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Life stress and hysterectomy–oophorectomy

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The effects of hysterectomy–oophorectomy and life stress in regard to physical and psychological discomfort were investigated. Oophorectomized women reported more physical complaints and more frequent loss of sexual interest than a control group of cholecystectomized women.

No differences between the groups were seen as regards general discomfort, anxiety and depression. In both oophorectomized and cholecystectomized women life stress contributed to general discomfort, anxiety and physical complaints.

(Key words: Hysterectomy–oophorectomy, Life stress)

Introduction

It is well established that the climacteric, the phase of life when the ovaries gradually lose their function, is accompanied by a variety of complaints. Characteristic features of the climacteric include episodes of perspiration, hot flushes and pain during intercourse. Other symptoms that occur, such as headaches, dizzinesss, loss of sexual interest, irritability, anxiety and depression, may also be associated with other physical and psychological conditions. In recent years there have been many investigations into the relationship between life stress and somatic and psychological symptoms in general populations.

Numerous studies have shown that accumulated life stress is significantly related to physiological and psychological disorders [1]. Greene and Cook [2] showed that in a normal population of women life stress had a more pronounced influence on physical and psychological symptoms than the climacteric.

In the past decade oophorectomy has become a frequent route by which women arrive at the menopause. For instance, it is estimated that one in every four women in the United States reaches menopause through surgery [3]. If bilateral oophorectomy is performed before the menopause abrupt endocrinological changes take place and severe climacteric symptoms may occur [4].

Research on the climacteric is handicapped by obvious methodological problems. First, investigators tend to use mainly nonstandard qualitative methods such as

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clinical interviews and the collection of symptoms from case histories [5]. Secondly, insufficient account is taken of factors contributing to climacteric symptoms, such as life stress and, in the case of hysterectomy–oophorectomy, the effects of surgery itself.

The aim of the present study was to explore the effects of hysterectomy–oophorectomy in regard to physical and psychological discomfort and to assess the contributory effect of life stress on the reported complaints.

Subjects and Method

The experimental subjects comprised 41 women, aged from 34 to 50 yr (mean age 46.6 yr), who had undergone hysterectomy with bilateral oophorectomy in the preceding 5 yr. Indications for hysterectomy–oophorectomy were chronic low abdominal pain with dysfunctional bleeding of more than 6 mth duration. Only two experimental subjects were receiving hormone replacement therapy at the time of investigation. Though an interesting variable, motherhood was not included because of the undesirable complexity this would have entailed at the analysis stage.

The control subjects were 33 women aged from 26 to 53 yr (mean age 38.7 yr), who had undergone cholecystectomy in the preceding 5 yr. The indications for cholecystectomy were chronic abdominal pain and the presence of gallstones. At the time of surgery all the subjects were menstruating. All underwent surgery before the age of 47 yr. Any women who had undergone surgery in the preceding 6 mth, were suffering from malignant diseases or acute complaints, or had been or were currently under psychiatric treatment were excluded from the study.

Both groups of subjects were subdivided into high and low life-stress groups. Classification was carried out on the basis of the median negative-live-event impact score using a Dutch version of the Life Experience Survey [6]. The number of subjects in each subgroup is shown in Table I.

The experimental and control groups did not differ as regards the following variables: time since surgery, negative-life-event impact score, frequency of visits to general practitioners and specialists, use of medication and educational level. Out of the control group, only one patient visited her general practitioner with complaints that could be interpreted as indicative of the post-cholecystectomy syndrome. The experimental subjects proved to be older than the control subjects ($P < 0.01$). Since

TABLE I

EXPERIMENTAL AND CONTROL SUBJECTS CLASSIFIED ACCORDING TO NEGATIVE-LIFE-EVENT IMPACT.

	Negative-life-event impact	
	Below median score	Above median score
Oophorectomized women	20	21
Cholecystectomized women	18	15

our aim was to investigate the effect of the sudden onset of menopause following surgery, it was decided that the age difference between the groups could be disregarded.

All subjects answered the Dutch versions of two self-report questionnaires, viz the Symptom Checklist [7,8] and the Fear Survey Schedule-III [9,10]. The Symptom Checklist (SCL-90) is a self-report symptom inventory that is multidimensional in nature and oriented towards the measurement of psychopathology in medical and psychiatric outpatients. The list comprises 90 items, each measured on a five-point scale of distress ranging from 'not at all' (0) to 'extremely' [4] distressed. In the present investigation the following SCL-90 scales were used:

(a) The total score for all 90 SCL items, which may be seen as a general index of psychological and physical discomfort.
(b) The somatization scale, consisting of items that reflect distress arising from perceptions of bodily dysfunction. This scale was one of the factors determined by Arrindell et al. [8] in a study of phobic patients.
(c) A depression scale, consisting of items that loaded $\geqslant 0.50$ in a Procrustus and Varimax rotation on data relating to psychiatric outpatients in a study by Derogatis et al. [11]. It comprised the following SCL-items: 26, 29, 30, 31, 32, 54, 71 and 79.
(d) The score for item 5, relating to loss of sexual interest or pleasure.

The Fear Survey Schedule-III (FSS-III) was developed to measure types of irrational fears. This inventory comprises 76 items, each rated on a five-point Likert scale. The following scales were used in the present study:

(a) The total score for all 76 FSS-III items, as an index of general anxiety.
(b) The social anxiety scale derived from a study of phobic patients by Arrindell [10]. This scale comprises items relating to interpersonal events in which 'being criticized', 'people in authority' and 'being watched while working' are prominent.
(c) The agoraphobic scale derived by Arrindell [10]. Prominent items covered by this scale are 'travelling by train or bus', 'large open spaces' and 'being in a strange place'.

Results

The mean values and standard deviations of the SCL-90 and FSS-III scales for oophorectomized and cholecystectomized women are shown in Table II. Data are indicated separately for high and low experienced-life event impact. The data were evaluated using separate analyses of variance for each of the SCL-90 and FSS-III scales. A 2×2 factorial design for unequal cells was used [12]. A summary of the analyses is given in Table III.

The results indicated that the type of surgery (oophorectomy or cholecystectomy) constituted a significant main event for SCL somatization and SCL loss of sexual interest or pleasure. Table II shows that the oophorectomized women scored higher on these criteria than the cholecystectomized women. No differences between the

TABLE II

MEAN VALUES AND STANDARD DEVIATIONS (IN PARENTHESES) OF SCL AND FSS SCALES FOR OOPHORECTOMIZED AND CHOLECYSTECTOMIZED WOMEN CLASSIFIED ACCORDING TO EXPERIENCED-NEGATIVE-LIFE EVENT IMPACT

	Oophorectomized women		Cholecystectomized women	
	High negative-event impact	Low negative-event impact	High negative-event impact	Low negative-event impact
SCL total	158.20	131.05	132.73	120.38
	(50.66)	(33.82)	(34.41)	(27.18)
SCL somatization	33.65	28.10	26.27	23.94
	(9.79)	(8.14)	(9.06)	(6.19)
SCL depression	14.95	11.65	12.06	10.50
	(6.55)	(5.33)	(4.74)	(4.50)
SCL loss of sexual interest	2.11	2.05	1.36	1.47
	(1.49)	(1.10)	(0.63)	(1.13)
FSS total	146.40	122.58	139.47	128.63
	(41.13)	(23.02)	(32.63)	(33.86)
FSS social anxiety	28.37	21.35	23.40	21.50
	(9.30)	(4.68)	(6.02)	(7.11)
FSS agoraphobia	22.55	17.26	19.27	19.88
	(8.09)	(3.11)	(4.04)	(6.79)

TABLE III

RESULTS OF ANALYSES OF VARIANCE TESTING FOR TYPE OF SURGERY AND NEGATIVE-LIFE-EVENT IMPACT

Source		Type of Surgery (A)	Negative-life-event impact (B)	A × B	Error
SCL total	MS	5616.02	7597.71	955.93	1464.76
	F	3.83	5.18 *	0.65	
SCL somatization	MS	576.04	304.80	45.23	71.67
	F	8.04 **	4.25 *	0.63	
SCL depression	MS	72.43	114.99	13.44	30.20
	F	2.40	3.81	0.45	
SCL loss of sexual interest	MS	7.27	0.00	0.12	1.33
	F	5.47 *	0.00	0.09	
FSS total	MS	143.26	7608.69	1394.86	1184.86
	F	0.12	6.42 *	1.18	
FSS social anxiety	MS	88.77	404.57	107.40	47.68
	F	1.86	8.49 **	2.25	
FSS agoraphobia	MS	1.45	125.00	150.20	35.41
	F	0.04	3.53	4.24 *	

df = 1 for type of surgery, negative-life-event impact and group × negative-life-event impact; df = 70 for error.

*$P < 0.05$; **$P < 0.01$; MS = mean squares; df = degrees of freedom; F = Fischer–Snedecor.

surgical groups were seen for SCL total, SCL depression, FSS-III total, FSS-III social anxiety or FSS-III agoraphobia.

The analyses of variance further revealed that negative life events had a significant main effect on SCL total, SCL somatization, FSS-III total and FSS-III social anxiety.

Table II shows that women who reported a relatively high negative-life-event impact scored higher on these discomfort scales than the women who reported a relatively low impact. No differences between the high and low negative-life-event groups were seen for SCL depression, SCL loss of sexual interest or FSS agoraphobia.

No significant interaction between type of surgery and negative life events was seen except in the case of FSS agoraphobia. To gain a better understanding of the nature of the interaction, the data were subjected to one-way analysis of variance for unequal cells [12]. The results revealed no significant differences between the high and low negative-life-event groups for the cholecystectomized women. In the case of the oophorectomized women the FSS-III agoraphobia scores were significantly higher in the high negative-life-event group than in the low group, indicating that a high negative-life-event impact contributed to agoraphobic complaints in ooophorectomized women only.

The oophorectomized and cholecystectomized women had undergone surgery during the preceding five years. The time since surgery may influence the reported complaints, so in order to assess the effects of the time factor both groups of women were subdivided according to whether surgery had taken place 5 to 3.5 yr previously, 3.5 to 2 yr previously or 2 to 0.5 yr previously.

The data were evaluated using separate analyses of variance for each of the SCL-90 and FSS-III scales. A 2×3 factorial design for unequal cells was used [12]. The analyses of variance revealed that time since surgery constituted a significant main influence only for FSS-III social anxiety ($P < 0.05$). Women in the 0.5–2 yr since surgery group demonstrated more social anxiety than those for whom more time had elapsed. No significant interaction between type of surgery and elapsed time was seen.

Discussion

Bilateral oophorectomized-hysterectomized women suffered more physical complaints and more frequent loss of sexual interest or pleasure than the cholecystectomized women. These effects may be attributed to anatomical as well as hormonal changes, particularly as far as the loss of sexual interest or pleasure is concerned [3]. There is no evidence that somatization disorders occur more frequently in oophorectomized–hysterectomized women than in cholecystectomized women. However, the differences between the groups should be interpreted with some caution, since no data were available on physical and psychological complaints before surgery.

The after affects of hysterectomy–oophorectomy on sexual response warrant the physician's special attention. Counselling is particularly advisable in the case of

women for whom the quality of the orgasm preoperatively was related to the movement of the cervix and uterus. The removal of the cervix and uterus in such women may lead to a decrease in intensity of orgasm.

No differences were seen in our study between oophorectimized and cholecystectomized women in regard to general discomfort, depression, general anxiety, social anxiety and agoraphobia. However, anxiety and depression during the climacteric are quite often reported in the literature. It is unlikely that the sudden effect of a surgical menopause on physical and psychological discomfort would be less than that in the case of a natural menopause. In our opinion the conflicting results must be partly attributed to the way in which anxiety and depression are assessed. Most studies on the climacteric rely mainly on interview data, psychometric tests seldom being used [5]. Another confusing factor in research on the climacteric is life stress.

Natural menopause occurs during a period of life in which major psychosocial changes may take place. Although life stress has been shown to be related to physiological and psychological symptoms, most studies on the climacteric do not take account of its influence. The relationship between anxiety/depression and hormonal changes in the climacteric should therefore be reconsidered.

With the exception of social anxiety none of the discomfort criteria were related to time since surgery. Moreover, no interaction effects were seen between type of surgery and time since surgery, indicating that the relationship between oophorectomy and physical complaints and loss of sexual interest or pleasure is a relatively stable one.

The women who experienced a rather high negative-life-event impact reported more general discomfort and physical complaints and showed higher general and social anxiety than those who reported a low impact. The demonstrated influence of life stress supports our contention that it is important to take account of life stress in research on the climacteric.

The oophorectomized women who reported a high negative-life-event impact also had more agoraphobic complaints. The combination of oophorectomy and life stress therefore seems to constitute an agoraphobia risk factor.

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