Running head: Taiwanese DAS

Title: The Taiwanese Derriford Appearance Scale: the translation and validation of a scale to measure individual responses to living with problems of appearance.

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Abstract

Background

The extent of concern about physical appearance is increasingly the subject of scientific study, interventions by health professionals, and media attention. To enable carefully evaluated studies exploring the psychosocial antecedents of appearance distress, and to determine the success of interventions, the Derriford Appearance Scale 24 (DAS24) was developed (Carr, Moss, & Harris, 2005). This psychometrically sound measure is well used and cited in the appearance psychology field. Outside of a Western context, the extent and impact of appearance distress is less well known. This paper describes the adaptation of the DAS24 for use in Taiwan.

Method

A formal translation protocol was followed to adapt the DAS24 into Taiwanese/Cantones. Two hundred and eight participants from a general population and a visibly different population were recruited in Taipei, Taiwan. These participants completed a test pack administered comprising the translated DAS24, and established measures of anxiety and depression. The scale was analysed on the basis of classical test theory.

Results and Discussion

A translated DAS Scale comprising 19 items and including three clear factors was the best solution. The scale had good internal consistency, clear convergent validity, and good test-retest reliability. The three factors which emerged were appearance related social avoidance, social distress, and negative affect. Consistent with expectations, (i) women scored higher than men (greater appearance distress), (ii) the cause of appearance difference (burns, cleft lip/palate, et cetera) was unrelated to appearance distress, and (iii) those with visible differences were more concerned about their appearance than those without.

Conclusion

The Taiwanese DAS19 is a user-friendly and psychometrically sound scale which fulfils an important clinical and scientific need. The items which were omitted from the translated version were considered in relation to cultural differences in the experience and expression of shame between Western and Taiwan/China, which demands a careful future analysis.

Introduction

Physical attractiveness has been clearly identified in the psychological and sociological literature as being a key determinant of the way in which we are valued and evaluated by

others. It has been identified to be predictive of success across a range of life domains. The extent to which striving towards idealised facial and bodily appearances, particularly slenderness for women and muscularity for men, is both prevalent and related to mental (ill) health outcomes is increasingly apparent. For those with an appearance outside the normal range, who may be considered to be "disfigured" or visibly different, the psychological and social issues are compounded by social stigma, being avoided, and being subject to a host of negative stereotypes. Individuals with visible differences are subject to stares, whispers, spontaneous questioning, and other negative social reactions. The stress, shame, and anxiety of living with visible differences has been well documented, as has social avoidance and social withdrawal (cf. Rumsey & Harcourt, 2012, for a comprehensive overview of the appearance and visible differences literature from a psychological perspective).

Despite widespread difficulties often associated with living with differences of appearance, it is clear that these difficulties are not universal. Crucially, neither are they related to objective physical characteristics such as the severity, or the cause of the visible difference (Moss, 2005). The causes of individual differences in psychosocial adjustment are clearly in the psychological realm, and include cognitive processes – such as coping appraisal, the structure and content of the self schema, and attentional biases – as well as social processes, such as the internalisation of cultural norms and appearance ideals (Moss & Rosser, 2012).

Treatment for burns, cancer, and other medical conditions has paid attention to patients' psychosocial appearance issues with varying degrees of emphasis depending on the country and culture of treatment as well as the specific condition itself. In the UK, there is an increasingly well identified, and often met need for psychological support for patients with visible differences such as cleft lip/palate (Norman et al., 2014) and burns (Kalson, Jenks, Woodford, Lecky, & Dunn, 2012).

When care is resource intensive, as it always is, it is important to be able to identify "what works" in patient care. This will enable care providers to direct care at the most needy. It will also facilitate tracking of individual patient progress over time. When psychosocial adjustment can be measured, it enables clinicians to be able to determine the effectiveness of treatment, and researchers to better identify those psychological factors most likely to be

amenable to future interventions. In order to predict individual adjustment, it is important to have a sound assessment tool.

To this end, Harris & Carr (2001) and Carr, Moss, & Harris (2005) developed the Derriford Appearance Scale. This is a psychometrically sound measure of psychological adjustment to living with differences of appearance, which has been widely adopted in the clinical and academic fields of appearance research and intervention. This scale has demonstrated very good reliability and validity. It has been used in the general population who report no appearance concerns, the general population with appearance concern and clinical population with appearance problems and visible differences. Two versions of the scale exist- a short 24 item version and a more complex, factorial 59 item version intended for research and in depth psychological assessment of individual patients. It has been successfully translated into a range of languages other than English, including Asian languages such as Nepali (Singh, Singh, Moss, Roy, & Baral, 2013) and Japanese (Nozawa et al., 2008) and European languages including Italian (Moss, Cogliandro, Pennacchini, Tambone, & Persichetti, 2014) and Danish (Matthiessen et al., 2012). These translations have been used to identify change in appearance concern in relation to psychological and medical intervention in the countries concerned, which hitherto has not been possible in Taiwan.

In 1995, Taiwan formed the National Health Insurance (NHI) model to reform healthcare delivery. However, in Taiwan, the needs of patients with visible differences are often met through charitable organisations such as the Sunshine Social Welfare Foundation (SSWF) in Taipei in addition to state sponsored providers. The SSWF supports the clinical and psychological care of patients with burns and other appearance altering conditions.

In Taiwan, the extent of distress caused by self-consciousness of appearance and related to visible differences has not been calculated – in part due to the lack of an established outcome measure as well as the absence of any central system for reporting clinical performance or patient outcomes. The extent of met need can be estimated given the number of beneficiaries of the Psychosocial Rehabilitation (Social work services, psychological counselling, and social participation interventions) at the Sunshine Social Welfare Foundation. In 2013, 751 new clients benefited from services of Sunshine Foundation and social workers worked with a total of 2,236 clients in total. However, this does not indicate the extent of unmet need –

those who are experiencing distress, yet are unable to access support or help, and so is at the lowest end of the estimation of genuine psychosocial need.

There is currently no psychometrically sound measure available in the local language to support and investigate clinical intervention in visible differences in Taiwan. The aim of this study was to conduct a translation and psychometric validation of the Derriford Appearance Scale (short version) into Taiwanese. This will enable the collection of epidemiological data, to evaluate individual and group change over time, to investigate the effectiveness and efficacy of interventions, and to conduct research into factors determining successful outcomes.

Methods

Participants

Participants were 208 people who were either current or former service users of the SSWF charity in Taiwan (107) or a non-clinical/not visibly different Taiwanese sample comprised of donors to the charity or family members of service users (66% females, age ranging from 19 to 80 years; Mean = 41.3 years, SD = 12.3 years). Around three quarters of the sample (74%) was employed, 52% lived with a spouse or partner, 12% lived alone, and the remainder with other family or friends. All in the service user group were identified by SSWF staff as having an objectively identifiable visible difference.

Data were initially collected from 238 participants, of whom 107 were identified as "visibly different". Incomplete booklets, in which participants had omitted at least 25% of items on the primary measure (DAS24) were omitted from further analysis, thus resulting in a final sample of 208 participants, of whom 84 were identified as visibly different. These data were effectively intact, with <1% missing and therefore representing a usable dataset (Dong & Peng, 2013).

Measures

In addition to the Derriford Appearance Scale, the research protocol included measures of anxiety and depression. The Chinese-Cantonese version (Leung, Wing, Kwong, Lo, & Shum, 1999) of the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) was

used for assessing anxiety and depression symptomatology. The HADs is a well-established psychometrically sound scale consisting of 14 items. Anxiety and depression are assessed on independent sub-scales, based on self-report of symptomatology over the previous week. Each item has idiosyncratic, tailored response categories with individual item scores of 0-3, resulting in scores from 0-21 for each of anxiety and depression. The Chinese Cantonese HADS has published internal consistency, as assessed by Cronbach's alpha of .86 for the full scale, .82 for the depression subscale and .77 for the anxiety subscale.

Procedure

The present study was reviewed and approved by the Ethical Committee of the University of the lead author.

The DAS24 is copyright protected, and the translation procedure to be followed is described in the developer's website (www.derriford.info). First, permission was taken regarding translation from the developer then the tool was subjected to analysis of conceptual, semantic and society equivalence. This was done by a development group comprising of the original developer, a health psychologist, clinical staff at the Sunshine Social Welfare Foundation, and members of the target population.

Standard translation-back translation procedure was followed. Initial translation was made by a native Taiwanese speaker with a good command of English. The back translation was made by a native English speaker with a good command of Taiwanese. Several iterations of this process were repeated until an agreed version of the scale was created. This version was compared with the original translation for conceptual and semantic equivalence and with discussion with group members and translators, the final version was made. This final version was then pretested in the target population, in the Sunshine Social Welfare Foundation. Using a cognitive debriefing technique (Willis, 2005), in which participants reflect upon the response process, and their comprehension and judgments about the items, we asked each individual to read each item and try to explain to the interviewer about their interpretation of that question. We asked each individual to read each item and try to explain the interviewer about their interpretation of that question. There were no confusing items and the participants were readily able to understand all items and thus the Taiwanese version was ready for

evaluation. The scale was administered to participants face to face on the premises of the Sunshine Social Welfare Foundation, or by post to the non-clinical sample.

Statistical analyses

The statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) version 20.0. Principal Component Analysis (PCA) was conducted for exploring the factorial structure of the DAS items. Criteria to assess the factorial structure of the questionnaire included three criteria: (a) Kaiser-Meyer-Olkin's (KMO) index, and the Bartlett's test; (b) the Scree Test (Cattell, 1966); and (c) interpretation of the obtained factor structures (Gorsuch, 1983). Internal consistency (Cronbach's alpha and corrected item-total correlations) were also calculated.

Differences between males and females on DAS scores were investigated through independent t-tests. Pearson's correlations were used for examining relations of the DAS scores with age, anxiety, and depression. Independent t-tests and analysis of variance were used to compare groups according to visibly different/not different, and diagnostic (causal) category within the visibly different group.

Results

Item inclusion in total scale score

Visual examination was carried out on frequency distributions of scores on each item, for the visibly different, non-visibly different, and total sample. Positive skew (floor effects) were present in three items at a level which suggested they be removed from further analysis – items 14, 17, and 22 ("How rejected do you feel?", "I close into my shell", and "I avoid going out of the house."

Corrected item total correlations were calculated for the remaining items, for each sample separately and the total sample. Items 1 ("How confident do you feel") and item 8 (How feminine/masculine do you feel?) correlated $r < .3$ and so was omitted from further analysis, resulting in a 19 item scale; all other items correlated $r > .4$. Item-total correlations for the final 19 item scale are shown in Table 1. Cronbach's alpha for the 19 item scale was .91.

The histogram of the total score demonstrates close approximation to a normal distribution (skewness = 0.44, standard error of skewness = 0.17, kurtosis = 0.36, standard error of kurtosis = 0.35), and shown in Figure 1.

Figure 1 about here

Test-retest reliability

To assess test-retest reliability, 45 participant service users from the Sunshine Welfare Foundation (mean age 46 years, standard deviation 12.1 years) from the initial sample were randomly selected and were approached again after four weeks to complete the DAS only, of whom 38 (84%) provided complete data. Pearson correlation was calculated, demonstrating excellent test-retest reliability of r = .88.

Factor structure

Kaiser-Meyer-Olkin's (coefficient = .91) and the Bartlett's tests ($\chi 2$ = 1573.6, df = 171, $p \leq$ .001) indicated that the data were suitable for performing factorial analyses. For KMO, values above .9 are "superb" (Hutcheson & Sofroniou, 1999).

Solutions of two and three factors were successively tested. The 2-factor solution accounted for 48 per cent of the variance, but was difficult to interpret. The 3-factor solution accounted for 55 per cent of the total variance. In the 2-factor solution three items showed high loadings on more than one factor, but only two items loaded on more than one factor in the 3-factor solution. Every item presented salient loadings ($\geq$ .38) on the relevant extracted factor. Oblimin and varimax rotations yielded essentially similar factorial structures with little difference in item loadings. As expected (cf. Carr, Harris, & James, 2000) the three factors correlated positively with each other with medium effect size (r in the range .34 to .41) Consequently, results from the oblimin rotation are shown in Table 1.

Table 1 about here

Validity

To determine criterion validity, Pearson correlations were carried out with HADS anxiety and HADS depression scores. HADS anxiety demonstrated an internal reliability of Cronbach's alpha = .84. HADS depression demonstrated an internal reliability of Cronbach's alpha =

.58. We hypothesised that the relationships between DAS19 and both anxiety and depression would be stronger in the visibly different group compared to the non-visibly different group, and that anxiety and depression would be similarly related to each other in both groups. The pattern of correlations was consistent with the prediction. DAS19 correlated with anxiety ($r = .56$, $n = 76$, $p < .01$) and with depression ($r = 39$, $n = 76$, $p < .01$) in the visibly different group, and with anxiety ($r = .52$, $n = 122$, $p < .01$) but not depression ($r = .09$, $n=122$, ns) in the non-visibly different group. Anxiety and depression correlated with each other at $r = .47$ ($n=76$, $p < .01$) in the visibly different group, and similarly in the non-visibly different group ($r = .45$, $n=122$, $p < .01$).

Relation of DAS19 total and factor scores with demographic characteristics

Older age was related to lower total scores and less social distress, but unrelated to social avoidance or self-focussed distress (see Table 2). Scores from male and females were compared for each of the factors and the total DAS19 score. There was no significant difference between these groups other than for social distress, in which women scored higher than men, indicating more social distress (mean = 14.6, sd = 5.8 for women, mean = 12.3, sd = 5.6 for men, $F(1,188) = 6.5$, $p < .05$). Mean and standard deviations for the different ethnicities participating in the work were calculated, and presented in Table 3. The DAS19 total and factor scores were significantly higher (indicating more distress/avoidance) for the visibly different group compared to the non-visibly different group as shown in Table 4.

Tables 2 3 and 4 about here

Amongst the visibly different group, it was possible to categorise the cause of the visible difference as falling into one of the following groups where data were available: burn (35), cleft lip/palate (8), haemangioma (5), neurofibromatosis (11), oral cancer (14), and other (4). There were no significant differences between these groups in the total or factor scores.

Discussion

This study set out to produce a psychometrically sound version of the Derriford Appearance Scale, suitable for a native Taiwanese population. The analysis of 208 participants in a mixed clinical/non-clinical sample demonstrated a robust 19 item version of the scale, comprising a total score, and three distinct factors. Criterion validity was demonstrated by

positive moderate correlations with established Taiwanese translations of established measures of anxiety and depression, which were of similar magnitude to the correlations with these constructs in the original English language version. Internal validity of the scale was high, item-total correlations were appropriate, and the 1 month test-retest analysis demonstrated stability over time similar to the UK sample.

Factor structure

Unlike the original DAS24, the Taiwanese DAS19 also demonstrated a factor structure comprising three moderately correlated, yet conceptually distinct factors. These were described as appearance related self-conscious avoidance, social distress, and negative affect. The self-conscious avoidance factor represents a well-established domain of coping with visible differences, and was not surprising. It relates to avoidance of behaviours and situations in which self-consciousness of appearance is elicited or likely to be elicited. Similarly, the "social distress" factor is again highly consistent with previous work with the longer version of the DAS. It reflects the emotional experience of anxiety and distress elicited in social situations –The third factor, general negative affect, is represented in the longer version of the DAS (the DAS 59, Carr, Harris & James, 2000), and reflects a more diffuse level of emotional difficulty.

It is worth giving consideration to the items which, despite surviving multiple iterations of statistical filtering in UK and other samples, did not perform similarly in this Taiwanese sample. It is possible that they performed differently due to random variation. However, it is also possible that these items have a different cultural significance in Taiwan compared to previous evaluations of the DAS. Three of the items – around feeling rejected, feeling confident (reverse scored) and "closing into my shell" are items which previously have correlated highly with shame. It is worth considering that shame may manifest differently in Taiwan compared to the West – either as a less individualised construct, or one less easily declared. Four types of shame emotion have been identified in Chinese/Taiwanese settings (Bedford & Hwang, 2003). "Xiu chi" is the strongest of these shame emotions. It is literally the feeling of having a stain on one's face, and being inadequate as a human being. It has been associated with social avoidance and fear of discovery by others that one is a defective person. The collectivist Taiwanese culture means this is even more significant than in Western cultures, as the self-concept is best seen as relational. When the relational self-concept is threatened, there is associated threat to the identity of those beyond the individual

subject to the immediate threat. Xiu chi can be contrasted with other shame based emotions. Xiu kui, like xiu chi, involves a negative self evaluation. However, in this case, the emotion is private and experiencing it need not involve others. However, it does include an acceptance of the self as having transgressed a moral or social rule in relation to others, which has harmed them. "Can kui" is a less powerful shame emotion, and associated with the sense of personal failure through inaction. "Diu lian" describes a loss of dignity, having failed to live up to others' ideals. This sophisticated cultural model of shame is not shared in Western societies, where less granular approaches are prevalent.

The items rejected from the DAS19, which were present in the DAS24 were all items that in a UK sample correlated with the Internalised Shame Scale (Cooke, 1998) in the initial DAS validation. It is likely that this cultural differentiation about shame is not reflected in the DAS24, and hence the difficulty with these items in the DAS19. It does mean that it is likely that additional work is required to develop a culturally appropriate appearance shame scale, which can differentiate between experiences of xiu chi, xiu kui, can kui, and diu lian in those with visible differences. Furthermore, it would be valuable to evaluate the DAS19 in mainland China, initially using qualitative interviews to explore the meanings of items and the related constructs from this additional perspective.

Marked differences were observed in the correlations between DAS19 in the visibly different compared to non-visibly different samples. In both groups, a strong relationship was found with anxiety. Depression only correlated with DAS19 scores in the visibly different group, and not in the non-visibly different group. This suggests a subtle difference in the manifestation of appearance self-consciousness in the two groups. The anxiety correlation represents an underpinning notion of threat in relation to appearance in both samples. However, the depression correlation, present only in the visibly different group, suggests an aspect of loss or rumination about loss as also comprising part of the appearance adjustment construct in this sample. This is logically consistent with the nature of the cause of appearance differences in this group, who have indeed lost an earlier aspect of their appearance – and arguably, an aspect of the self - through disease, injury, or other fundamental physical change. The non-visibly different group, while potentially finding social situations threatening, have not had to come to terms with the same loss. While appealing, this argument can only be considered speculative as this finding is not that which is observed in a Western population. It is feasible that the scale is identifying an aspect of

Xiu chi, a culturally specific concept. Clearly, more exploratory work is required to unpick the nature of appearance adjustment in a Taiwanese visibly different population.

There are a number of methodological issues which impinge upon this work and could be addressed in further studies. Specifically, the factor structure arose through exploratory principal components analysis. This was appropriate given the lack of previous exploration of the conceptual space occupied by appearance anxiety and distress in a Taiwanese sample. However, it is now desirable to conduct a confirmatory factor analysis on another sample to determine the stability of this factor structure. Further work might also include measures to assess discriminant validity which were not included in this study in order to avoid over burdening participants with excessive measurement. Mixed sampling, incorporating both face to face and postal administration of the scale is unlikely to have influenced the factor structure or the reported validity. However, it is conceivable that the difference between the visibly different and non-visibly different samples may have been confounded by administration method.

Conclusion

Overall, this study has demonstrated a meaningful translation of the DAS24 into the Taiwanese DAS19. This new scale, with sound psychometric properties, is now usable in clinical practice and research settings, and is distributed through the first author of this paper. It has also raised important questions about the nature of appearance adjustment in Taiwan, and the relation to the sophisticated and subtle differentiations and facets of appearance related shame in Taiwan.

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Table 1:
Factor loadings with oblimin rotation and item-total correlations

*Items**	Social distress	Social avoidance	Negative affect	*Corrected item total correlation*
das9	**0.802**	-0.132	-0.154	0.645
das18	**0.794**	-0.063	0.065	0.535
das23	**0.719**	-0.116	-0.166	0.585
das6	**0.704**	0.273	0.204	0.611
das19	**0.624**	0.152	-0.105	0.666
das16	**0.558**	0.375	0.001	0.703
das11	**0.555**	0.075	-0.115	0.553
das13	**0.479**	0.224	-0.132	0.612
das10	**0.448**	-0.154	**-0.497**	0.554
das24	-0.200	**0.732**	-0.198	0.446
das12	0.239	**0.720**	0.266	0.496
das5	0.025	**0.692**	-0.205	0.616
das21	0.015	**0.633**	-0.152	0.531
das15	0.202	**0.443**	-0.044	0.470
das4	-0.014	0.195	**-0.737**	0.582
das20	0.029	0.114	**-0.635**	0.491
das2	0.208	0.029	**-0.629**	0.581
das7	0.120	**0.384**	**-0.387**	0.596
das3	0.286	0.217	**-0.386**	0.615

* Numbering of items refers to original English item number from DAS24

Table 2:
Associations between DAS scores and age

Pearson's Correlations		
		Age
DAS19TOTAL	r	-.149*
	p	.040
	N	192
DASSocDistress	r	-.278**
	p	.000
	N	187
DASSocAvoid	r	.047
	p	.521
	N	187
DAS Negative affect	r	-.128
	p	.077
	N	192

** Correlation is significant at the .01 level (2-tailed).
* Correlation is significant at the .05 level (2-tailed).

Table 3:
DAS19 and participant ethnicity

	Ethnic group	N	Mean	Std. Deviation
DAS19TOTAL	Taiwanese	136	30.78	12.1
	Hakka	17	32.65	13.1
	Mainlander	22	26.05	10.2
	Other	13	28.31	10.7
	Total	188	30.22	11.9
DASSocDistress	Taiwanese	133	13.70	5. 7
	Hakka	16	15.56	6.9
	Mainlander	22	12.73	5.3
	Other	12	13.58	6.3
	Total	183	13.74	5. 8
DASSocAvoid	Taiwanese	131	6.11	3.6
	Hakka	17	6.06	3.9
	Mainlander	22	4.64	3.2
	Other	12	5.58	3. 8
	Total	182	5.89	3.7
DAS Negative affect	Taiwanese	136	9.22	3.5
	Hakka	17	10.29	3.9
	Mainlander	22	7.23	2.3
	Other	13	8.46	2.5
	Total	188	9.03	3. 4

Table 4:
Relation of DAS19 total and factor scores with appearance characteristics

		DAS19total**	DASSocDistress*	DASSocAvoid**	DAS Negative affect**
Visibly different	Mean	34.95	14.7595	7.4430	10.8675
	N	84	79	79	83
	Std. Dev	12.27	5.96	3.97	3.44
Not visibly different	Mean	27.40	13.08	5.23	7.95
	N	124	122	123	123
	Std. Dev	10.98	5.69	3.40	2.94
Total	Mean	30.45	13.74	6.09	9.13
	N	208	201	202	206
	Std. Dev	12.08	5.84	3.78	3.45
Eta Squared		.10	0.02	.08	.17

* significant at the .05 level (2-tailed).
** significant at the .01 level (2-tailed).

*Items**	Social distress	Social avoidance	Negative affect	*Corrected item total correlation*
das9	**0.802**	-0.132	-0.154	0.645
das18	**0.794**	-0.063	0.065	0.535
das23	**0.719**	-0.116	-0.166	0.585
das6	**0.704**	0.273	0.204	0.611
das19	**0.624**	0.152	-0.105	0.666
das16	**0.558**	0.375	0.001	0.703
das11	**0.555**	0.075	-0.115	0.553
das13	**0.479**	0.224	-0.132	0.612
das10	**0.448**	-0.154	**-0.497**	0.554
das24	-0.200	**0.732**	-0.198	0.446
das12	0.239	**0.720**	0.266	0.496
das5	0.025	**0.692**	-0.205	0.616
das21	0.015	**0.633**	-0.152	0.531
das15	0.202	**0.443**	-0.044	0.470
das4	-0.014	0.195	**-0.737**	0.582
das20	0.029	0.114	**-0.635**	0.491
das2	0.208	0.029	**-0.629**	0.581
das7	0.120	**0.384**	**-0.387**	0.596

das3	0.286	0.217	**-0.386**	0.615

* Numbering of items refers to original English item number from DAS24

Table 1: Factor loadings with oblimin rotation and item-total correlations

Pearson's Correlations		
		Age
DAS19TOTAL	r	-.149*
	p	.040
	N	192
DASSocDistress	r	-.278**
	p	.000
	N	187
DASSocAvoid	r	.047
	p	.521
	N	187
DAS Negative affect	r	-.128
	p	.077
	N	192

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 2: Associations between DAS scores and age

	Ethnic group	N	Mean	Std. Deviation
DAS19TOTAL	Taiwanese	136	30.78	12.1
	Hakka	17	32.65	13.1
	Mainlander	22	26.05	10.2
	Other	13	28.31	10.7
	Total	188	30.22	11.9
DASSocDistress	Taiwanese	133	13.70	5. 7
	Hakka	16	15.56	6.9
	Mainlander	22	12.73	5.3
	Other	12	13.58	6.3
	Total	183	13.74	5. 8
DASSocAvoid	Taiwanese	131	6.11	3.6
	Hakka	17	6.06	3.9
	Mainlander	22	4.64	3.2
	Other	12	5.58	3. 8
	Total	182	5.89	3.7
DAS Negative affect	Taiwanese	136	9.22	3.5
	Hakka	17	10.29	3.9
	Mainlander	22	7.23	2.3
	Other	13	8.46	2.5

Total	188	9.03	3. 4

Table 3: DAS19 and participant ethnicity

			DAS19total**	DASSocDistress*	DASSocAvoid**	DAS Negative affect**
Visibly different	Mean		34.95	14.7595	7.4430	10.8675
	N		84	79	79	83
	Std.	Dev	12.27	5.96	3.97	3.44
Not visibly different	Mean		27.40	13.08	5.23	7.95
	N		124	122	123	123
	Std.	Dev	10.98	5.69	3.40	2.94
Total	Mean		30.45	13.74	6.09	9.13
	N		208	201	202	206
	Std.	Dev	12.08	5.84	3.78	3.45
Eta Squared			.10	0.02	.08	.17

* significant at the 0.05 level (2-tailed).

** significant at the 0.01 level (2-tailed).

Table 4: Relation of DAS19 total and factor scores with appearance characteristics