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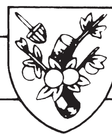

Prevalence of concern about physical appearance in the general population

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SUMMARY. Using information gathered in the introductory sections of the Derriford Appearance Scales (DAS24 and DAS59), the prevalence and epidemiological characteristics of concern about physical appearance have been determined for a carefully constructed sample of the general population of southwest Devon (rural and urban). In all, 2108 usable replies were received from a postal survey of a targeted population of 5400 men and women, aged 18 and over and randomly selected with constraints for age, sex and socio-economic status. The prevalence of concern about physical appearance was highest among women through to age 60 and younger men. There was no association with socio-economic status or living status. Concerns about the nose, weight and skin disorders were reported most frequently by both men and women and additionally concerns about breasts and abdomen were reported by women and premature balding by men. The mean DAS24 and DAS59 full-scale scores of 19% of male and 25% of female responders who were concerned about appearance exceeded the mean scores of preoperative patients undergoing reconstructive and cosmetic plastic surgery. Concern about appearance is widespread in the general population. More often than not, concern is about one feature only, which runs counter to the hypothesis that concern about appearance reflects a neurotic trait. The high levels of measured psychological distress and dysfunction found in a substantial minority of those in the general population who are concerned about appearance highlight the need for appropriate services. © 2001 The British Association of Plastic Surgeons

Keywords: concern about appearance, epidemiology, prevalence, general population data.

The prevalence and epidemiological characteristics of concern about physical appearance have not been studied previously in the general population of the UK. The lack of knowledge regarding possible associations with sex, age and socio-economic background impedes our understanding of the aetiology of sensitivity about appearance and of differences in the ways in which people respond to the disfiguring effects of trauma, disease and congenital malformation.[1] An understanding of epidemiology would enhance the process of patient selection for aesthetic and reconstructive plastic surgery, and assessing prevalence would give an indication of the size of the latent clinical population for whom services (surgical and psychological) may need to be provided in the future. This subject formed a substantial part of the 5th Report of the House of Commons Select Committee on Health,[2] which criticised the pressures put on consumers by commercially operated clinics in the independent sector and stated that, as a result, 'thousands of individuals find themselves undergoing treatment which is inappropriate'. Is this conclusion valid? It is commonly thought that people who express concern about their physical appearance are neurotic or vain, but are they?

In order to generate normative data for the standardisation of the Derriford Appearance Scales (DAS24 and DAS59),[3] two general-population studies have been carried out in which scales were mailed to carefully constructed samples of the population of southwest Devon, which comprises rural and urban (Plymouth, Torbay), coastal and inland residents, and is predominantly white. The Derriford Appearance Scales are two new self-report questionnaires that have been designed to assess the specific domains of psychological distress and behavioural dysfunction in people who are concerned about their appearance, whether it be a visible disfigurement or deformity or an aesthetic problem. They have been standardised on a wide range of patient groups and on the general population.[5] The DAS59 is a factorial scale and the DAS24 is a parallel short form. Both versions have the same introductory section, which gathers demographic information about the respondent, including living status and occupational status, and which identifies what concerns, if any, the respondent has about his/her appearance (Fig. 1). This paper reports the prevalence and epidemiological characteristics of concern about appearance in the local general population based on data generated by this introductory section.

General-population samples

The base population ($n = 470\,600$) was made up of adults aged 18 years and over registered with general practitioners administered by the South and West Devon Health Authority. Two independent sets, each of 2700 addressees, were extracted randomly from the Health Authority's database. As the main purpose of the study was to generate normative data for the DAS59 and the DAS24, each set was constructed so as to generate equal numbers of male

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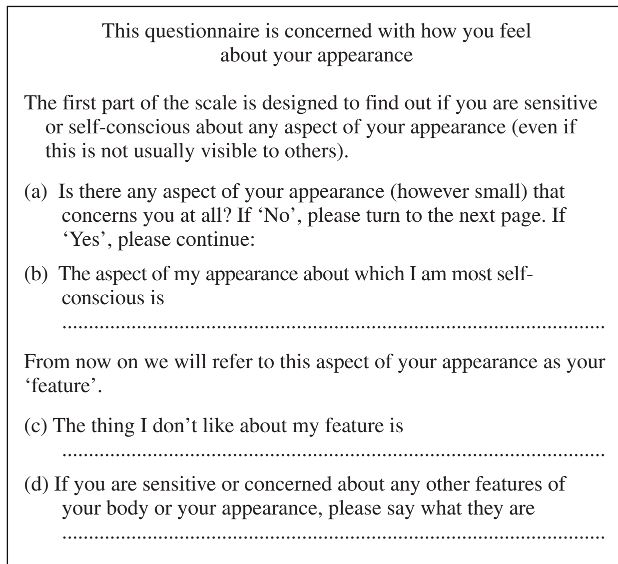
and female respondents evenly distributed through the age bands: 18–21 years, 22–30 years, decades to 60 years and 61 years and over. Using postal codes, the two sets were also constructed so as to maximise equal sampling of people from upper and lower socio-economic backgrounds. This method of sampling was tested in a pilot study of two sets of 300 addressees, and, from the results, sample sizes were calculated in order to generate a minimum of 50 useable replies for each age band and each sex.

Method

The study was undertaken with the approval of the Medical Ethical Committee (Plymouth Hospitals NHS Trust) and the Local Medical Committees of Plymouth and Torbay, and in cooperation with the South and West Devon Health Authority. One set of 2700 addressees were mailed a copy of the DAS59 and the other set of 2700 were mailed a copy of the DAS24. A covering letter explained the reason for the study: ‘to find out how much people’s appearances affect their lives’. They were asked to fill in the enclosed questionnaire ‘whether or not you have any concerns about your appearance’. Anonymity and confidentiality were assured and they were instructed not to give their names (‘Name … ’ on the scales had been blocked out). A reply-paid envelope was provided. After one month, non-respondents were sent a letter reminding them to return the scale and inviting them to telephone the research office if they required further information.

Data were entered into Excel spreadsheets. Socio-economic status was based on the occupation of the principal wage earner using the classification of the Office of Population Censuses and Surveys: AB: professional and managerial; C1: intermediate and junior non-manual; C2: skilled manual; DE: semi-skilled and unskilled manual; SEG17: miscellaneous others including unemployed, housewife, student and retired.[4]



This questionnaire is concerned with how you feel about your appearance

The first part of the scale is designed to find out if you are sensitive or self-conscious about any aspect of your appearance (even if this is not usually visible to others).

(a) Is there any aspect of your appearance (however small) that concerns you at all? If ‘No’, please turn to the next page. If ‘Yes’, please continue:

(b) The aspect of my appearance about which I am most self-conscious is

....

From now on we will refer to this aspect of your appearance as your ‘feature’.

(c) The thing I don’t like about my feature is

....

(d) If you are sensitive or concerned about any other features of your body or your appearance, please say what they are

....

Figure 1—The introductory section of the DAS24 and DAS59 scales.

Results

Out of the 5400 scales distributed, 2472 (46%) were returned, including 2108 (39%) that had been completed fully (Table 1). The majority of the incomplete returns were blank with a note indicating a lack of interest in the study. There was no evidence that any recipient was either offended by the study or distressed by the contents of the scales. After an interval of 3 months, a telephone survey of a sample of persistent non-respondents (39 men, 25 women), who were evenly distributed through the age bands 18–50 years, revealed that the failure to respond was due to lack of motivation (48%), absence from the address (22%) or the scale having been mislaid (25%). As part of the survey, they were also asked about their appearance: 20% of the men and 25% of the women said that they had an aspect of their appearance that concerned them and which they would have reported had they returned the scale.

Temporal reliability was assessed in data from 366 randomly selected primary responders who responded to a second mailing of the scales after an interval of 3 months: 86% gave exactly the same information with regard to their concerns about appearance on each occasion.

Table 1 shows the distribution, across the age bands, of male and female respondents to the DAS24 and the DAS59, and compares these with the age distributions of the mailed populations

Table 1 Distributions by gender and age bands (with percentages of the whole population) of the base population of southwest Devon, the mailed populations and the responding populations for the DAS59 study and the DAS24 study

Study	*Age band*	*Southwest Devon population*		*Mailed populations*		*Responding populations*[a]		*Response rates*	
	(years)	*Men (%)*	*Women (%)*	*Men (%)*	*Women (%)*	*Men (%)*	*Women (%)*	*Men (%)*	*Women (%)*
DAS59	18–21	13 900 (3)	12 800 (3)	224 (8)	222 (8)	55 (5)	71 (7)	26	32
	22–30	45 500 (10)	40 700 (9)	209 (8)	208 (7)	52 (5)	82 (8)	25	39
	31–40	37 800 (8)	37 300 (8)	240 (9)	219 (8)	59 (6)	112 (11)	26	51
	41–50	38 800 (8)	39 100 (8)	256 (9)	232 (9)	80 (8)	106 (11)	31	47
	51–60	29 700 (6)	30 800 (7)	221 (8)	233 (9)	97 (10)	95 (10)	44	41
	61 +	59 900 (13)	84 300 (18)	204 (8)	232 (9)	99 (10)	93 (9)	49	46
	All ages	225 600 (48)	245 000 (52)	1354 (50)	1346 (50)	442 (44)	559 (56)	33	42
DAS24	18–21	13 900 (3)	12 800 (3)	213 (8)	221 (8)	50 (4.5)	73 (7)	23	33
	22–30	45 500 (10)	40 700 (9)	205 (8)	218 (8)	50 (4.5)	81 (7)	24	37
	31–40	37 800 (8)	37 300 (8)	229 (8)	227 (8)	75 (7)	118 (11)	33	52
	41–50	38 800 (8)	39 100 (8)	223 (8)	229 (8)	90 (8)	120 (11)	40	52
	51–60	29 700 (6)	30 800 (7)	224 (8)	240 (9)	105 (9)	145 (13)	47	60
	61 +	59 900 (13)	84 300 (18)	254 (9)	218 (8)	119 (11)	81 (7)	47	37
	All ages	225 600 (48)	245 000 (52)	1348 (50)	1352 (50)	489 (44)	618 (56)	36	45

[a]Responding populations exclude respondents who returned scales that were incomplete.

Table 2 Proportions of responding men and women who were concerned about appearance according to age, socio-economic status and living status

	Men (%)	*Women (%)*
Age bands (years)		
18–21	59/105 (56)	98/144 (69)
22–30	46/102 (46)	113/163 (69)
31–40	47/134 (35)	156/230 (68)
41–50	69/170 (41)	139/226 (62)
51–60	49/202 (24)	151/240 (63)
61+	45/218 (21)	58/174 (33)
Socio-economic status		
AB	99/268 (37)	222/321 (69)
C1	50/134 (37)	135/223 (61)
C2	49/132 (37)	76/131 (58)
DE	31/83 (38)	87/128 (68)
SEG17	98/316 (31)	199/376 (53)
Living status		
married/living with partner	195/628 (31)	472/769 (61)
living alone	46/116 (40)	123/211 (58)
living with friends/ family	83/178 (47)	123/197 (62)
All respondents	322/931 (35)	717/1177 (61)

Table 3 Aspects of appearance about which respondents were 'most sensitive or self-conscious'

Men (323)		*Women (717)*	
nose	15%	weight	13%
skin, skin disorders	12%	nose	11%
hair (premature balding etc)	10%	breasts	10%
miscellaneous others	10%	stomach	10%
weight	9%	skin, skin disorders	9%
stomach	7%	face (including chin)	7%
lumps, warts, moles	5%	bottom, hips, thighs	6%
teeth, mouth, lips	5%	legs	5%
face (including chin)	4%	miscellaneous others	5%
ears	4%	teeth, mouth, lips	5%
eyes	3%	scars	5%
genitalia	3%	moles, blemishes etc.	5%
legs	3%	superfluous hair	3%
scars	3%	ears	2%
height	3%	eyes	2%
chest	3%	height	2%

and the base population of southwest Devon. As the age and sex distributions of the two responding populations (DAS24 and DAS59) were closely similar, data from the two studies have been combined. Table 2 shows the prevalence of concern about appearance among respondents and the association with age, socio-economic status and living status. In the responding population, 35% of men and 61% of women had an aspect of appearance that concerned them. Among women, the prevalence of concern was highest in the age band 18–30 years (69%) and remained high through to age 60 years (63%). Among men the prevalence of concern was highest in the age band 18–21 years (56%) but fell progressively with increasing age through to age 60 years. For men and women, the prevalence of concern about appearance was much the same in each of the socio-economic groups AB, C1, C2 and DE. For women, the prevalence of concern was fairly constant whatever their living status (58–62%) whereas for men, it was lowest for those living with partners (31%) and highest for those living with friends/family (47%). Out of the respondents who were concerned, 31% of men and 41% of women reported that they were concerned about more than one feature of their body or appearance (Fig. 1, question d).

Concern was expressed about a wide variety of appearances and these are summarised in Table 3. Concerns about the nose, which was the commonest feature reported by men and the second commonest reported by women, centred around it being too big or the wrong shape; a few, only, reported post-traumatic deformities. Most men and women who were concerned about being overweight focused on a particular part of the body such as the abdomen or waist, rather than expressing concern about the general appearance of obesity. Acne and acne scars, psoriasis, eczema and freckles were some of the skin conditions causing concern among both sexes. Miscellaneous problems included things that have to be worn such as spectacles, colostomy bags and breast prostheses.

The distribution of DAS59 and DAS24 full-scale scores of concerned respondents overlapped the lower end of the distribution of full-scale scores for the clinical population of preoperative reconstructive and cosmetic plastic surgery patients reported by Carr et al.[3] In addition, 25% of concerned women and 19% of concerned men had scores that exceeded the mean whole-scale DAS24 and DAS59 scores for the clinical population[3,5] indicating considerable psychological distress and behavioural dysfunction. These people report feeling self-conscious of their 'feature' most of the time. They avoid situations where their 'feature' may be more visible to others (for example: bars, restaurants, communal changing rooms, the beach and public transport). They report a loss of self-confidence and frequently experience feelings of being isolated, physically unattractive, unlovable and embarrassed. They are very distressed when others pass remarks about the feature in question or if they are misjudged; for example, large-breasted women can be misjudged as promiscuous and people with facial ageing can be misjudged as tired, miserable or worried. They can be very distressed about being unable to live normal lifestyles because of the need to avoid social, recreational and other activities in order to hide the feature from the sight of others. If the feature is sexually significant (such as the breasts, chest or abdomen), there is added distress from feeling unfeminine (or unmasculine) and many report difficulties with sexual relationships and marriage.

Discussion

Considerable effort was committed to encouraging people to return their scales, through a pilot survey, a carefully constructed covering letter, the inclusion of a pre-paid return envelope and through follow-up letters and prompts. Nevertheless, replies were received from only 46% of those surveyed including 39% that were complete. Our follow-up telephone survey revealed that most non-returns were due to a lack of interest, losing the original form or moving away and that, among the non-respondents, 20% of men and 25% of women would have reported a concern about their appearance had they returned the scale. The close similarities of the age and sex distributions of the responding populations, the sample populations and the base population from which these samples were drawn (Table 1) indicate that there is no consistent bias in the responding populations and suggest that the patterns of concern about appearance reported here are faithful reflections of the picture in the general population. The validity and reliability of the scales have

been clearly established[3,5] and this study has shown that the reliability of the introductory section is high (86%). In terms of prevalence, it is reasonable to assert that the proportion of the general population concerned about appearance lies somewhere between the rates identified in the completed returns and the rates identified in the telephone survey of non-respondents: 20–35% of men and 25–61% of women.

Our data show that concern about physical appearance is twice as common among women as it is among men. Its prevalence in both sexes is highest during the late teens and early twenties, when appearance is most important for relationships and social activity. It is noteworthy that, among women, the prevalence of concern remains unchanged through to 60 years of age whereas, among men, the incidence decreases with increasing age. Even above the age of 60 years, our data indicate that a significant proportion of men (21%) and women (33%) are concerned about physical appearance. The clear absence of any association between concern about appearance and either socio-economic or living status is also noteworthy as it weakens any hypotheses that such concerns are caused or exacerbated by these factors.

Just about every conceivable aspect of appearance was reported as a cause for concern, including medical appliances, but there were no surprises in the features causing concern most often. Most are within the syllabus of cosmetic plastic surgery.[6]

Of particular interest is the finding that, in the responding population, only 31% of men and 41% of women reported concern about more than one feature. In the clinical population of preoperative plastic surgery patients ($n = 1585$) these proportions are even lower: 20% of women and 14% of men. If, as is often supposed, concerns about physical appearance reflect a neurotic trait, one would expect a much higher incidence of concern about more than one feature, particularly in the clinical population. That the opposite is the case indicates that members of the general population who are concerned about appearance are not reflecting a neurotic trait, and our finding that concern about appearance is relatively common in the general population also supports this. The relative psychological normality of concern about appearance also runs counter to an assumption of neurosis or other psychological vulnerability in those who elect to undergo cosmetic surgery.

The consequences of concern about appearance for daily living and psychological well-being can be profoundly negative: disruptive effects on everyday living, work and relationships; problems coping in social settings such as restaurants, bars and public transport and a consequent reluctance to participate in recreational and social activities; feelings of isolation and embarrassment, and associated difficulties in intimate relationships.[3,6] These are what motivate the majority of patients referred for cosmetic surgery by general practitioners.[6] The extent of these clinically significant problems in the general population is indicated by the finding that, among those members of the responding population who were concerned about appearance, 19% of men and 25% of women had levels of psychological distress and dysfunction that were at least as severe as those suffered by patients with disfigurements and other problems of appearance who are currently accepted for plastic surgical intervention.[5]

Taken together, the extent and severity of concerns about appearance that have been revealed by this study of a carefully constructed sample of the general population present an epidemiological picture that has considerable implications for primary care and for service provision and resource allocation in the wider NHS context. Our findings underline the conclusions of the House of Commons Select Committee on Health[2] that there is a need for well-regulated surgical and psychological services for people with problems of appearance and, in the light of NHS priorities, in both the NHS and the independent sector.

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