

RACHAEL PARKER

LINDA BRESETTE

JIM O'NEILL

MARY SCAPINO

AMANDA WALSH

KATELYN WALTERS

EDIE WOODS*

Madonna University

Self-Esteem, Locus of Control, the Imposter Phenomenon, and Academic Achievement in High School Students

This study investigated the relationship between self-esteem, locus of control, the imposter phenomenon (IP) and academic achievement in high school students. The data suggest that both lower self-esteem and a more external locus of control predict a greater experience of the IP, and further, that both a greater experience of the IP and a more internal locus of control are related to higher academic achievement. We suggest that viewing the IP population as a heterogeneous group may account for the apparent inconsistencies in the data. Because it is clear that high school students experience the IP, it is a characteristic that bears further investigation leading to prevention, particularly in the context of academic achievement.

Rosenberg (1962) defined self-esteem as what people *think* of themselves, particularly how much worth and value a person finds within, while Leary and Baumeister (2000) defined it as how people *feel* about themselves. Low self-esteem is correlated with many negative emotional responses, such as depression, anxiety, irritability, jealousy, and loneliness (Leary & Baumeister, 2000). High self-esteem is correlated with having well-defined educational aspirations and goals (Kishor, 1981) and with high achievement (Covington, 1984). Nevertheless, Mone, Baker, and Jeffries (1995) found that self-efficacy, or confidence in one's abilities—not self-esteem—predicted personal goals and academic performance.

Locus of control is a second characteristic related to academic achievement. Rotter (1966) defined locus of control as part of the personality that involves a person's beliefs regarding the consequences of his or her own behavior. An individual with an external locus of control believes that those consequences are controlled by luck, fate, powerful others, whereas an internal individual believes that those consequences are under his/her own control. An external locus of control is correlated with anxiety, adjustment problems,

lower self-confidence (Rotter, 1975), and vulnerability to life stress (Kliewer & Sandler, 1992). An internal locus of control is related to having leadership abilities (McCullough, Ashbridge, & Pegg, 1994), healthier behaviors, lower stress levels (Rotter, 1966), and higher self-esteem (Kishor, 1981; Kliewer & Sandler, 1992; Mullis & Mullis, 1997; Wallace, Cunningham, & Del Monte, 1984). A meta-analysis of 275 tests from

Author Note. Rachael Parker completed this research as a senior independent study project. She presented portions of the research at the Michigan Academy of Science, Arts and Letters, March 2003. Linda Bresette worked on this research as a masters independent study project. Mary Scapino, Amanda Walsh, and Katelyn Walters worked on the project as high school students in the Psychology Intensive of the 2002 Michigan Summer Institute for the Arts and Sciences at Madonna University.

The authors would like to thank Dr. Steve Davis for his encouragement and helpful comments on the manuscript and Dr. Pauline Clance for her insights regarding the imposter phenomenon. We are also grateful to Sr. Nancy Marie Jamroz, PhD, CSSF, V. P. of Student Life at Madonna University and Chris Kitzman, State Coordinator, Michigan Summer Institutes for the Arts, Sciences and Technology, for their support of the project.

Correspondence concerning this article should be addressed to Edie Woods, PhD, Psychology Department, Madonna University, 36600 Schoolcraft, Livonia, MI 48150, or via email to ewoods@madonna.edu.

*Faculty supervisor

almost 100 research reports found that an internal locus of control is also related to greater academic achievement (Findley & Cooper, 1983).

The imposter phenomenon (IP) is a third personality characteristic related to achievement. The IP, first described by Clance and Imes (1978) in high achieving women, has three aspects: feeling like an intellectual phony, having the tendency to attribute success to external factors, and the fear of being discovered as an intellectual imposter or fraud. The IP experience is correlated with low self-esteem (Chrisman, Pieper, Clance, Holland, & Glickauf-Hughes, 1995; Cozzarelli & Major, 1990; Topping & Kimmel, 1985), high anxiety, self-doubt (Clance & O'Toole, 1988), fear of failure (Clance & O'Toole, 1988; Fried-Buchalter, 1997), and lower self-acceptance (September, McCarrey, Baranowsky, Parent, & Schindler, 2001). The IP experience is also a predictor of current psychological distress (Henning, Ey, & Shaw, 1998), low interpersonal flexibility (Hayes & Davis, 1993), negative emotions (Thompson, Davis, & Davidson, 1998), lack of comfort as a role model or mentor (Brems, Baldwin, Davis, & Namnyiuk, 1994) and the tendency to react helplessly (Langford & Clance, 1993). Surprisingly, at the same time, the IP experience does have some desirable correlates such as high levels of achievement motivation (Topping, 1983, as cited in Chae, Piedmont, Estadt, & Wicks, 1995), achievement in first-year college students (King & Cooley, 1995), and academic self-concept (Ewing, Richardson, James-Myers, & Russell, 1996).

In summary, each of these three predictor variables—self-esteem, locus of control, and the IP—relates to academic achievement individually. IP scores were positively related to achievement (King & Cooley, 1995) and achievement motivation (Topping, 1983, as cited in Chae et al., 1995). An internal locus of control was also positively related to academic achievement (Findley & Cooper, 1983). Finally, the relation between self-esteem and academic achievement was also positive in some studies (Kishor, 1981; Covington, 1984). The hypothesis of the present study, based on the literature, is that higher self-esteem, an internal locus of control, and a greater IP experience predict academic achievement.

A multivariate design provides the opportunity to look at relations among the predictor variables instead of simply considering their individual relations with the criterion variable. Nevertheless, the results of previous studies investigating some of these relations suggest predictions that are not consistent with the basic hypothesis present above. For example, research shows that a greater IP experience is related to a more *external* locus of control (Byrnes & Lester,

1995; Robinson & Goodpaster, 1991), yet the present hypothesis suggests that a greater IP experience would accompany a more *internal* locus of control. In addition, previous studies have shown that *lower* self-esteem is moderately related to a greater experience of the IP (Topping & Kimmel, 1985), whereas the present hypothesis suggests that *higher* self-esteem would accompany a greater IP experience. Measuring all of these variables in a single group of participants may help to resolve these inconsistencies. In the end, it is important for parents and educators to understand the relations among these variables so that they can encourage academic achievement along with the development of a healthy personality.

Method

Participants

Participants were 95 high school juniors and seniors from across the state of Michigan enrolled in the Michigan Summer Institute for the Arts and Sciences at Madonna University, Livonia, MI, in July 2002. We sent the students' parents/guardians a letter explaining the study and requesting permission for their student to participate. The letter included a form for the parents/guardians to sign and return if they did not wish their student to participate; only one parent returned a signed form.

Participants ranged in age from 15 to 18 years, with 87% being 16 or 17 years old. Seventy-five percent were female, and 67% had either one or two siblings. At least 50% of these students' parents had completed some college. Thirty-two percent of the students reported that they plan to complete a 4-year college degree, whereas 66% reported planning to complete a graduate degree.

Instruments

We assembled one survey including an introductory letter, three paper/pencil scales, and a page of demographic questions. The three scales included in the survey were the Rosenberg Self-Esteem Scale (Rosenberg, 1965), the Nowicki-Strickland Locus of Control Scale (Corcoran & Fisher, 2000), and the Clance Imposter Phenomenon Scale (Clance, 1985).

The Rosenberg Self-Esteem Scale includes 10 items on a 4-point Likert scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*); some items are reversed in valence. A sample item from this scale is "I feel that I have a number of good qualities." Possible total scores (SE), derived by summing an individual's responses to each of the 10 items, range from 0 to 30, with a higher score indicating higher self-esteem. The scale has high reliability measured in terms of both test-retest correlations (.82 to .88) and Cronbach's alpha

(.77 to .88; Rosenberg, 1986). Cronbach's alpha for the present sample was .87.

The Nowicki-Strickland Locus of Control Scale includes 40 yes/no items. A sample item from this scale is "Do you believe that most problems will solve themselves if you just don't fool with them?" The directions list the "correct" answers for each item, and an individual's score is simply the number of "correct" answers given. Possible total scale scores (LC) range from 0 to 40, with higher scores indicative of more external locus of control. This scale has fair validity, and it has split-half reliabilities of .74 for grade 11 and .81 for grade 12 (Corcoran & Fisher, 2000). Cronbach's alpha for this scale for the present sample was .67.

The Clance Imposter Phenomenon (IP) Scale includes 20 items on a 5-point scale ranging from 1 (*not at all true*) to 5 (*very true*). A sample item from this scale is "I can give the impression that I'm more competent than I really am." An individual's score is the sum of scores on all 20 items. Scores (IP) range from 20 to 100, with a higher score indicating more frequent and serious experience of the imposter phenomenon in the individual's life (Clance, 1985). Internal consistency reliability measured as Cronbach's alpha for the Clance IP Scale was reported to be .92 (Chrisman et al., 1995); for the present sample, it was .88. Chrisman and colleagues (1995) found that the Clance IP Scale has both discriminant validity and construct validity. The Clance IP Scale (CIPS) has become the measurement of choice to identify the IP (Holmes, Kertay, Adamson, Holland, & Clance, 1993).

We presented the demographic questions on the final page of the survey; they included items about age, gender, number of siblings, birth order, educational goal, mother's educational background, and father's educational background. Participants also reported their grade point average on a 4-point scale (GPA) on this page. GPA is an acceptable measure of academic achievement (e.g., Findley & Cooper, 1983).

Procedure

Participants completed the survey in a group setting during one of the initial Summer Institute meetings. We asked participants to read the brief explanatory letter printed on the cover sheet of the survey, and we read the information in the letter aloud as well. The letter explained that it was an anonymous survey that would require about 25 min to complete. The letter also explained that participation was voluntary and that anyone choosing not to participate could leave the survey blank and turn it in with the others. Finally, the letter explained that someone would be available to answer questions while the participants were completing the survey. After everyone completed the sur-

vey, we collected the papers and told participants they would be informed as to the purpose and results of the study at the conclusion of the Summer Institute.

Results

Preliminary Analyses

A check of the frequency distributions for the four variables (SE, IP, LC, and GPA) indicated no significant skewness (skewness = -.30 for SE, .42 for IP, .26 for LC, and -1.12 for GPA). There were no significant univariate outliers, based on the criterion of three standard deviations above or below the mean score. A test for multivariate outliers with the four variables as predictors and participant number as criterion also revealed no significant outliers (maximum Mahalanobis distance = 14.39, $p < .05$).

We ran bivariate correlations between all the demographic variables and SE, IP, LC, and GPA. Statistically significant correlations ($p < .05$) were found for higher experience of the IP and participants who were young ($r = -.20$) and whose fathers had completed less education ($r = -.17$). Although the variance shared between these variables and the IP experience was small ($r^2 < .05$), since the correlations were significant, we controlled for participants' ages and father's educational backgrounds in the hypothesis testing analyses. We found no significant correlations between SE, LC, or GPA and any of the demographic variables.

Descriptive Statistics

On the Rosenberg scale, the mean ($\pm SD$) self-esteem score was 21.2 (± 4.9), with scores ranging from 9 to 30. On the Nowicki-Strickland scale, the mean ($\pm SD$) locus of control score was 12.9 (± 4.7), with scores ranging from 2 to 26. On the Clance IP Scale, the mean ($\pm SD$) score was 56.1 (± 12.6), with scores ranging from 28 to 92. The mean GPA ($\pm SD$) was 3.63 ($\pm .38$), with a range from 2.5 to 4.3 (above the expected 4.0 because of weighting given to honors and accelerated courses in some high schools).

Hypothesis Testing

A hierarchical regression analysis was used to examine the extent to which IP was predicted by two of our variables, after controlling for participant's age and father's educational level. High IP experience was significantly predicted by more external/less internal locus of control and low self-esteem, R^2 change = .42, $F(4, 89) = 16.27$, $p < .01$. The coefficients and significance values for the hierarchical regression analysis are presented in Table 1.

Another hierarchical regression analysis was used to examine the extent to which GPA was predicted by our three variables, after controlling for participant's

TABLE 1**Regression of Locus-of-Control and Self-Esteem on Imposter Phenomenon**

	Standardized Coefficient ^a	<i>t</i>
Locus of control	.28	3.44*
Self-esteem	-.49	-5.90*

^a Represents standardized regression coefficient after controlling statistically for father's education level and student's age.
**p* ≤ .05

TABLE 2**Regression of Locus-of-Control, Self-Esteem, and Imposter Phenomenon on Grade Point Average**

	Standardized Coefficient ^a	<i>t</i>
Locus of control	-.35	-3.18**
Self-esteem	.06	.48
Imposter phenomenon	.28	2.08*

^a Represents standardized regression coefficient after controlling statistically for father's education level and student's age.
p* ≤ .05; *p* ≤ .01

age and father's educational level. High GPA was significantly predicted by greater IP experience and more external/less internal locus of control, R^2 change = .13, $F(4, 86) = 2.53$, $p < .05$. The coefficients and significance values for this hierarchical regression analysis are presented in Table 2.

Discussion

Consistent with previous research, the present data suggest that a greater experience of the IP is related both to lower self-esteem (Chrisman et al., 1995; Cozzarelli & Major, 1990) and a more external locus of control (Byrnes & Lester, 1995; Robinson & Goodpaster, 1991). In line with our hypothesis, the present data show that a greater experience of the IP is related to higher academic achievement. This relation between the IP and achievement is consistent with previously reported findings (King & Cooley, 1995). Earlier studies reporting no relation between the IP experience and GPA (Cozzarelli & Major, 1990; September et al., 2001) used a *t* test or ANOVA com-

paring low and high IP individuals rather than a correlational analysis. This factor may account for the discrepant results (e.g., Holmes et al., 1993). In support of the present data, it is noteworthy that other previous studies found significant relations between the IP experience and factors related to academic achievement, such as achievement motivation (Topping, 1983, as cited in Chae et al., 1995) and academic self-concept (Ewing et al., 1996).

Also in line with our hypothesis, the present data show a relation between a more internal locus of control and academic achievement. This finding is consistent with the results of Findley and Cooper's (1983) meta-analysis including 275 findings from over 100 research reports investigating the relation between locus of control and academic achievement.

In contrast, results for the third predictor variable, self-esteem, were not consistent with our hypothesis. The prediction was that higher self-esteem would be related to academic achievement, based on previous studies in which higher self-esteem was related to high achievement (Covington, 1984) and to having made an educational or vocational decision as opposed to being undecided (Kishor, 1981). However, other studies found that self-esteem did not predict performance in an academic setting (Mone, et al., 1995) or subsequent academic achievement (Ross & Broh, 2000). The present data were actually more in line with the latter results, with self-esteem accounting for little of the variance in achievement. It is important to continue investigating the relation between self-esteem and academic achievement, to determine whether interventions aimed at self-esteem, or those aimed at another characteristic, such as self-efficacy (Mone et al., 1995) will be more useful.

Obtaining data that were in line with previous research and our hypothesis was encouraging. Upon closer examination, however, these consistent results appear inconsistent when taken together. For example, a more *internal* locus of control is related to higher academic achievement, yet a more *external* locus of control is related to higher academic achievement through a greater IP experience. Also, even though self-esteem is *not* related to academic achievement, lower self-esteem is related to higher academic achievement through a greater IP experience. The critical researcher may rightly ask whether the IP—a puzzling construct that correlates simultaneously with both undesirable and desirable characteristics and behaviors—is clouding or sharpening our focus on academic achievement.

One way to resolve these apparent inconsistencies—and sharpen our focus on academic achieve-

ment—is to recall that the IP is a three-faceted phenomenon (Clance & Imes, 1978). Two facets, the feeling of intellectual phoniness and the fear of being discovered as an intellectual fraud, are non attribution-related, whereas the third facet, the tendency to attribute success to external factors, is attribution-related. It is possible, then, to have a high IP experience in several different ways. For example, a high IP experience could result from a more external locus of control accompanied by lower scores on the two nonattribution-related factors. On the other hand, an individual with a more internal locus of control who scored higher on the other two factors could also have a greater IP experience; this individual may be likely to score lower on self-esteem as well. Thus, it would be possible to have a range of locus of control scores, from very internal to very external, in one group of individuals experiencing the IP.

This view of the IP population as a heterogeneous group may account for the apparent inconsistencies in the present data. It also suggests that in future studies it would be important to investigate the relation between participants' scores on the attribution-related facet of the IP and other variables that predict academic achievement. (It was not possible to analyze the present data in this way, because the breakdown of IP scale items into three subgroups was not available.) Along the same lines, it may be important to try to extend the range of locus of control scores; participants in the current study had scores ranging from 2 to 26 on a scale that goes from 0 to 40. The range in this study may be representative, however, given that highly gifted students are more internal (Brody & Benbow, 1986).

Some researchers have concluded that it is important to minimize the IP experience, for a variety of reasons. The IP is "an internal barrier to empowerment and achievement" (Clance & O'Toole, 1988, p. 51), it may put someone at greater risk for lower self-esteem and affect following failure (Cozzarelli & Major, 1990), and it is correlated with many undesirable traits and behaviors, as outlined above. Group therapy has been a preferred treatment for IP individuals, because it helps them become aware of the issue and provides support (Clance, Dingman, Reviere, & Stober, 1995; Clance & Imes, 1978; Matthews & Clance, 1985). Nevertheless, others who see the IP as a motivational style disagree with the need for treatment. They suggest that individuals who experience the IP should avoid situations in which the IP surfaces, such as competitions (Chae et al., 1995). Because it is clear from the present data and an earlier study (Cromwell, Brown, Sanchez-Huceles, & Adair, 1990) that high

school students experience the IP, it is a characteristic that bears further investigation leading to prevention (Clance & Imes, 1978; Steinberg, 1986), particularly in the context of academic achievement.

References

- Brems, C., Baldwin, M. R., Davis, L., & Namyniuk, L. (1994). The imposter syndrome as related to teaching evaluations and advising relationships of university faculty members. *Journal of Higher Education*, 65, 183-193.
- Brody, L. E., & Benbow, C. P. (1986). Social and emotional adjustment of adolescents extremely talented in verbal or mathematical reasoning. *Journal of Youth and Adolescence*, 15, 1-18.
- Byrnes, K. D., & Lester, D. (1995). The imposter phenomenon in teachers and accountants. *Psychological Reports*, 77, 350-351.
- Chae, J., Piedmont, R. L., Estadt, B. K., & Wicks, R. J. (1995). Personological evaluation of Clance's impostor phenomenon scale in a Korean sample. *Journal of Personality Assessment*, 65, 468-485.
- Chrisman, S. M., Pieper, W. A., Clance, P. R., Holland, C. L., & Glickauf-Hughes, C. (1995). Validation of Clance Impostor Phenomenon Scale. *Journal of Personality Assessment*, 65, 456-467.
- Clance, P. R. (1985). *The imposter phenomenon: Overcoming the fear that haunts your success*. Atlanta, GA: Peachtree Publishers Ltd.
- Clance, P. R., Dingman, D., Reviere, S. L., & Stober, D. R. (1995). Impostor phenomenon in an interpersonal/social context: Origins and treatment. *Women & Therapy*, 16, 79-96.
- Clance, P. R., & Imes, S. A. (1978). The imposter phenomenon in high achieving women: Dynamics and therapeutic intervention. *Psychotherapy: Theory, Research, and Practice*, 15, 241-247.
- Clance, P. R., & O'Toole, M. A. (1988). The imposter phenomenon: An internal barrier to empowerment and achievement. *Women & Therapy*, 6, 51-64.
- Corcoran, K., & Fisher, J. (2000). *Measures for clinical practice: A sourcebook*. New York: The Free Press.
- Covington, M. V. (1984). The self-worth theory of achievement motivation: Findings and implications. *Elementary School Journal*, 85, 5-20.
- Cozzarelli, C., & Major, B. (1990). Exploring the validity of the imposter phenomenon. *Journal of Social and Clinical Psychology*, 9, 410-417.
- Cromwell, B., Brown, N., Sanchez-Huceles, J., & Adair, F. L. (1990). The imposter phenomenon and personality characteristics of high school honor students. *Journal of Social Behavior and Personality*, 5, 563-573.
- Ewing, K. M., Richardson, T. Q., James-Myers, L., & Russell, R. K. (1996). The relationship between racial identity attitudes, worldview, and African American graduate students' experience of the imposter phenomenon. *Journal of Black Psychology*, 22, 53-66.
- Findley, M. J., & Cooper, H. M. (1983). Locus of control and academic achievement: A literature review. *Journal of Personality and Social Psychology*, 44, 419-427.
- Fried-Buchalter, S. (1997). Fear of success, fear of failure, and the imposter phenomenon among male and female marketing managers. *Sex Roles*, 37, 847-859.
- Hayes, K. M., & Davis, S. F. (1993). Interpersonal flexibility, type A individuals, and the imposter phenomenon. *Bulletin of the Psychonomic Society*, 31, 323-325.
- Henning, K., Ey, S., & Shaw, D. (1998). Perfectionism, the imposter phenomenon and psychological adjustment in medical, dental, nursing and pharmacy students. *Medical Education*, 32, 456-464.
- Holmes, S. W., Kertay, L., Adamson, L. B., Holland, C. L., & Clance, P. R. (1993). Measuring the imposter phenomenon: A comparison of Clance's IP scale and Harvey's I-P scale. *Journal of Personality Assessment*, 60, 48-59.
- King, J. E., & Cooley, E. L. (1995). Achievement orientation and the imposter phenomenon among college students. *Contemporary Educational Psychology*, 20, 304-312.

- Kishor, N. (1981). The effect of self-esteem and locus of control in career decision making of adolescents in Fiji. *Journal of Vocational Behavior, 19*, 227-232.
- Kliener, W., & Sandler, I. N. (1992). Locus of control and self-esteem as moderators of stressor-symptom relations in children and adolescents. *Journal of Abnormal Child Psychology, 20*, 393-413.
- Langford, J., & Clance, P. R. (1993). The impostor phenomenon: Recent research findings regarding dynamics, personality and family patterns and their implications for treatment. *Psychotherapy, 30*, 495-501.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology, 32*, 1-62.
- Matthews, G., & Clance, P. R. (1985). Treatment of the impostor phenomenon in psychotherapy clients. *Psychotherapy in Private Practice, 3*, 71-81.
- McCullough, M., Ashbridge, D., & Pegg, R. (1994). The effect of self-esteem, family structure, locus of control, and career goals on adolescent leadership behavior. *Adolescence, 29*, 605-611.
- Mone, M. A., Baker, D. D., & Jeffries, F. (1995). Predictive validity and time dependency of self-efficacy, self-esteem, personal goals, and academic performance. *Educational and Psychological Measurement, 55*, 716-727.
- Mullis, A. K., & Mullis, R. L. (1997). Vocational interests of adolescents: Relationships between self-esteem and locus of control. *Psychological Reports, 81*, 1363-1371.
- Robinson, S. L., & Goodpaster, S. K. (1991). The effects of parental alcoholism on perception of control and impostor phenomenon. *Current Psychology: Research & Reviews, 10*, 113-119.
- Rosenberg, M. (1962). The association between self-esteem and anxiety. *Journal of Psychiatric Research, 1*, 135-152.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rosenberg, M. (1986). *Conceiving the self*. Malabar, FL: Krieger.
- Ross, C. E., & Broh, B. A. (2000). The roles of self-esteem and the sense of personal control in the academic achievement process. *Sociology of Education, 73*, 270-284.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*, 1-28.
- Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal vs. external reinforcement. *Journal of Consulting and Clinical Psychology, 43*, 56-67.
- September, A. N., McCarrey, M., Baranowsky, A., Parent, C., & Schindler, D. (2001). The relation between well-being, impostor feelings, and gender role orientation among Canadian university students. *The Journal of Social Psychology, 141*, 218-232.
- Steinberg, J. A. (1986). Clinical interventions with women experiencing the impostor phenomenon. *Women & Therapy, 5*, 19-26.
- Thompson, T., Davis, H., & Davidson, J. (1998). Attributional and affective responses of impostors to academic success and failure outcomes. *Personality and Individual Differences, 25*, 381-396.
- Topping, M. E. H., & Kimmel, E. B. (1985). The impostor phenomenon: Feeling phony. *Academic Psychology Bulletin, 7*, 213-226.
- Wallace, J. R., Cunningham, T. F., & Del Monte, V. (1984). Changes in the relationship between self-esteem and locus of control. *The Journal of Social Psychology, 124*, 261-262.