001$).

PRE-ROUND READINESS FACTORS

The pre-round readiness variables examined (Confident Readiness, Pessimism, Calm, and Positive Focus) were modified quantitative versions of five factors found to lead to flow in Jackson's (1992) qualitative research. More work is required to further develop brief but valid and reliable assessments of pertinent pre-round readiness variables.

Canonical correlation analyses consistently revealed pre-round readiness factors to be significantly related to flow. Confident Readiness appeared to have the strongest relationship to flow followed by Positive Focus, and Pessimism. The degree of Calmness reported pre-round was related only to the multi-item measures of flow. The relative importance of Confident Readiness for the experience of flow suggested by these findings is aligned with the results of Jackson's (1992, 1995) interviews with elite athletes. In both studies, one of the most frequently cited factors thought to influence flow was confidence or positive mental attitude.

Our results can also be compared to those of Stein et al. (1995) who conducted a study with similar goals and included confidence as a predictor of flow. Interestingly, although their studies of three different samples (tennis players, golfers, and basketball players) using three different predictors of flow (goals, perceived competence, and confidence) generally revealed no significant relationships, there was one significant finding. Consistent with our results, Stein and his colleagues found that recreational golfers who were classified as having experienced flow had higher confidence than a group that were classified as having experienced anxiety.

Before drawing too strong conclusions regarding the robustness and importance of our findings, however, it should be noted that indices of pre-round psychological state accounted for a limited amount (i.e., 9-17%) of variance in indices of flow. We assessed psychological states prior to the round and events *during* the round may also have significant effects on the experience of flow. In addition, we attempted to predict flow on only one occasion. Studying the antecedents of flow among golfers over the length of a season may yield further insight into the social psychological processes underlying the flow state.

PRACTICAL IMPLICATIONS

Our results suggest that while skill level is important for the quality of athletic experience of recreational golfers, pre-performance psychological states are at least as important. Both improved performance and greater enjoyment that are characteristic of flow experiences may be enhanced by psychological skills and techniques (such as goal setting, negative thought stopping, imagery etc.) designed to improve pre-performance states. While these techniques are now quite widely used, the vast majority of applied sport psychology interventions are directed at higher level athletes. Educating about psychological skills and their value may be an effective means of increasing the quality of recreational golfers' athletic experience as well.

Another potentially important aspect of our findings was that «confident readiness», a variable that encompassed feelings of being well practiced and prepared as well as confident, proved to be the most important pre-performance factor for flow experiences. This suggests that developing confidence and a sense of readiness (such as might be achieved through the employment of a sound and systematic pre-shot routine) should be a priority of psychological skills programs geared toward recreational golfers.

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Psychological Processes of Peak, Average, and Failing Performance in Sport

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To compare psychological processes of peak, average, and failing performance in sport, the Experience Questionnaire was administered to adults who were not elite athletes. Data included 20 peak performances, 38 average performances, and 18 failing performances, all self-assessed. Discriminant analyses and MANOVAs differentiated performance level by psychological processes. Analyses of variance and post hoc range tests defined processes of the three performance levels. Superior sport performance and even average performance, but not failure, were playful, fun, and sociable. Peak performance in sport was rewarding and fulfilling, perhaps even triggering ecstasy or peak experience. A peak dyad-full, clear focus on task, on self, on relevant others, and on the interactive process best described the psychological constellation of peak performance in sport.

KEY WORDS: Focus, Optimal performance, Peak performance, Psychological process of sport

A challenge for athletes and sport researchers is to identify accurately and assess the impact of psychological processes on sport performance. Although behavior is the obvious unit of measurement of sport performance, there has been increasing interest in psychological aspects of performance (Hardy & Jones, 1994). The focus of this study was to identify and clarify some of the psychological processes associated with peak, average, and failing performance in sport.

Writers such as Gallwey (1974), Leonard (1974), and Garfield and Benet (1984) have highlighted the role of psychological and personality factors

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