Development of the General Affective Well-being Scale (GAWS)

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The General Affective Well-Being Scale, GAWS is designed to assess people's experience of negative and positive emotions. It is based on the Job-related Affective Well-being Scale, JAWS (Van Katwyk et al., 2000) designed to assess people's emotional reactions to their job. Each item of the GAWS is an emotion, and respondents are asked how often they have experienced each over the prior 30 days. The time frame can be adjusted to assess momentary emotions ("how do you feel now") or other timeframes that are shorter (e.g., week) or longer (e.g., year). Responses are made with a five-point scale with time-specific anchors *Never*, *Once or twice*, *Every week*, *A few times per week*, *Every day*. Less time-specific anchors can also be used, such as *Never*, *Rarely*, *Sometimes*, *Quite often*, *Extremely often or always*. The GAWS includes a wide variety of emotional experiences, both negative and positive. The emotions can be placed into four categories (subscales) that fall along two dimensions: pleasurableness (negative vs. positive emotion) and arousal (low vs. high intensity). The scale can be scored in three ways. 1, An overall score of all items with the negative emotions reverse scored; 2, Separate scores of all 10 negative or positive items combined separately without reverse scoring; 3, Four scores matching the above four categories containing 5 items each (see tables below).

The emotion items for the scale are the same as the JAWS with instructions to respond about emotional experiences in general and not for the workplace.

Reliability

Psychometric properties were tested in a sample of 766 college students recruited from a psychology department subject pool. Approximately 26% of the sample were male, 74% female and 10 respondents did not indicate gender.

Internal consistency reliability estimates (coefficient alpha) are shown in Table 1 for the 7 scores that can be derived from the GAWS. Sample sizes varied slightly from 762 to 765 due to a few missing items.

Table 1. Internal Consistency Reliability of the GAWS

GAWS subscale	Coefficient Alpha
Total GAWS (all 20 items)	.89
Negative emotion	.85
Positive emotion	.91
Negative high arousal	.76
Negative low arousal	.77
Positive high arousal	.89
Positive low arousal	.89

Correlations among the GAWS scales are shown in Table 2.

Table 2: Correlations Among GAWS Subscales

Subscale	1	2	3	4	5	6
1 Total GAWS						
2 Negative	-.79					
3 Positive	.84	-.34				
4 Negative high	-.68	.90	-.26			
5 Negative low	-.77	.93	-.36	.67		
6 Positive high	.69	-.20	.90	-.10	-.39	
7 Positive low	.82	-.41	.90	-.36	-.36	.61

Norms

Means and standard deviations are shown in Table 2 for the psychology sample and can serve as preliminary norms for the GAWS. As can be seen, mean scores for positive emotions are higher than for negative emotions. Mean scores for low arousal emotions are higher than for high arousal emotions within the same emotion direction of negative or positive.

Table 3: Means and Standard Deviations for the GAWS Scales

JAWS scale	Mean	Standard deviation
Total GAWS (all 20 items)	67.1	12.8
Negative emotion	25.5	7.4
Positive emotion	32.6	8.3
Negative high arousal	11.4	3.7
Negative low arousal	14.1	4.3
Positive high arousal	15.3	4.6
Positive low arousal	17.3	4.6

Validation Evidence

Factorial validation evidence is provided by a confirmatory factor analysis (CFA) conducted using LISREL 10.2. An oblique solution was incorporated by allowing factor intercorrelations to be estimated. A four-factor solution matched the four-subscale scoring of the GAWS. Fit statistics showed adequate fit with X^2 (164) = 931.8, p < .001, RMSEA = .078, CFA = .91. For the two-factor solution in which both negative subscales were combined and both positive subscales were combined, fit was considerably worse: X^2 (169) = 2019.0, p < .001, RMSEA = .12, CFA = .77. This is not surprising since the high versus low arousal items form separate internally consistent subscales. Despite this marginal fit, both subscales had good internal consistency reliability, as shown in Table 1.

Predictive validity data were collected by including measures that are reflective of negative and positive well-being, and thus should be related to emotional experience. Included were measures of trait negative affectivity using the 10-item scale from IPIP (Goldberg et al., 2006), life satisfaction (Diener et al., 1985), physical health symptoms (Spector & Jex, 1998), and self-efficacy (Schwarzer & Jerusalem, 1995). As can be seen in Table 3, the GAWS correlated significantly with all four of these scales. Negative emotions correlated more strongly with indicators of negative well-being, specifically, negative affectivity and physical symptoms. Positive emotions correlated more strongly with indicators of positive well-being, specifically life satisfaction and self-efficacy.

The correlations of the high versus low arousal subscales within each emotion direction show some fairly large differences. For five of the eight comparisons of the different arousal level scales within emotion direction the correlations are significantly different statistically using a t-test for dependent correlations. For example, the correlation of negative emotion high arousal with life satisfaction (-.32) was significantly smaller than

the corresponding correlation for negative emotion low arousal (-.49). These results, in combination with the CFAs, support using the more precise subscales as opposed to combining them into overall negative and position emotion scales.

Table 4. Correlations of the GAWS with Four Criteria

GAWS scale	Negative affectivity	Life satisfaction	Physical symptoms	Self-efficacy
Total GAWS (all 20 items)	-.71	.61	-.52	.49
Negative emotion	.67	-.45	.60	-.32
Positive emotion	-.50	.54	-.27	.48
Negative high arousal	.61	-.32*	.51*	-.28
Negative low arousal	.62	-.49	.58	-.30
Positive high arousal	-.33*	.44*	-.14*	.42
Positive low arousal	-.55	.53	-.33	.44

Note: All correlations statistically significant at p < .05; n = 762-765
*Correlation significantly different from low arousal counterpart.

Scoring Instructions

The GAWS has items that reflect both negative and positive emotions. For the total scale, the negative emotion items must be reverse scored before summing with the oppositely worded items. For the finer-grained subscales, no reversal is necessary.

1. Responses to the items should be numbered from 1 representing least often to 5 representing most often experience of each emotion. This assumes that the scale has not been modified to have other than 5-choice response anchors.

2. The negative emotions should be reversed **only** to compute the total score. Below are the reversals for the original item score in the left column and reversed item score in the right. The rightmost values should be substituted for the leftmost. This can also be accomplished by subtracting the original values for the internal items from 6.

1 = 5

2 = 4

3 = 3

$4 = 2$

$5 = 1$

3. Negative emotions are items 1, 2, 4, 7, 8, 9, 14, 15, 16, 17. These should be reversed if combined with the positive emotion items to create the overall well-being score.

4. The GAWS can be scored in three ways. a: For the total score, sum responses to all 20 items after the reversals from step 2. All positive and all negative items can be summed to create overall positive emotion and overall negative emotion subscales. 3. The table below shows which items are used to create the four subscales, dividing both positive and negative emotions (negative versus positive) into high and low arousal.

5. If some items are missing you must make an adjustment otherwise the score will be too low. The best procedure is to compute the mean score per item for the individual, and substitute that mean for missing items. For example, if a person does not make a response to 1 item for a subscale, take the total from step 4, divide by the number answered, and substitute this number for the missing item by adding it to the total from step 4. An easier but less accurate procedure is to substitute a middle response for the missing items. Since the center of the scale is 3, that number could be used.

Subscale Scores

Only five items are used for each of the four subscales, and they are not reversed. The items for each subscale are shown in the table and should be summed to compute each score.

GAWS Scale	Item numbers	Emotions
Negative-High arousal	1, 2, 9, 15, 16	Angry, Anxious, Disgusted, Frightened, Furious
Negative-Low arousal	4, 7, 8, 14, 17	Bored, Depressed, Discouraged, Gloomy, Fatigued
Positive-High arousal	10, 11, 12, 13, 18	Ecstatic, Energetic, Enthusiastic, Excited, Inspired
Positive-Low arousal	3, 5, 6, 19, 20	At-ease, Calm, Content, Relaxed, Satisfied

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