

# Does infertility cause marital benefit? An epidemiological study of 2250 women and men in fertility treatment

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## Abstract

**Objective:** To investigate (i) marital benefit, e.g., that infertility has strengthened the marriage and brought the partners closer together among people beginning fertility treatment and (ii) communication and coping strategies as predictors of marital benefit 12 months later.

**Methods:** A prospective cohort design including 2250 people beginning fertility treatment and a 12-month follow-up. Data were based on self-administered questionnaires measuring marital benefit, communication, and coping strategies. The analyses of predictors were based on the sub-cohort ( $n = 816$ ) who had not achieved a delivery after fertility treatment.

**Results:** 25.9% of women and 21.1% of men reported high marital benefit. Among men medium use of active-confronting coping (e.g., letting feelings out, asking others for advice) and use of meaning-based coping were significant predictors for high marital benefit. Having the infertility as a secret, difficult marital communication, and using active-avoidance coping (e.g., avoid being with pregnant women or children, turning to work to take mind off things) were among men significant predictors for low marital benefit. No significant predictors were identified among women.

**Conclusion:** Fertility patients frequently experience marital benefit.

**Practice implications:** The study provides information about where to intervene with male fertility patients in order to increase their marital benefit after medically unsuccessful treatment.

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**Keywords:** Assisted reproduction; Clinical epidemiology; Communication; Coping; Infertility; Marital benefit; Marital satisfaction

## 1. Introduction

Many infertile couples experience a serious strain on their interpersonal relationship [1]. Previous qualitative studies among couples in fertility treatment have shown that infertility and treatment at the same time can be seen as a threat or a challenge for the couple and as a situation that can bring the partners closer together and strengthen the marriage [2–4]. A qualitative study among infertile couples having stopped trying to conceive showed that the couples were able to acknowledge the gains that had been realized in their lives as a result of their infertility experience [5]. The

participants in the qualitative studies described how the infertility experience forced the partners to talk about existential aspects of life, to talk about the emotional aspects of infertility and to learn a new terminology to talk about the different kind of treatment used in assisted reproduction to get a child. Also the infertility experience could force the couple to manage new, stressful situations. For half or most of the couples involved in these qualitative studies the infertility experience had strengthened their marriage and had improved the partners' mutual connection [2–5]. We have called this positive effect on marriage "marital benefit" in our later clinical epidemiological studies [6]. Marital benefit is defined as the perception that infertility has brought the partners' closer together and strengthened their relationship. Although these beneficial gains of infertility

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have been known for many years they have only been described in very few quantitative studies.

Previous research has studied predictors of psychosocial adjustment to infertility. Longitudinal studies among couples in fertility treatment have shown that appraisal-oriented coping is related to better adjustment and avoidant coping is related to poor adjustment [7–9].

However, it is important not only to study predictors of psychological adjustment but also to be aware of factors that could enhance infertile couples' marital benefit. We have not been able to identify studies which analyse factors associated with marital benefit. Other infertility studies have measured factors related to, e.g., relationship concern, marital quality and marital satisfaction. Newton et al. [10] measured relationship concern which included items about marital communication and found a positive association between relationship concern and higher symptom ratings of depression. Abbey et al. [11] found that increased received emotional support between the partners was related to increased marital life quality. From a longitudinal study Verhaak [12] reported that unsuccessful IVF/ICSI treatment was a predictor for decreased satisfaction with the marital and sexual relationship. Leiblum et al. [13] found in a follow-up study of women after IVF treatment, that there was no differences in satisfactory marital adjustment between childless women, women who adopted a child, and women who had a child after IVF. The aspects of marital satisfaction which have been addressed in the above mentioned studies are not, however, identical with the concept of marital benefit. Within health services research, satisfaction ratings are defined as a personal evaluation [14], while we define marital benefit as a positive effect of infertility and not as an evaluation, a satisfaction rating of the marriage. We need to further explore the perception of marital benefit.

Communication and coping are important psychosocial aspects of infertility [8,9,15]. In the present longitudinal study we examined: (1) the distribution of marital benefit among 2250 women and men attending fertility treatment; and (2) whether (i) infertility-related communication with the partner and with other people, and (ii) four different coping strategies were predictors for high marital benefit at a 12-month follow-up. These longitudinal analyses were conducted among those participants ( $n = 816$ ) who had not achieved a treatment-related pregnancy or delivery at the follow-up.

## 2. Methods

### 2.1. Setting

Denmark provides a tax-financed, comprehensive health-care system with equal, free and easy access to high quality assisted reproductive technology (ART). Among Western European countries, Denmark has the largest proportion

ART use compared to the population [16]. Data in this longitudinal study were collected consecutively from Danish-speaking infertile couples beginning a new period of treatment at four public and one private fertility clinic. Three of the four public clinics included were university clinics. The study is part of an ongoing cohort study, The Copenhagen Multi-centre Psychosocial Infertility (COMPI) Research Programme.

### 2.2. Design and procedure

This study is a prospective cohort study. In the period from January 2000 to August 2001 all new couples received a questionnaire for each spouse, immediately before their first treatment attempt at the clinic (T1). A follow-up questionnaire was sent 12 months later (T2; from January 2001 to August 2002). All questionnaires were returned to the first author (L.S.) who was not employed at any of the fertility clinics. The clinic staff did not know whether or not a patient was participating in the study. For a more detailed description, see [6,17].

The study was assessed by the Scientific Ethical Committee of Copenhagen and Frederiksberg Municipalities and no objections were noted. The study was approved by the Danish Data Protection Agency.

### 2.3. Study populations

In total, 2812 people (1406 couples) received a questionnaire at T1, and 2250 (80.0%) participated. Slightly more women (1169, 83.1%) than men (1081, 76.9%) responded after two reminder letters. Forty-four participants were lost to follow-up: thirty-eight participants (19 couples) whose identity was not registered at baseline; the address could not be traced for two women and two men; one man had died and one woman suffered a severe brain injury following a road accident. In total, 2206 participants received the 12-month follow-up questionnaire (T2) and 1934 (87.7%) responded (1025 women, 89.4%; 909 men; 85.8%). At T2 816 participants (441 women, 375 men; 740 were partners = 370 couples) had not achieved a pregnancy or a delivery after ART and had responded to both the T1 and the T2 questionnaire. The predictor analyses in this paper are based on this cohort.

### 2.4. Questionnaires

At T1 the participants completed the T1 COMPI questionnaire booklet, which contained questions about reproductive history, psychosocial aspects of infertility including fertility problem stress, ways of coping, communication, social relations, sense of coherence, health, and well-being. The T2 questionnaire had items on treatment in the past 12 months, psychosocial aspects of infertility including the evaluation of care, fertility problem stress, ways of coping, communication, control of the situation,

Table 1  
Distribution of responses to the two items about marital benefit at baseline (T1) among women ( $n = 1169$ ) and men ( $n = 1081$ )

Item	Response category	Women (%)	Men (%)	Chi-square (d.f. = 4) <sup>a</sup>	P-value
The childlessness has brought us closer together	Strongly agree	32.2	26.2	25.04	<0.001
	Somewhat agree	33.7	31.2		
	Neither agree or disagree	28.2	32.4		
	Somewhat disagree	3.3	4.7		
	Strongly disagree	2.6	5.4		
The childlessness has strengthen our relationship	Strongly agree	32.5	26.4	25.52	<0.001
	Somewhat agree	33.1	29.7		
	Neither agree or disagree	27.9	34.0		
	Somewhat disagree	4.1	4.9		
	Strongly disagree	2.5	5.1		

<sup>a</sup> Chi-square is calculated from the contingency tables.

social relations, sense of coherence, and well-being. The following section describes only those materials used for the analyses presented here. A more comprehensive account of the entire questionnaire is available from the first author (L.S.).

## 2.5. Measurement

### 2.5.1. Marital benefit

Marital benefit was measured at T1 and T2 by two items: Our childlessness has (i) brought us closer together; (ii) strengthen our relationship. The response category was a 5-point Likert scale from (1) strongly disagree to (5) strongly agree. The items were developed from a qualitative interview study with Danish couples attending ART [3]. The scale was dichotomised into high ('strongly agree' for both items) and low marital benefit. See Table 1 for distribution of responses and Table 2 for range, mean (S.D.) and Pearson correlation coefficients.

### 2.5.2. Communication

Communication with partner was measured by one item at T1: "Do you find it difficult to talk to your partner about your fertility problem?" The response key was: (1) yes, always; (2) yes, sometimes; (3) no, never; dichotomised into 1–2 versus 3.

Infertility-related communication strategy (ICS) assessed the participants' communication with other people measured at T1 by the question: "Do you talk to other people about ..." followed by four items about factual issues related to childlessness and treatment, and two items about the emotions related to infertility and to the treatment process. The response key was (1) not to other people; (2) only to close other people; (3) to most people I know. The items and the response key were derived from Schmidt's qualitative interview study [3,18] showing that participants used three different strategies for communication with people about their infertility and treatment. Responses at T1 were categorised into four communication strategies: (i) *Secrecy*, at least three out of four factual issues and at least one of two emotional issues were *not* discussed with others. (ii) *Formal*, at least three of four factual issues discussed

with others and maximum one of two emotional issues discussed with only close people. (iii) *Open-minded*, at least three of four factual issues discussed with others and both emotional issues discussed with other close or distant social relationships. (iv) *Others*, no participants fell into the last category.

### 2.5.3. Ways of coping

We developed a coping questionnaire specifically aimed at measuring coping strategies in relation to the specific stressor infertility. This 29-item questionnaire was developed from three sources: (1) items were adapted from the 66-item Ways of Coping Questionnaire (WOCQ), a process-oriented measure of coping derived from Lazarus' and Folkman's transactional model of stress [19,20]; (2) Folkman's [21] later revision of the coping model with the inclusion of the new concept, meaning-based coping; and (3) items developed from our qualitative interviews [3]. An item was selected from WOCQ if this specific way of coping was clearly manifested in the qualitative interview transcripts. In total, 18 items were selected from WOCQ; and 7 of these were re-formulated to focus on the specific stressor infertility. Further, we developed 11 items based on the results from the interview study. These 29 items covered a wide range of responses that the participants may have engaged in dealing with the fertility problem. The response key was (1) not used; (2) used somewhat; (3) used quite a bit; and (4) used a great deal. The items were categorised into four subscales based on their conceptual content: (1) active-avoidance strategies (e.g., avoid being with pregnant women or children); (2) active-confronting strategies (e.g., show feelings, ask others for advice); (3) passive-avoidance strategies (e.g., hope for a miracle); and (4) meaning-based coping (e.g., think about the fertility problem in a positive light, find other goals in life). Two items in the active-confronting coping scale (talking about emotions related to the infertility and to the treatment process) was also included in the ICS. For further details about the subscales see [22].

Each coping subscale comprised items that were significantly intercorrelated. Ten items did not fit the scales, and these items were excluded from the analyses. A

Table 2

Socio-demographic, medical and psychosocial characteristics at baseline (T1) in the cohort of participants without or with a treatment-related pregnancy or delivery at a 12-month follow-up (T2)

Variable	Women treatment-related pregnancy or delivery at T2			Men treatment-related pregnancy or delivery at T2		
	No (n = 441)	Yes (n = 573)	Chi-square test <i>P</i> -value <sup>a</sup>	No (n = 375)	Yes (n = 526)	Chi-square test <i>P</i> -value <sup>a</sup>
<b>Sociodemographic</b>						
Age (years) ≤30 (%)	23.8	27.9		13.9	16.4	
31–35 (%)	46.3	51.3		40.0	43.4	
>35 (%)	29.9	20.8	0.003	46.1	40.3	0.201
Having a child together (%)	3.5	4.1	0.621	3.7	4.4	0.627
Occupational social class High, I + II (%)	15.5	19.6		31.8	28.0	
Medium, III + IV (%)	66.0	63.9		45.7	51.9	
Low, V + VI (%)	18.5	16.6	0.251	22.6	20.1	0.198
<b>Medical</b>						
Diagnosed female infertility (%)	41.1	33.2	0.010	40.3	31.0	0.004
Diagnosed male infertility (%)	38.3	41.4	0.328	38.9	43.0	0.226
Past fertility treatment (%)	38.0	42.3	0.172	38.7	46.1	0.027
<b>Psychosocial</b>						
<b>Marital benefit</b>						
Range	0–8	0–8		0–8	0–8	
Mean (S.D.)	5.85 (1.85)	5.71 (1.89)	0.165	5.52 (2.01)	5.34 (2.05)	0.449
Pearson correlation coefficient	0.83	0.83		0.87	0.83	
Pct high marital benefit	29.0	25.2		24.4	20.9	
ICS Secrecy (%)	7.3	7.5		14.7	20.0	
Formal (%)	18.4	17.8		27.2	28.5	
Open-minded (%)	74.4	74.7	0.966	58.5	51.5	0.069
Difficult partner communication (%)	27.0	26.6	0.871	23.4	20.7	0.329
<b>Active-avoidance coping</b>						
Range	4–16	4–16		4–16	4–16	
Mean (S.D.)	6.95 (2.34)	7.02 (2.21)		6.05 (1.95)	6.07 (2.03)	
Cronbach's alpha	0.69	0.67		0.68	0.71	
Pct > 6 points	35.6	35.8	0.380	22.4	21.3	0.917
<b>Active-confronting coping</b>						
Range	7–26	7–26		7–26	7–26	
Mean (S.D.)	16.13 (3.73)	16.10 (3.63)		13.87 (3.58)	13.33 (3.25)	
Cronbach's alpha	0.77	0.75		0.76	0.73	
Pct > 16 points	53.1	51.1	0.607	39.1	29.4	0.065
<b>Passive-avoidance coping</b>						
Range	3–12	3–12		3–12	3–12	
Mean (S.D.)	9.04 (1.96)	9.33 (1.89)		8.45 (2.13)	8.54 (2.10)	
Cronbach's alpha	0.46	0.44		0.56	0.53	
Pct > 9 points	24.9	31.2	0.051	18.7	19.2	0.836
<b>Meaning-based coping</b>						
Range	5–20	5–20		5–20	5–20	
Mean (S.D.)	11.48 (2.97)	11.14 (2.76)		10.63 (2.76)	10.46 (2.73)	
Cronbach's alpha	0.62	0.56		0.50	0.51	
Pct > 11 points	33.8	29.1	0.278	23.5	21.1	0.692

ICS: infertility-related communication strategy.

<sup>a</sup> Chi-square test is calculated from the contingency tables.

confirmatory factor analysis showed goodness-of-fit-index (GFI) = 0.88 for the entire model. When subscales were removed from the model one at a time the GFI was >0.91. The factor analyses were calculated in SAS, version 8.02, using proc calis and the macro polychor.sas [23]. Each subscale was trichotomised into high, medium and low groups. The cut point which separated the highest and the other groups was chosen in such a way that approximately

one third of the respondents at T1 were categorised as high. For details about range, mean, Cronbach's coefficients alpha, and proportion of high use, see Table 2. Higher scores indicated more use of the specific coping subscale.

#### 2.5.4. Socio-demographic and medical variables

Included age; having a child together; and social position. A standardised measure of social position included seven

items about school education, vocational training, and occupation. Based on this measure, social position was categorised into a descending scale of occupational social class: from social class I (high) to social class V (low) [24] and social class VI which comprised individuals who received social welfare. Social position was recoded into three levels: high (social classes I + II including professionals, executives and medium level white collar employees), medium (social classes III + IV including low level white collar employees and skilled workers) and low (social classes V + VI including unskilled and semi-skilled workers and participants receiving social welfare).

Medical background information included past fertility treatment and diagnosis. This diagnosis was recoded into female infertility (e.g., blocked tubes and/or irregular ovulation or anovulation) and male infertility (e.g., reduced semen quality).

## 2.6. Non-respondents

### 2.6.1. At baseline T1

In total, 562 subjects (20.0%) did not answer the baseline questionnaire (T1). It was possible to obtain ages for 305 (54.2%) of these non-respondents. When separated into three age groups ( $\leq 30$  years, 31–35 years,  $> 35$  years) the female non-respondents were significantly older (23.0%, 44.8%, 32.2%) than the women who participated (25.9%, 56.0%, 18.1%, chi-square = 18.72, d.f. = 2,  $P < 0.001$ ). The same was true for the men who did not participate (13.0%, 34.4%, 52.7%) compared to men who participated (15.0%, 50.6%, 34.4%, chi-square = 16.59, d.f. = 2,  $P < 0.001$ ).

### 2.6.2. At 12-month follow-up T2

In total, 272 (12.3%) of the invited patients did not participate in the follow-up study (T2). Female, but not male, non-respondents were significantly older ( $P = 0.009$ ). Both among women and men, there was a significantly higher non-response among couples treated at the public university clinics as compared to the non-university clinic (women:  $P = 0.002$ ; men:  $P = 0.001$ ); among participants with short duration of infertility (women:  $P = 0.024$ ; men:  $P = 0.002$ ); diagnosed female fertility (women:  $P = 0.017$ ; men:  $P = 0.008$ ); and among those who had a child together prior to treatment (women:  $P = 0.004$ ; men:  $P = 0.004$ ). We also compared respondents and non-respondents in the follow-up study according to baseline values of marital benefit, fertility problem stress, the four coping subscales, difficult partner communication and the infertility-related communication strategy. There were no significant differences between respondents and non-respondents neither among men nor women.

## 2.7. Data analyses

Baseline distributions of marital benefit among women and men were computed by mean and S.D. Comparisons of

baseline distributions between the study population (those who had not achieved a pregnancy or delivery after ART) and the participants who at T2 had achieved a pregnancy or delivery after ART were computed using chi-square analyses. The association between marital benefit at T1 and T2 among the study population not having achieved a delivery or pregnancy after ART were computed by Pearson's correlation coefficient. The associations between the communication and coping strategies used at T1 and marital benefit at T2 were calculated by odds ratios separately for women and men. The analyses of how communication and coping predicted marital benefit included the study population of those who had not achieved a treatment-related delivery or pregnancy at T2. All odds ratios were adjusted for age and for the value at baseline of marital benefit. The exact number of years was used for age. Analyses were performed in SAS, version 8.02. In evaluation of estimates, we followed the recommendations by Rothman and Greenland [25] who suggest that conclusions are based on both statistical significance and assessment of estimates.

## 3. Results

### 3.1. Marital benefit at baseline T1

Table 1 shows the distribution among women and men of responses to the two items included in the marital benefit measure. In total, 25.9% of the women and 21.1% of the men ( $P = 0.007$ ) reported high marital benefit defined as having responded strongly agreed to both items.

Only around 2.5% of the women and 5% of the men responded that they strongly disagree with these statements. Significantly more women than men responded that they strongly agreed that the childlessness had brought the partners closer together (women 32.2% versus men 26.2%,  $P = 0.002$ ) and/or that the childlessness had strengthened the couples' relationship (women 32.5% versus men 26.4%,  $P = 0.002$ ). Significantly more men than women strongly disagreed with these two statements (closer together: men 5.4% versus women 2.6%,  $P < 0.001$ ; strengthened relationship: men 5.4% versus women 2.6%,  $P = 0.001$ ).

Table 2 shows key data about the study population who had responded to both the baseline (T1) and the 12-month follow-up questionnaire (T2). This population is divided in participants who had not achieved a treatment-related pregnancy or a delivery at T2 and those who had. Women who had not achieved a pregnancy or delivery were significantly older ( $P = 0.003$ ) and more had a diagnosis of female infertility ( $P = 0.010$ ). There were no significant differences for any of the variables marital benefit, communication and coping between the two study populations.

Table 3

Odds ratios (OR) (95% confidence intervals) of high marital benefit at 12-month follow-up by psychosocial predictors at baseline (T1) among women ( $n = 411$ ) and men ( $n = 375$ ) without having achieved a treatment-related pregnancy or delivery at follow-up (T2)

Predictors	Women adjusted OR marital benefit <sup>a</sup>	Men adjusted OR marital benefit <sup>a</sup>
ICS secrecy vs. open-minded	1.22 (0.51–2.93)	<b>0.35 (0.14–0.86)</b>
Formal vs. open-minded	0.59 (0.31–1.13)	0.74 (0.40–1.35)
Difficulties in partner communication Yes vs. no	0.94 (0.55–1.60)	<b>0.52 (0.26–1.03)</b>
Active-avoidance coping Medium vs. low	0.97 (0.60–1.70)	<b>0.56 (0.30–1.05)</b>
High vs. low	0.68 (0.39–1.18)	<b>0.48 (0.24–0.96)</b>
Active-confronting coping Medium vs. low	0.64 (0.35–1.17)	<b>1.66 (0.91–3.03)</b>
High vs. low	1.56 (0.91–2.68)	1.41 (0.70–2.86)
Passive-avoidance coping Medium vs. low	0.92 (0.54–1.57)	1.37 (0.76–2.47)
High vs. low	0.94 (0.52–1.69)	1.63 (0.77–3.03)
Meaning-based coping Medium vs. low	0.98 (0.55–1.74)	<b>2.21 (1.06–4.66)</b>
High vs. low	0.68 (0.37–1.25)	<b>6.31 (2.93–13.57)</b>

OR's in bold:  $P < 0.10$ . ICS: infertility-related communication strategy.

<sup>a</sup> OR adjusted for age and for marital benefit at baseline.

### 3.2. Correlation between marital benefit at baseline and follow-up

Approximately half of the participants gave identical responses to the two marital benefit items at T1 and T2. The Pearson's correlation coefficient of item (i) (our childlessness has brought us closer together) was 0.37 for men and 0.45 for women. The correlation coefficient of item (ii) (our childlessness has strengthen our relationship) was 0.42 for men and 0.44 for women.

### 3.3. Communication and coping as predictors of marital benefit 12 months later

Table 3 shows the age-adjusted odds ratios for marital benefit at T2 by communication strategies and coping strategies used at T1 among those participants who had not achieved a pregnancy or delivery after ART at T2.

Among men all odds ratios for marital benefit were above 1.00 by active-confronting coping (e.g., show feelings, ask others for advice), passive-avoidance coping (e.g., hope for a miracle, only thing to do is to wait) and meaning-based coping (e.g., think about the infertility in a positive light, believe there is a meaning) indicating that these coping strategies are predictors of high marital benefit. Only medium use of active-confronting coping and meaning-based coping were significant predictors of high marital benefit ( $P < 0.10$ ). Among women only two odds ratios were above 1.00 (using the secrecy communication strategy, high use of active-confronting coping).

Among both women and men all odds ratios for marital benefit by using a formal communication strategy, having difficult partner communication, and by using an active-avoidance coping strategy (e.g., avoid being with pregnant women and children, turning to work or substitute activity in order to take mind off things) were below 1.00 indicating that these factors were predictors of low marital benefit at follow-up. Among men, having no difficulties in partner

communication and not using active-avoidance coping were significant predictors of high marital benefit. Further, among men using the secrecy communication strategy was a significant predictor of low marital benefit. Among women we identified no significant predictors of low marital benefit.

## 4. Discussion and conclusion

### 4.1. Discussion

We showed that high marital benefit was reported by a fourth of the women and a fifth of the men in a large study population of couples beginning ART. Peterson et al. [26] used the Dyadic adjustment scale (DAS) in a study of couples seeking fertility treatment but found no gender differences. Thus the gender differences in marital benefit and no gender differences in dyadic adjustment is still an unresolved issue. Around two-thirds of our participants strongly agreed or somewhat agreed that the infertility had brought the partners closer together and/or had strengthened the couples' relationship. Hence, a positive effect, a benefit of infertility on marriage was a common experience. We suggest it is important not only to study fertility problem stress but also to study benefits of infertility in order to help people to enhance their benefit of their infertility experience.

Among the predictors studied we found only significant predictors for high or low marital benefit among men. Keeping the infertility and its treatment as a secret was among men a significant predictor of low marital benefit. Van Balen and Trimbos-Kemper [27] studied long-term infertile couples and reported that men who did not communicate their infertility problem to others showed a lower level of well-being compared to those men who did talk about the infertility.

It is possible that one of the main influences on marital benefit is sexuality and having a happy sexual interrelationship. Newton et al. [10] reported that sexual concerns were

more frequent among women compared to men in infertile couples. This may be in contrast to our finding that high marital benefit was more common among women than men. Verhaak [12] demonstrated that among couples in ART treatment sexual dissatisfaction increased during treatment whether treatment was successful or not. In this light it is understandable that only a minority of our participants reported high marital benefit. Unfortunately we do not have data about the respondents sexual life.

Active-confronting coping (e.g., to show feelings, to seek advice, to talk with other people about emotional aspects of infertility) was for men a significant predictor of high marital benefit. Berghuis and Stanton [9] showed how approach-oriented coping, e.g., problem-focused coping, emotional processing, and expression, also predicted decreased distress among couples in insemination treatment.

Among men the active-avoidance coping strategy (e.g., to avoid pregnant women and children, to turn to work or other substitute activity to take mind off things) was a significant predictor of low marital benefit. Our previous analyses showed that high use of active-avoidance coping was also a significant predictor of fertility-problem stress both among men and women [28]. We interpret the active-avoidance strategy as a kind of defence strategy which protects the infertile participant from some of the emotional burden of the infertility experience. However, it seems from our longitudinal analyses that this coping strategy does not reduce stress and does not increase marital benefit.

Difficult partner communication was among men a significant predictor of low marital benefit. Marital relationship is an important source of support for couples facing infertility [9,15,29] and therefore difficulties in the communication between partners may be related to stress and low marital benefit. Pasch et al. [30] found that the quality of marital communication about infertility was less negative when the husbands wanted to talk with their wives about trying to have a baby. Abbey et al. [11] reported that a high level of received emotional support between spouses was related to increased marital life quality. They also reported that high level of received disregard was related to low marital life quality. We have only measured marital communication by a single item so we cannot ascertain which aspects of communication (e.g., frequency, content of the dialogues or satisfaction with communication) that were related to marital benefit. We have in another study evaluated an intervention with a communication training course for couples in fertility treatment and found that both female and male participants increased factual and emotional talks about infertility and treatment with their partner. Among women marital benefit increased significantly after the intervention [31].

We have previously shown that high marital benefit is significantly associated with higher importance ratings of patient-centred care and psychosocial services in fertility treatment [6]. Further, high marital benefit was a significant predictor of a positive evaluation of medical and patient-centred care [17].

We have used a prospective design allowing us to examine pre-treatment variables that may be predictors of high marital benefit. The study population was large and included consecutively 80.0% of all new couples at four large public fertility clinics and the response rate at follow-up was high (87.7%). Marital benefit, the communication strategy, and the coping strategies were studied with instruments developed specifically to measure these concepts in relation to infertility. Although these instruments were all carefully developed, they still need to be validated and tested for reliability in other infertile populations.

#### 4.2. Conclusion

High marital benefit as a consequence of the infertility process is a common experience both among women and men. We identified among men both communication and coping strategies that were significant predictors of marital benefit among those fertility patients who had not achieved a pregnancy or delivery during one year of treatment. Surprisingly marital benefit was not significantly associated with communication and coping strategies among women.

#### 4.3. Practice implications

Clinicians should be aware of the fact that a substantial part of couples in fertility treatment not only perceive stress but also marital benefit from their involuntarily experience as infertile couples. Among men, but not women, it is important to focus on men who are in great risk of not perceiving marital benefit: men who do not disclose and/or who use active-avoidance strategies and/or report difficult partner communication.

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