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The Gifted Rating Scales-School Form: A Validation Study Based on Age, Gender, and Race

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Abstract

This study examined the internal consistency and validity of a new rating scale to identify gifted students, the Gifted Rating Scales-School Form (GRS-S). The study explored the effect of gender, race/ethnicity, age, and rater familiarity on GRS-S ratings. One hundred twenty-two students in first to eighth grade from elementary and middle schools in the southeastern United States participated in the investigation. Results indicated high internal consistency for the six GRS-S scales: Intellectual Ability, Academic Ability, Creativity, Artistic Talent, Leadership, and Motivation. Results revealed no effect of race/ethnicity, age, or rater familiarity with the student. There was no significant effect for gender, although a trend was noted for girls rated slightly higher than boys across all scales. This trend was consistent with analyses of the standardization data and with cross-cultural findings using translated versions of the GRS-S. The present findings provided support for the GRS-S as a valid gifted screening instrument.

One important, first step in meeting the needs of the gifted is accurately and efficiently identifying students who might be gifted. At the same time, experts in the gifted field acknowledge that the identification process is fraught with problems that compromise the accurate identification of truly gifted students (Borland, 1996; Gallagher, 2003; Pfeiffer, 2001, 2002; Sternberg, 1996). One of the problems in identifying gifted students is the scarcity of technically adequate rating scales (Jarosewich, Pfeiffer, & Morris, 2002).

In measurement vernacular, a significant number of gifted children are not identified by present assessment procedures (Type II error). One can also assume that a significant number of students who are not gifted may end up erroneously placed in gifted programs because of limitations in existing assessment procedures (Type I error). One specific reason for this state of affairs is that, in many school systems across the United States, the IQ test is the *only* instrument used to determine whether a student is gifted (Ford, 1998; Gallagher, 2003, Naglieri & Ford, 2003; Pfeiffer, 2003).

Although the IQ test enjoys a long and valued history in gifted identification (Flanagan, Genshaft, & Harrison, 1997; Sattler, 2001; Sparrow, Pfeiffer & Newman, 2005), like any psychological test, the IQ test is not infallible and has its limitations. Perhaps the most

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telling criticism of the IQ test, when used for gifted identification, is the fact that it is rarely used as part of a comprehensive assessment protocol. Many gifted students simply will go unrecognized if the IQ test is the sole measure used for gifted determination (Ford, Harris, Tyson, & Trotman, 2002).

At the present time, few technically sound screening instruments are available to complement the IQ test in providing a comprehensive picture of the student's abilities and potential (gifts). Three of the more popular teacher rating scales designed to identify gifted students are the Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS; Renzulli et al., 19971), the *Gifted and Talented Evaluation Scales* (GATES; Gilliam, Carpenter, & Christensen, 1996), and the *Gifted Evaluation Scale*, 2nd edition (GES-2; McCarney & Anderson, 1989). Although the SRBCSS, GATES, and GES-2 have positive qualities, they also have technical shortcomings that limit their diagnostic usefulness. Weaknesses in one or more of the scales include nonrepresentative standardization normative samples, low interrater reliability, and lack of evidence for diagnostic accuracy (Jarosewich et al., 2002).

Researchers from Duke University recently developed a new gifted rating scale, the *Gifted Rating Scales* (GRS), published by PsychCorp/Harcourt Assessment. The GRS was designed to meet an important need in the gifted field: a teacher-completed rating scale that complements the IQ test; is easy to administer and score; technically sound; based on a national standardization sample that matches the latest U.S. census in terms of race/ethnicity, parent education level, and regional representation; and reflects a multi-abilities conceptualization of giftedness (Pfeiffer & Jarosewich, 2003). The GRS was designed for screening giftedness, as well as a rating scale to accompany an IQ test, auditions, portfolio samples, and/or nonverbal tests as part of a full diagnostic battery. To ensure that it complements the IQ test, the GRS was co-linked during standardization with the standardization of the *Wechsler Intelligence Scale for Children*, 4th edition (WISC-IV) and Wechsler Preschool and Primary Scale of Intelligence, 3rd edition (WPPSI-III; Pfeiffer & Jarosewich, 2003).

The GRS test manual reports evidence of reliability and validity. For example, based on the standardization sample, GRS-S coefficient alpha reliabilities ranged from .97 to .99 and standard error of measurements ranged from 1.0 to 1.73 across the six scales and eight age ranges, 6:0–13:11 years. Test–retest reliability coefficients, based on a sample of 160 students and a median retest interval of 7 days, ranged from .83 on the Artistic Talent scale at age range 8:0–9:11, to .97 on the Academic Ability and Motivation scales at age range 12:0–13:11. Interrater reliability, based on a sample of 152 students rated by two teachers, ranged from .64 for Artistic Talent at age range 10:0–13:11 to .79 for Academic Ability at age range 6:0–9:11. The test manual also reports evidence in support of the internal structure and convergent and divergent validity (Pfeiffer & Jarosewich, 2003). More recent analyses of the standardization sample provide additional support for the validity of the GRS. For example, two studies report high diagnostic efficiency (test sensitivity and specificity) and a lack of bias in terms of race/ethnicity, gender, and age for the standardization sample (Pfeiffer & Jarosewich, 2007; Pfeiffer & Petscher, 2008).

The present study sought to expand upon existing research with the GRS-S, which documents the internal consistency and validity of the GRS-S standardization sample. The present investigation recruited a new, independent sample to cross-validate findings. The analyses described in this study have not been reported elsewhere. The present study is intended to extend the information reported in the test manual and elsewhere (e.g., Margulies & Floyd, 2004; Ward, 2005).

METHOD

Participants

Subjects consisted of 122 participants from two elementary and middle schools in the southeastern United States. The sample was 60% female (n = 73), 40% male (n = 49), with a mean age of 10.31 (SD = 2.06). Seventy-four percent of participants were Caucasian (n = 90), 14% were African American (n = 17), 7% were Asian American (n = 9), and 3% were Hispanic American (n = 4). Two individuals (2%) did not provide information relative to race/ethnicity. Parent education level of the cohort, a proxy for socioeconomic level, was similar to data gathered by the U.S. Bureau of Census (2000): 6% 0–8 years education; 13% 9–11 years; 28% 12 years; 53% 13 or more years.

Procedure

Written authorization was obtained from the university Human Research Subjects Institutional Review Board and the research committee of each participating school district. Principals were contacted in person, informed of the general purpose and procedure of the study, and invited to participate. Assessment packets including parent and teacher informed-consent forms and GRS-S record forms were delivered to each of the schools.

Teachers within the schools who agreed to participate were asked to identify students in their class who performed at one of five levels compared to their peers: (a) students who are performing *well above average* compared to other students; (b) students who are performing *above average* compared to other students; (c) students who are *average* performers compared to other students; (d) students who are performing *below average* compared to other students; and (e) students who are performing *well below average* compared to other students. Students nominated in each of the five categories were provided with a cover letter detailing the intended purpose of the study, a parent informed-consent form to bring home, and a student informed-assent form. The cover letter explained the nature of the study and that their son/daughter would not be tested or evaluated, but rather that the teacher would complete GRS-S ratings on their child. In any instance where parents did not authorize permission for their child to be included in the study, teachers were asked to nominate another student at the same performance level as the original student. Upon receipt of signed informed-consent and-assent forms, teachers were provided copies of GRS-S record forms to complete on the students.

Instrument

The Gifted Rating Scales (Pfeiffer & Jarosewich, 2003) includes a preschool/kindergarten form (GRS-P) for ages 4:0 to 6:11 and a school form (GRS-S) for ages 6:0 to 13:11. The

GRS-P consists of five scales with 12 items each for a total of 60 items; the GRS-S consists of six scales with 12 items each for a total of 72 items. The items of the GRS-P represent skills and behaviors developmentally appropriate for preschool and kindergarten students, whereas the items of the GRS-S reflect more developmentally advanced skills or behaviors. The GRS-S includes a sixth, leadership scale, which is not included in the GRS-P. Both forms yield raw score totals on all scales, which are converted to age-based *T* scores and associated cumulative percentages. The present study focuses exclusively on the GRS-S.

The GRS is based on a multidimensional model of giftedness that incorporates the Munich Model of Giftedness and Talent (Zigler & Heller, 2000) and the typology that appears in the U.S. Department of Education Report, National Excellence: A Case for Developing America's Talent (Ross, 1993). Below is a brief description of each of the six GRS-S scales:

1. *Intellectual ability*. This scale measures the student's verbal and/or nonverbal mental skills, capabilities, or intellectual competence. Items on this scale rate a student's abstract reasoning, problem-solving, mental speed, and memory.
2. *Academic ability*. This scale measures the student's skill in dealing with factual and/or school-related material. Items rate advanced competence and high levels of proficiency in reading, math, and other aspects of the school curriculum.
3. *Creativity*. This scale measures the student's ability to think, act, and/or produce unique, original, novel, or innovative thoughts or products. Items rate how a student solves problems, experiments with new ideas, formulates a solution to a group project, and/or uses imagination.
4. *Artistic talent*. This scale measures the student's potential for, or evidence of ability in, drama, music, dance, drawing, painting, sculpture, singing, playing a musical instrument, and/or acting. Items rate how a student approaches activities, completes assignments, and/or uses art supplies or artistic media.
5. *Leadership ability*. This scale measures the student's ability to motivate others toward a common or shared goal. Items rate a student's conflict resolution skills, initiative in group situations, and understanding of social dynamics and interpersonal communication.
6. *Motivation*. This scale refers to the student's drive or persistence, desire to succeed, tendency to enjoy challenging tasks, and ability to work well without encouragement or reinforcement. The motivation scale is not viewed as a type of giftedness, but rather as the dynamic energy that drives or impels a student to achieve.

Each item is rated by a teacher on a 9-point scale divided into three ranges: 1–3 (*below average*), 4–6 (*average*), and 7–9 (*above average*). The GRS-S manual provides a classification system that indicates not whether a student is gifted, but rather the *likelihood* that a student is gifted, based on the *T* score. The higher the student's *T* score on one or more of the gifted scales, the higher the probability that he or she is, in fact, gifted compared to same-age peers. The *T* scores were computed based on each age group and thus age-adjusted so that the classificatory ranges may be applied across age bands. A *T* score below 55

(below 69th percentile) indicates a low probability of gifted, a score between 55 and 59 (69th–83rd percentile) moderate probability, a score between 60 and 69 (84th–97th percentile) high probability, and a score above 70 (98th+ percentile) a very high probability.

Test development followed a carefully prescribed set of steps, including a survey of gifted experts, focus groups, and pilot and field testing. As mentioned earlier, standardization was co-linked with standardization of the new WISC-IV (and WPPSI-III in the case of the GRS-P). Final item selection was guided by factor structure, item mean scores, bias (parent education level, gender, and ethnicity), and interrater and test–retest reliability. For example, an original Intellectual Ability item, *asks probing questions*, was eliminated from the final version because it loaded on both the Intellectual Ability scale *and* Creativity scale.

As described earlier, the GRS test manual reports evidence of sufficient internal consistency and validity. The reader interested in more detailed information on the reliability, validity, and normative data is directed to a recent article that reviewed the GRS (Margulies & Floyd, 2004).

Data Analysis

Descriptive statistics for the full sample, as well as data concerning the gender, age, and race backgrounds were reported. Additionally, the coefficient alpha for each of the six scales was estimated. Finally, discriminant and criterion validity were tested by multivariate analysis of variance (MANOVA).

Since a number of the cells within certain subgroups were less than adequate for inferential testing (i.e., $n < 30$), aggregates were created to improve the power of the design and reduce the probability of violating statistical assumptions. To this end, the Asian-, African-, and Hispanic-American subgroups were combined to form a “minority” set that was compared to Caucasian students, increasing the number of minority participants to $n = 30$. Furthermore, multiple age groups were collapsed, resulting in three categories of age groups: 6- to 8-year-olds ($n = 22$), 9- to10-year-olds ($n = 44$), and 11- to 13-year-olds ($n = 54$). Although a degree of specificity may be lost by combining subgroups, greater inferences are achieved by keeping the original classes intact.

RESULTS

The present results indicated very high internal consistency indices for all six GRS scales. Coefficient alpha reliabilities ranged from .98 to .99. Table 1 presents internal consistency values along with the means and standard deviations for each scale. Additionally, the correlations among GRS-S scales are reported in Table 1. The highest correlation coefficient among GRS-S scale scores was between Intellectual Ability and Academic Ability ($r = .95$), with the lowest correlation between Artistic Talent and Leadership ($r = .66$). These findings were consistent with the internal consistency data reported for the standardization sample (Margulies & Floyd, 2004; Pfeiffer & Jarosewich, 2003; Pfeiffer & Petscher, 2008).

A 2 (Gender) × 2 (Race) × 2 (Age) between-groups MANOVA was utilized to analyze multivariate main effects. Preliminary analyses included testing of normality, homogeneity

of variance–covariance matrices, and presence of outliers. Data were distributed normally, evidenced by low skewness and kurtosis values (<1) as well as histograms that were normally distributed. Furthermore, the smallest cell sample size of $n = 22$ (i.e., 6- to 8-year-old) MANOVA is robust to violations of this assumption. Box's M tested homoscedasticity, with a nonsignificant p-value ($p = .055$) indicating the equality of the variances and covariances across groups. Outliers were tested with a Mahalanobis distance (D_m) test. Values were estimated for each of the groups, with a critical χ^2 value of 22.46 ($\alpha = .001$, $df = 6$) used to judge each of the identified outliers. The largest observed values for each of the subgroups were not larger than the critical χ^2 (males [$D_m = 23.53$], females [$D_m = 17.18$], non-minority [$D_m = 10.94$], minority [$D_m = 14.22$], age 6–8 [$D_m = 13.62$], age 9–10 [$D_m = 20.21$], age 11–13 [$D_m = 21.23$]), indicating that no multivariate outliers were present.

We expected that the GRS-S would not discriminate by gender, race, or age group, signifying that it provided an unbiased assessment of giftedness across important dimensions. The multivariate main effect for gender was not statistically significant, Wilk's lambda = .90, $F(6, 103) = 1.96$, $p > .05$, $\eta^2 = .07$. Descriptive statistics for each GRS-S scale by gender, race, and age are presented in Tables 2, 3, and 4, respectively. The scale scores for girls and boys were generally equivalent. The largest gender difference was on the Motivation scale (girls $M = 58.37$ vs. boys $M = 51.86$); this 6.5-point difference in favor of females indicated moderate practical importance ($d = .51$). This finding should be interpreted cautiously since the multivariate effect was nonsignificant, indicating that protected testing was not apparent. Other nonsignificant differences by gender ranged between 1.3 points and 3.8 points, all in favor of females. The MANOVA comparing GRS-S scales based on race also did not yield significant results, Wilk's lambda = .97, $F(6, 103) = .58$, $p > .05$, $\eta^2 = .03$.

Consistent with the results for gender and race, the multivariate main effect for age was not statistically significant, Wilk's lambda = .95, $F(12, 206) = .79$, $p = .02$, $\eta^2 = .09$. Finally, the MANOVA did not reveal any significant interaction effects for gender by race (Wilk's lambda = .95, $F(6, 103) = .97$, $p > .05$, $\eta^2 = .05$), gender by age (Wilks lambda = .94, $F(12, 206) = .60$, $p > .05$, $\eta^2 = .03$), race by age (Wilk's lambda = .44, $F(12, 206) = .85$, $p > .05$, $\eta^2 = .12$), or gender by race by age (Wilk's lambda = .96, $F(12, 206) = .36$, $p > .05$, $\eta^2 = .02$).

We ran two sets of secondary analyses to test whether GRS-S provides an unbiased assessment of giftedness with respect to (a) the length of time that teachers have known the student, and (b) how well they know the student that they are rating. The GRS-S Record Form collects information on these two questions, "How long have you known the child?" and "How well do you think you know the child?" Options for responding to these two questions on the Record Form range between "*1–3 months*" to "*over 1 year*" for the first item and "*not well*" to "*very well*" for the second item. The multivariate main effects for the length of time, Wilk's lambda = .94, $F(18, 295) = .38$, $p > .05$, $\eta^2 = .02$, and how well they have known the child, Wilk's lambda = .84, $F(12, 208) = 1.58$, $p > .05$, $\eta^2 = .08$, were not significant. As expected, the multivariate interaction effect between these two variables, Wilk's lambda = .86, $F(18, 295) = .86$, $p > .05$, $\eta^2 = .05$, was also not significant. The results indicated that teacher ratings using the GRS-S are not adversely impacted by either

how long (or brief) a period of time or how well (or unfamiliar) the teacher might know the student.

DISCUSSION

The present study investigated the internal consistency and validity of a new teacher rating scale designed to identify gifted students, the GRS-S. The study explored the possible effect of gender, race/ethnicity, age, and rater familiarity with the student on GRS-S ratings with a sample of 122 students in the first through eighth grade in the southeastern United States. The cross-validation study was designed to extend the information reported in the test manual and elsewhere (e.g., Margulies & Floyd, 2004; Pfeiffer & Jarosewich, 2007).

The results of this study are consistent with analyses conducted with the standardization sample. Coefficient alpha reliabilities for the present sample ranged from .98 to .99 for the six scales. Coefficient alpha reliabilities for the standardization sample ranged from .97 to . 99 (Pfeiffer & Jarosewich, 2003). The present findings reaffirm that the GRS-S scales have excellent internal consistency.

Evidence of validity based on internal structure was examined by exploring intercorrelations among the six GRS-S scales. Intercorrelations were moderate to high, ranging from .66 between Artistic Talent and Leadership to .95 between Intellectual Ability and Academic Ability. Very similar patterns of interscale correlations were found with the standardization sample, ranging from .45 between Artistic Talent and Leadership to .95 between Intellectual Ability and Academic Ability (Pfeiffer & Jarosewich, 2003).

The pattern of intercorrelations is consistent with a multidimensional conception of giftedness with an underlying general ability *g* common factor (Gottfredson, 1997; Jensen, 2004).

Alternatively, the high correlation coefficients among the GRS-S scales may be the result of a halo effect influencing teacher ratings. In other words, it is possible that the teacher's overall view of the child's ability (*g*) influences how they view other GRS-S domains. For example, motivation correlated .87 with Intellectual Ability and .89 with Academic Ability. These correlations are unusually high given that there is limited empirical support for high correlations between cognitive abilities and motivation (Gagné & St. Père, 2001). Conversely, the particularly high correlation between the Intellectual Ability scale and the Academic Ability scale (.95) is consistent with previous findings of very high correlations between measures of ability and measures of academic achievement in the general population (Sattler, 2001; Wechsler, 2003). Item-level factor analysis of the standardization sample found that items on the Intellectual Ability and Academic Ability scales loaded on one principle factor, with all Intellectual Ability items loading consistently about the Academic Ability items (Pfeiffer & Jarosewich, 2003). Many argue that Intellectual Ability and Academic Ability represent a similar if not identical underlying general ability *(g)* common factor (Carroll, 1993; Flanagan, McGrew, & Ortiz, 2000; Jensen, 2004). With a correlation of .95, these two GRS-S scales have 90% shared variance. Future factor analytic studies employing large samples would provide further insights into the relationship among

the GRS-S scales and provide valuable insights into the multidimensional model of giftedness.

It was encouraging that the present cross-validation study did not find any differences for gender, race, or age. This finding provides additional support for the validity of the GRS-S. The gifted field has been concerned, as it should be, with fair and equitable gifted identification practices. There is a history of underrepresentation of African-, Hispanic-, and Native-American students in gifted education programs (Barona & Pfeiffer, 1992; Ford, 1998; Ford & Whiting, 2008; Naglieri & Ford, 2003; Pfeiffer, 2002). When used as either a first-stage screening rating scale or as part of a complete diagnostic battery, the GRS-S holds great promise in identifying any student who has a high or very high likelihood of being gifted.

We ran a set of secondary analyses to examine whether how long a teacher knows the student and/or whether how well a teacher knows the student might influence ratings. Results confirmed that neither length of time in the classroom ("*1–3 months*," "*4–6 months*," "*7–12 months*," or "*over 1 year*") nor familiarity with the student ("*not well*," "*fairly well*," or "*very well*") biased teacher ratings. This finding may seem counterintuitive; one might suspect that a teacher would feel more confident rating a student after extensive time and familiarity with the student. This issue warrants further exploration. One implication of this finding is that teachers may be able to screen students for gifted identification early in the school year. School psychologists and gifted consultants may not have to wait until well into the school year before asking teachers to complete a GRS-S on one or more students in the classroom. This would make gifted screening early in the school year a real possibility. However, this unanticipated finding merits further investigation before any change in policy regarding early screening is considered by a school district.

The study is not without limitations. The correlations between ratings are not uncorrelated to levels of academic achievement. Since students were nominated by teachers based on an achievement-level rubric, the relationships among scales may be influenced by selection effects. The small sample of Asian American (n = 9), African American (n = 17), and Hispanic-Latino (n = 4) students forced us to combine these three groups into one "minority" cohort. If we had obtained a larger sample for our minority groups (n = 30 per group), we would have expected a relatively small effect (f^2 = 0.06; (α = 0.05, 1–β = 0.80. Future research would benefit from recruiting a larger sample of students, including a larger group of students from different ethnic/racial groups. Also, the sampling procedure should either be random or according to stratification across ability levels that is independent of teacher nominations.

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Table 1

Descriptive Statistics and Correlations for GRS-S Scale Scores

	Intellectual	Academic	Creativity	Artistic	Leadership	Motivation
Intellectual	1.00					
Academic	.95	1.00				
Creativity	.88	.86	1.00			
Artistic	.78	.76	.85	1.00		
Leadership	.72	.74	.72	.66	1.00	
Motivation	.87	.89	.78	.72	.79	1.00
Mean	55.57	55.61	56.05	56.88	53.91	55.75
SD	12.84	12.10	12.63	13.30	12.07	12.67
α	.99	.98	.98	.99	.98	.99

Table 2

Mean Scores and Standard Deviations for GRS-S Scale Scores by Gender

	GRS Subtests											
	Intellectual		Academic		Creativity		Artistic		Leadership		Motivation	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Girls (*N* = 73)	56.77	11.98	56.49	11.06	56.58	11.73	58.11	13.33	55.40	11.36	58.37	10.69
Boys (*N* = 49)	53.80	13.96	54.31	13.52	55.27	13.03	55.04	13.15	51.69	12.85	51.86	14.40

Table 3

Mean Scores and Standard Deviations for GRS-S Scale Scores by Race/Ethnicity

	GRS Subtests											
	Intellectual		Academic		Creativity		Artistic		Leadership		Motivation	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Asian American (*N* = 9)	61.44	11.44	62.53	11.66	61.89	10.90	64.11	11.94	58.11	8.37	61.11	9.96
African American (*N* = 17)	56.29	8.14	55.47	6.81	57.01	7.62	58.82	9.68	54.06	9.76	58.41	6.32
Hispanic American (*N* = 4)	57.50	12.29	58.75	12.29	57.00	12.52	52.75	6.95	49.50	11.82	55.25	14.64
Caucasian (*N* = 90)	54.69	13.80	54.83	12.82	55.10	13.07	55.91	14.16	53.71	12.90	54.67	13.68

Table 4

Mean Scores and Standard Deviations for GRS-S Scale Scores by Age Group

Intellectual	Academic		Creativity		Artistic		Leadership		Motivation			
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
6:00–6:11 (*N* = 3)	65.67	6.11	66.33	8.33	70.00	9.54	66.00	4.00	71.33	3.06	64.67	11.02
7:00–7:11 (*N* = 7)	66.14	7.97	67.00	5.39	65.86	10.04	71.43	8.26	62.29	9.21	65.71	4.89
8:00–8:11 (*N* = 12)	63.75	9.66	62.33	9.10	66.83	7.98	68.75	9.73	57.75	11.42	58.00	12.28
9:00–9:11 (*N* = 32)	57.06	10.68	56.97	10.25	57.12	9.14	56.44	11.82	54.97	10.81	56.44	11.56
10:00–10:11 (*N* = 12)	57.67	14.28	57.42	13.05	58.08	12.77	60.25	14.61	53.92	10.56	58.25	12.67
11:00–11:11 (*N* = 17)	55.88	14.15	54.71	13.94	57.35	14.32	58.94	15.32	53.82	14.92	56.41	15.10
12:00–12:11 (*N* = 7)	50.14	11.77	48.71	10.39	45.29	10.96	46.57	10.49	48.43	9.93	55.00	12.49
13:00–13:11 (*N* = 32)	48.00	12.18	49.56	11.61	48.37	9.44	48.72	8.60	53.91	12.07	55.75	12.67