

The “Pregnant Man” — Expecting Fathers Experience Pregnancy-Related Changes: A Longitudinal Study With a Mixed Method Approach

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Abstract

Background: Fathers' mental and physical health is important for men's well-being, as well as for their partner's and children's health. The study objectives were to describe how expectant fathers experienced physical and emotional changes, the prevalence of the changes, and whether the sensations changed over time.

Methods: We used a longitudinal study with a mixed-method approach that included quantitative and qualitative data collected by questionnaires completed in their partner's mid-pregnancy and late pregnancy. Descriptive and inferential statistics and content analysis were used.

Results: In total, 871 Swedish expectant fathers participated. The proportion of emotional changes decreased from 60% in mid-pregnancy to 47% in late pregnancy ($P < 0.001$), and these changes included positive and negative impact on mental health, the emotional relationship developed with the partner and unborn baby, and reflections of fatherhood. Physical changes experienced increased from 12% in mid-pregnancy to 18% in late pregnancy ($P = 0.001$) and involved negative and positive aspects, or no impact on physical health. Physical changes reported implied change in the sexual relationship.

Conclusions: More than half the expectant fathers experienced some degree of emotional change during their partner's pregnancy, and one in five experienced physical changes. Emotional and physical changes affected the expectant fathers' mental and physical health. Expectant fathers seem to undergo a vulnerable process leading to fatherhood.

Keywords: expectant fathers, experiences, life change events, mixed method, physical and emotional changes

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Conflicts of Interest: none to declare.

Introduction

Expectant fathers are understood to be in a vulnerable life transition.^{1,2} During their partner's pregnancy, men may experience emotional and physical changes.^{1,3} and they may feel "pregnant." Becoming a father means a man's social role will change and his masculinity will be confirmed.³ The process behind emotional and physical changes is understood to incorporate the paternal role into a man's identity and to prepare him for his future role as a father. These experienced changes are known as Couvade syndrome, and its presence has been reported globally.⁴ The concept of Couvade syndrome was first introduced by Tyler in 1865⁴⁻⁶; the name is derived from the French word *couver*, which means *to brood, nest, or hatch*.^{4,6} Couvade syndrome has been described in anthropological literature as a reproductive ritual based on psychological processes shared by individuals in all societies. The rituals accompanying the syndrome vary a great deal, however, across cultures.⁵ The cause behind Couvade syndrome is unclear, but different explanations have been suggested, including (i) identifying with the expectant mother, (ii) experiencing ambivalence regarding fatherhood, (iii) considering the unborn baby a rival, and (iv) facing sexual and gender issues.⁴

Expectant fathers often experience their partner's pregnancy as emotionally demanding.^{7,8} An unknown future as a father may cause anxiety,^{3,9} and a man may feel unprepared and not ready to become a father.¹⁰ Worries about the health of partner and baby may also evoke anxiety.^{3,9,11,12} To gain control in the process of becoming a father, men search for information, discuss pregnancy and childbirth matters with their partner, and mentally prepare for the birth.⁹ Family and professional support have also been appreciated.^{1,9,13} The pregnant woman's increased sensibility is known to be a factor for change in the couple's relationship;¹⁴ her mood changes and unpredictable behavior can cause the man to feel somehow excluded. However, expectant fathers see their emotional and physical involvement increase gradually as the pregnancy progresses and becomes more "real."^{15,16} The experience of unreality often diminishes after the first ultrasound examination and once fetal movements and audible fetal heartbeats can be discerned in the second trimester.³

A wide range of physical and emotional changes have been described in association with Couvade syndrome, and these changes are experienced especially during early and late pregnancy.^{4,6,8,16,17} Expectant fathers have experienced

physical changes, such as gastrointestinal problems; appetite changes;^{6-8,14,16,18,19} nausea;^{6,7,16} weight gain/loss;^{6,7,14,16,19} stomach pains; vomiting;^{8,16} flatulence;¹⁹ upper-respiratory disturbances;⁶ musculoskeletal symptoms, like back pain;^{8,16,18} and genitourinary symptoms with micturition disturbance.⁸ Furthermore, emotional changes have included feelings of anxiety,^{6-8,14,18} restlessness, irritability,^{6-8,16,18} depression,^{6,8} fatigue,^{6,16,18} and sleep disturbances.^{6-8,14,16,18} The couple's sexual relationship is furthermore likely to change^{3,7,9,11,16,20} during pregnancy, when it is characterized by decreased frequency of sexual intercourse, increased gentleness, and a fear of hurting the pregnant partner.⁷ A general decrease in sexual relations during the third trimester has been described.^{14,20}

Expectant fathers' experience of anxiety has been positively associated with the total number of sensations of Couvade syndrome.¹⁸ Furthermore, personal distress and empathy have also been positively correlated with Couvade syndrome,¹⁹ and if the expectant father had a distant or absent father at an early age (< 12 years old) he is more likely to experience symptoms.^{4,14}

Fathers' mental and physical health is important for men's own well-being, as well as for their partner's and children's health.²¹ Expectant fathers have described physical and emotional changes during their partner's pregnancy, and understanding of the phenomenon is limited. Therefore, the aim of this study was to describe how expectant fathers experienced physical and emotional changes, the prevalence of the changes, and whether the sensations changed over time.

Materials and Methods

Design

This longitudinal study applied a mixed-method approach that included quantitative and qualitative data collected by questionnaires completed mid-pregnancy and in late pregnancy.²² The study was one part of a larger prospective longitudinal cohort study.²³

Participants and Procedure

Pregnant women (mid-pregnancy) and their partners were invited to participate in the study for one year (January 8, 2007 to January 8, 2008). The study participants were recruited in Mid Sweden within the catchment area of three hospitals. This study covers the women's partners, all of whom were men. The total number of ultrasound-screened pregnancies was

used as a proxy for the eligible partners ($n = 2512$). In total, 1,414 expectant fathers agreed to participate, and of those, 1,105 answered the first questionnaire in gestational weeks 17–19. The second questionnaire was delivered in gestational weeks 32–34 to 1,400 men, and of these, 928 answered. To be included in the present study, participants had to be able to use the Swedish language, an ultrasound must have identified a non-malformed living fetus, and participants needed to have answered both questionnaires ($n = 871$).

Instrument

The questionnaires comprised closed- and open-ended questions. The dependent variables were worded as follows: Do you feel any physical changes since your partner became pregnant? Do you feel any emotional changes since your partner became pregnant? There were four response alternatives: not at all, a little, somewhat, and very much. The answers were dichotomized to not at all and a little/somewhat/very much because of the skewedness of the answers. Furthermore, two open-ended questions were asked: 1) If you have experienced any physical changes, what are they? 2) If you have experienced any emotional changes, what are they? The following independent variables were used: the birth order of the expected baby, age, cohabiting/married, origin, level of education, infertility for more than a year, partner fertility treated, planned pregnancy, expectations about the upcoming birth (very positive, positive, both positive and negative, negative, very negative), level of childbirth fear (a great deal, some, a little, none), and level of support received from the female partner (a great deal, some, a little, none).

Data Analysis

For the quantitative data, descriptive and inferential statistics were used. The chi-square test and Fisher's exact test were used to explore the relationship between categorical variables; we used McNemar's test to analyze any changes over time.²⁴ The statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS), version 22.0. For the qualitative data, we used content analysis according to Berelson.²⁵ The data were reviewed several times to gain a sense of the whole. Codes were identified, and those with similar meanings were grouped together into sub-categories; eventually four overarching categories were explored for both the physical and

emotional changes experienced.

Ethical considerations: This study was approved by the Regional Research and Ethics Committee at Umeå University, Sweden (Dnr 05-134 Ö). Information was given to the study participants about the voluntary, anonymous, and confidential nature of participation. Pseudonyms have been used when quotes are cited.

RESULTS

Study Participants

In total, 871 expectant fathers participated in the study: 410 (47.1%) first-time fathers and 461 (52.9%) repeat fathers. The fathers' ages were between 15 and 66 years (mean 38 years). First-time fathers were more likely to be 35 or younger, to have experienced infertility for more than one year, and to have a partner who received fertility treatment. Furthermore, they were more likely to report some or a great deal of childbirth fear and to receive a great deal of support from their partners than were repeat fathers (Table 1).

Differences in the Prevalence of Physical and Emotional Changes

The expectant fathers experienced more emotional than physical changes during their partner's pregnancy. The prevalence of those changes is presented in Table 2.

The physical changes experienced by the men increased from 12% mid-pregnancy to 18% late pregnancy. According to McNemar's statistical test, this change was statistically significant ($P = 0.001$). The category Negative Impact on Physical Health was found to include most codes when the expectant fathers' physical experiences were described mid-pregnancy and late in the pregnancy. In late pregnancy, that category was 1.6 times more likely to describe negative physical experiences than it was mid-pregnancy. However, positive experiences also increased with pregnancy duration, but in fewer numbers of codes (see Table 3 for more information).

McNemar's statistical test pointed out a significant change ($P < 0.001$) in the proportion of expectant fathers' emotional experiences between mid-pregnancy (60%) and late pregnancy (47%). The qualitative data analysis found that the category Positive Impact on Mental Health included the most codes

Table 1. Study Participants' Background Characteristics

	First-time fathers n = 410 n (%)	Repeat fathers n = 461 n (%)	P -value
Age (years)			
< 25	40 (9.8)	6 (1.3)	
25–35	301 (73.4)	286 (62.6)	
> 35	69 (16.8)	165 (36.1)	<0.001
Cohabiting/Married			
Yes	340 (97.4)	389 (99.2)	
No	9 (2.6)	3 (0.8)	0.077
Origin			
Swedish	339 (97.4)	372 (95.9)	
Other	9 (2.6)	16 (4.1)	0.344
Level of Education			
Comprehensive / highschool	242(61.4)	262(59.3)	
College / university	152(38.6)	180(40.7)	0.574
Infertility > 1 year			
Yes	78 (19.2)	45 (9.8)	
No	329 (80.8)	413 (90.2)	<0.001
Partner Fertility Treated			
Yes	38 (9.4)	19 (4.2)	
No	368 (90.6)	436 (95.8)	0.004
Planned Pregnancy			
Yes	230 (74.0)	356 (77.7)	
No	81 (26.0)	102 (22.3)	0.263
Expectations About Upcoming Birth			
Very positive or positive	328 (80.0)	347 (75.3)	
Other than exclusively positive	82 (20.0)	114 (24.7)	0.113
Level of Childbirth Fear			
A Great deal or some	29 (7.1)	15 (3.3)	
A little or none	379 (92.9)	444 (96.7)	0.016
Support Received From Partner			
A great deal	272 (67.7)	242 (53.8)	
Some, a little, or none	130 (32.3)	208 (46.2)	<0.001

*Categories may not sum 100% due to missing numbers.

Table 2. Prevalence of Physical and Emotional Changes During Pregnancy

	Changes in mid-pregnancy		Changes in late pregnancy	
	Physical n = 834 n (%)	Emotional n = 854 n (%)	Physical n = 896 n (%)	Emotional n = 901 n (%)
Very much	2 (0.2)	13 (1.5)	6 (0.7)	10 (1.1)
Somewhat	6 (0.7)	108 (12.6)	24 (2.7)	73 (8.1)
A little	95 (11.4)	388 (45.4)	132 (14.7)	341 (37.8)
Not at all	731 (87.6)	345 (40.4)	734 (81.9)	477 (52.9)

Table 3. Categories of Physical and Emotional Experiences Explored by Qualitative Data Analysis

	In mid-pregnancy Number of codes included	In late pregnancy Number of codes included
Physical Experiences		
Negative impact on physical health	75	124
Positive impact on physical health	3	18
No impact on physical health	9	5
Changed sexual relationship with partner	5	3
Emotional Experiences		
Positive impact on mental health	185	81
Negative impact on mental health	145	145
Emotional relationship developed with partner and baby	59	42
Reflections on fatherhood	33	27

mid-pregnancy, but the number decreased by 44% late in the pregnancy. The category Negative Impact on Mental Health included the second-most number of codes mid-pregnancy, and this number did not change late in the pregnancy (Table 3).

Physical Changes Experienced

Mid-pregnancy, 103 (12.4%) expectant fathers experienced physical changes, and these men were more likely to be aged ≤ 35 years than were those who did not experience any physical changes ($n = 731$; 87.6%) (Table 4). Late in their partner's pregnancy, 162 (18.1%) expectant fathers experienced physical changes, and these men were more likely to be of non-Swedish origin than were those who reported no experience of physical changes ($n = 734$; 81.9%) (Table 4). Of the men who experienced physical changes, 85 gave a

comment of these changes in mid-pregnancy, and 145 did so late in the pregnancy. The qualitative data analysis of these comments explores four categories of the expectant fathers' physical experiences: negative, positive, or no impact on their physical health and changes in the sexual relationship with their partner (Table 3).

A negative impact on physical health included poor physical condition, weight gain, increased appetite, and tiredness. Furthermore, some respondents experienced increased sensitivity and pain in the skin, back, head, back of the neck, legs, or joints. Discomfort associated with heartburn, colds, frequent urination, dyspnoea, a sharpened sense of smell, and nausea was also reported. A positive impact on physical health entailed being in good physical condition, experiencing

Table 4. Physical Changes Experienced by the Expectant Fathers in Relation to Background Characteristics

	Changes in mid-pregnancy			Changes in late pregnancy		
	yes n = 103 n (%)	no n = 731 n (%)	P -value	yes n = 162 n (%)	no n = 734 n (%)	P-value
Birth Order of Expected Baby						
1st	52 (52.0)	340 (47.2)		73 (50.3)	331 (47.0)	
2nd–6th	48 (48.0)	380 (52.8)	0.430	72 (49.7)	373 (53.0)	0.523
Age (Years)						
< 25	10 (9.7)	37 (5.1)		13 (8.6)	35 (4.9)	
25–35	76 (73.8)	493 (67.7)		93 (61.2)	494 (69.5)	
>35	17 (16.5)	198 (27.2)	0.019	46 (30.3)	182 (25.6)	0.072
Cohabiting/Married						
Yes	86 (96.6)	615 (98.6)		128 (97.0)	603 (98.5)	
No	3 (3.4)	9 (1.4)	0.180	4 (3.0)	9 (1.5)	0.262
Origin						
Swedish	83 (93.3)	601 (97.2)		121 (92.4)	593 (97.7)	
Other	6 (6.7)	17 (2.8)	0.096	10 (7.6)	14 (2.3)	0.004
Level of Education						
Comprehensive/highschool	53(56.4)	430(60.6)		80(54.8)	420(61.2)	
College/university	41(43.6)	280(39.4)	0.506	66(45.2)	266(38.8)	0.178
Infertility > 1 year						
Yes	14 (13.6)	103 (14.2)		22 (14.7)	101 (14.2)	
No	89 (86.4)	623 (85.8)	0.991	128 (85.3)	610 (85.8)	0.985
Partner Fertility Treated						
Yes	9 (8.7)	48 (6.6)		14 (9.4)	45 (6.3)	
No	94 (91.3)	677 (93.4)	0.558	135 (90.6)	664 (93.7)	0.246
Planned Pregnancy						
Yes	74 (80.4)	483 (75.1)		91 (70.0)	491 (77.7)	
No	18 (19.6)	160 (24.9)	0.325	39 (30.0)	141 (22.3)	0.077
Expectations About Upcoming Birth						
Very positive or positive	78 (75.7)	573 (78.4)		118 (72.8)	582 (79.3)	
Other than exclusively positive	25 (24.3)	158 (21.6)	0.629	44 (27.2)	152 (20.7)	0.090
Level of Childbirth Fear						
Great deal or some	9 (8.7)	31 (4.3)		5 (3.3)	36 (5.1)	
A little or none	94 (91.3)	696 (95.7)	0.082	147 (96.7)	675 (94.9)	0.470
Support Received from Partner						
A great deal	62 (60.2)	441 (61.2)		94 (63.1)	421 (60.1)	
Some, a little or none	41 (39.8)	280 (38.8)	0.935	55 (36.9)	280 (39.9)	0.552

The categories may not sum to 100% due to missing numbers.

Table 5. Emotional Changes Experienced by Expectant Fathers, in Relation to Background Characteristics

	Changes in mid-pregnancy			Changes in late pregnancy		
	yes n = 509 n (%)	no n = 345 n (%)	P -value	yes n = 424 n (%)	no n = 477 n (%)	P -value
Birth Order of Expected Baby						
1st	268 (53.7)	133 (39.2)		240 (59.7)	166 (36.9)	
2nd–6th	231 (46.3)	206 (60.8)	<0.001	162 (40.3)	284 (63.1)	<0.001
Age (Years)						
< 25	27 (5.3)	21 (6.1)		25 (6.1)	23 (5.0)	
25–35	342 (67.3)	237 (69.1)		275 (67.6)	314 (68.4)	
> 35	139 (27.4)	85 (24.8)	0.654	107 (26.3)	122 (26.6)	0.768
Cohabiting/Married						
Yes	421 (97.5)	294 (99.7)		338 (97.4)	395 (99.0)	
No	11 (2.5)	1 (0.3)	0.033	9 (2.6)	4 (1.0)	0.158
Origin						
Swedish	417 (97.2)	281 (96.2)		390 (95.7)	386 (97.7)	
Other	12 (2.8)	11 (3.8)	0.609	15 (4.3)	9 (2.3)	0.168
Level of Education						
Comprehensive/highschool	279 (57.4)	214(63.5)		230 (58.1)	272(61.8)	
College/university	207(42.6)	123(36.5)	0.093	166(41.9)	168(38.2)	0.303
Infertility > 1 Year						
Yes	85 (16.8)	36 (10.5)		56 (13.8)	66 (14.4)	
No	422 (83.2)	306 (89.5)	0.014	350 (86.2)	392 (85.6)	0.871
Partner Fertility Treated						
Yes	40 (7.9)	18 (5.3)		22 (5.4)	37 (8.1)	
No	465 (92.1)	324 (94.7)	0.173	382 (94.6)	420 (91.9)	0.161
Planned Pregnancy						
Yes	325 (73.5)	247 (79.9)		261(75.7)	323 (76.9)	
No	117 (26.5)	62 (20.1)	0.052	84(24.3)	97 (23.1)	0.749
Expectations About Upcoming Birth						
Very positive or positive	383 (75.2)	279 (80.9)		314 (74.1)	387 (81.1)	
Other than exclusively positive	126 (24.8)	66 (19.1)	0.065	110 (25.9)	90 (18.9)	0.013
Level of Childbirth Fear						
Great deal or some	30 (5.9)	12 (3.5)		27 (6.6)	14 (3.1)	
A little or none	477 (94.1)	331 (96.5)	0.151	381 (93.4)	444 (96.9)	0.021
Support Received From Partner						
A great deal	304 (60.6)	207 (60.9)		246 (61.5)	271 (59.8)	
Some, a little or none	198 (39.4)	133 (39.1)	0.982	154 (38.5)	182 (40.2)	0.667

*Categories may not sum 100% due to missing numbers.

weight loss, being strong, alert, and generally healthier. Less discomfort in the stomach and in the back of the neck was mentioned.

A few expectant fathers reported no impact on their physical health, and the comments of these respondents included statements such as “I’m not the one who is pregnant” and “I’m a man.” Some expectant fathers pointed out a changed sexual relationship characterized by less lust for sex and a greater understanding of pregnancy in their comments about their physical changes.

Emotional Changes Experienced

Mid-pregnancy, 509 (59.6%) expectant fathers experienced emotional changes; these men were more likely to be first-time fathers, to not cohabit/be married with their partner, and to have experienced infertility for more than one year than were the men who did not experience any emotional changes ($n = 345$; 40.4%) (Table 5).

In late pregnancy, 424 (47.1%) expectant fathers experienced emotional changes, and these men were more likely to be first-time fathers, to have negative expectations about the upcoming birth, and to report greater childbirth fear than were those who did not experience emotional changes ($n = 477$; 52.9%) (Table 5).

Of the men who reported undergoing emotional changes, 341 submitted their comments mid-pregnancy, and 245 men did so late in their partner’s pregnancy. The qualitative data analysis explored four categories of the expectant fathers’ emotional experiences: Positive Impacts on Mental Health, Negative Impacts on Mental Health, Emotional Relationship Developed with the Partner and Baby, and Reflections on Fatherhood (Table 3).

Category A (Positive Impact on Mental Health) included three sub-categories: delight, pleasure, and emotional balance. When delighted, the expectant fathers experienced joy, happiness, and exhilaration. The subcategory pleasure included comments about feeling wonderful, passionate, cheerful, proud, fantastic, blissful, agog, curious, delighted, and hopeful. One man said, “It’s exciting becoming a father.” Emotional balance was described in the comments as feeling peaceful, relaxed, at ease, satisfied, harmonious, secure,

relieved, and patient. Having had previous experience of childbirth facilitated emotional balance: two respondents said, “I’m a father already,” and “[I’m] better prepared.”

Category B (Negative Impact on Mental Health, comprised the two sub-categories, worries and emotional unbalance. Expectant fathers were worried about their partner and baby, expressing this in terms of concerns about a miscarriage or [that there will be] something wrong with the baby and being more worried about “my partner’s well-being.” These men experienced pressure and strain; one reported that the situation was “very demanding [because of] my partner’s hormonal changes—certainly normal, but much more than I could have imagined.” Furthermore, some respondents reported anxiety, fear, panic, and shock. The sub-category ‘emotional unbalance’ was described as being more sensitive and experiencing mood swings. One man described this as “more easily laughing and weeping.” Another said, “The sentimental father is developing,” and another reported “bigger shifts between exhilaration and depressed feelings.” Loss of control was also experienced alongside feelings of confusion, not understanding, impatience, indecision, and not being prepared for the pregnancy and fatherhood. One respondent said pregnancy was “difficult to understand when I’m not carrying the baby inside me,” still another admitted, “[I’m] not sure I wanted this.”

The third category, Emotional Relationship Developed with the Partner and Baby, described the expectant fathers’ strong feelings towards their partner and baby in a contradictory way. Three sub-categories were identified and labeled as follows: decreased contact with the partner, responsibility, and love and tenderness. The women became more sensitive and unstable during pregnancy, and the expectant fathers described decreased contact with their partners; this included a poor sex life: “I have less lust for sex;” “We don’t have so much sex.”

The subcategory *responsibility* was defined in relation to the partner and to becoming a parent, which included “growing up” as men. The men became more protective and now had different priorities in life. As one man explained, “We are not alone any longer, [and I have a] bigger responsibility; I’m more aware of Eleanor’s safety.”

The subcategory love and tenderness included experiences

of being close, caring, sensitive, and kind towards the partner and the unborn baby. Two comments attested “more affection on another level” and “maybe I love my girlfriend even more now.”

Thoughtfulness about life as a parent appeared in the last category, labeled Reflections on Fatherhood. The question these men asked themselves was whether they had “grown up” now; furthermore, they tried to imagine the parental role and hoped for a prosperous childhood for the baby. One expectant father said, “I realize now that I’m going to be a father, and I have both good and bad feelings about it; how will this influence my life?”

Discussion

This study could have been carried out differently. In order to generalize the findings to other settings, a randomized controlled study involving more than one county is preferable. Another limitation is the questions used, which did not explicitly focus on Couvade syndrome, due to its unclear definition. However, using a mixed-method design gave us the opportunity to better explore the complexity of expectant fathers' physical and emotional changes. One advantage of the study is its fairly large sample size, though this was limited to include only participants who spoke Swedish. However, the result of this study pointed out that more than half the expectant fathers experienced some degree of emotional change during their partner's pregnancy, and one in five experienced physical changes. The proportion of emotional changes was found to decrease from 60% mid-pregnancy to 47% late in pregnancy, and these changes included positive and negative impact on mental health, emotional relationship developed with the partner and unborn baby, and reflections of fatherhood. Physical changes experienced increased from 12% in mid-pregnancy to 18% in late pregnancy, which involved negative and positive aspects, or no impact on physical health. Physical changes reported implied change in the sexual relationship.

Prevalence of Emotional and Physical Changes

This study found that approximately half the fathers surveyed experienced emotional changes, and one in five experienced physical changes during their partner's pregnancy. Previously, the prevalence of such emotional and physical changes—that is, of Couvade syndrome—has been estimated at anywhere from 11–97% in studies from the UK, Sweden, the

United States, Thailand, China, and Russia. However, the lack of a clear definition for the syndrome calls for caution when comparing its prevalence in different countries and cultures.⁶ We discovered a decrease in the emotional changes experienced between the second and the third trimester. Other research has described, in contrast, that Couvade syndrome increases profoundly from the second to the third trimester. But our finding of increased physical changes from the second to the third trimester corroborates previous research.^{6,8,17}

Expectant Fathers' Mental Health

Comments related to a positive impact on expectant fathers' mental health were explored in this study; however, the number of comments declined from mid-pregnancy to late pregnancy. Delight, pleasure, and emotional balance constituted the positive impact on fathers. Being emotionally balanced was important for the fathers' mental health, and having had previous experience with pregnancy and childbirth facilitated emotional balance. Furthermore, fathers who experienced either positive or negative emotional changes were most likely first-time fathers. Expectant fathers in previous studies have described feelings of happiness,^{9,11} excitement, and pride at being told they were going to be fathers.¹¹

Pregnancy was found to also have a negative impact on expectant fathers' mental health. The fathers worried about the partner's and the baby's health, they experienced childbirth fear, and they were anxious. Furthermore, the expectant fathers who experienced childbirth fear were more likely to report emotional changes. Fathers' experience of anxiety is included in Couvade syndrome.^{6–8,14,18} and has been associated with a number of emotional and physical changes.¹⁸ Experience of anxiety has been found more likely to increase in late pregnancy¹⁴; and anxiety has been related to the experience of Couvade syndrome.^{18,19}

Childbirth fear was one aspect of the emotional changes that men experienced during their partner's pregnancy. Fear of childbirth was found among 13% of those surveyed by Eriksson and colleagues,²⁶ Hildingsson and colleagues^{27,28} and Chalmer and Myer.¹¹ Poorer mental and physical health was experienced by expectant fathers who reported childbirth fear than by those with no such fear.²⁷ Furthermore, expectant fathers with childbirth fear were more likely expecting their first baby.²⁸ Of 928 expectant Swedish fathers, 10% described poor self-

rated emotional health late in their partner's pregnancy. This poor health was associated with repeat fathers, childbirth fear, pronounced emotional changes, and perceived stress related to facing parenthood.²⁹ Men with negative expectations about the upcoming birth were more likely to experience emotional changes. Further, expectant fathers with childbirth fear have been found more likely to perceive difficulties associated with the birth.²⁷

Another negative impact on mental health was emotional unbalance, along with mood swings and a loss of control. Wilkes and others¹⁰ investigated seven Australian adolescent men's experiences of becoming a father. All the pregnancies were unplanned, and they felt ill prepared for fatherhood. However, they were each willing to face the responsibility of being a good father, which included being present, available, reliable, loving, and responsible as a parent. The expectant fathers experienced both positive and negative emotions. Fear regarding the responsibility of being a father and about financial issues was experienced. Similar results were found by Finnbogadottir and colleagues:³ expectant Swedish fathers felt insecure in the new role of a father; they asked themselves whether this was what they wanted. Moreover, they experienced anxiety when they did not have control of the childbirth situation.

Expectant Fathers' Physical Health

Experiences of a negative impact on physical health increased with pregnancy duration, and the fathers reported poor physical condition, weight gain, increased appetite, and tiredness. They also experienced different kinds of pain, heartburn, nausea, and colds, which also aligns with other findings.^{6-8,14,18,19} Previously, 19% of 928 Swedish expectant fathers reported poor self-rated physical health late in their partner's pregnancy. This poor health was associated with backache, the pregnancy's wrong timing, and pronounced physical changes.²⁹

In an interview study that Clinton¹⁷ conducted in the United States, 81 expectant fathers were compared with matched 66 non-expectant fathers. The expectant fathers were more likely during their partner's first trimester of pregnancy to have a cold, but during the second trimester there were no differences found between the groups. The expectant fathers were more likely in the third trimester to experience unintentional weight

gain and sleep disturbances. In a Canadian study by Laplante,¹⁴ expectant fathers experienced more physical symptoms of Couvade syndrome if their own father had been distant or absent when they were young (< 12 years old).

Conclusions

More than half the expectant fathers experienced some degree of emotional change during their partner's pregnancy, and one in five experienced physical changes. Emotional and physical changes affected the expectant fathers' mental and physical health. Expectant fathers seem to undergo a vulnerable process leading to fatherhood.

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