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Life Satisfaction and Transition to Parenthood

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Life Satisfaction and Transition to Parenthood

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Life Satisfaction and Transition to Parenthood

Abstract

A large of body of evidence reports an adverse effect of children on parental life satisfaction. Several alternative hypotheses have been proposed to explain this effect including after-birth changes in time schedules of both parents, in relationship dynamics and in division of labour between parents. The majority of these explanations are based on comparisons of life satisfaction before and after having children or life satisfaction of childless couples and parents. Yet, very little is known about the dynamics of parents' life satisfaction when they are expecting a child. We explore transition to parenthood during pregnancy as an alternative explanation to decline in parental life satisfaction after childbirth. In a multi-country field experiment where mothers and their partners are approached at different stages of pregnancy as well as after childbirth, we find that life satisfaction follows a U-shaped pattern decreasing towards the middle of pregnancy and then improving at the late stage of pregnancy and after childbirth. Our results show that despite an increase in life satisfaction towards the late stage of pregnancy, satisfaction levels in both mothers and partners fail to reach levels equivalent to those observed at the early stages of pregnancy although, after childbirth, men tend to be more satisfied with their life than women.

Keywords: life satisfaction, transition to parenthood, wellbeing, children

One Sentence Summary: Life satisfaction follows a U-shaped pattern during transition to parenthood which may explain adverse effect of children on parental wellbeing.

Introduction

A large body of literature studies the effects of children on parental life satisfaction using population samples from various countries and a wide range of wellbeing measures applied to individuals as well as couples. The majority of research results in this area show negative association between having children and parental life satisfaction (e.g., McLanahan and Adams, 1987; Gilbert, 2006). For example, in the US, parents with children under the age of 18 report higher levels of psychological distress and lower levels of life satisfaction than other adults (Bird, 1997). Furthermore, parental life satisfaction appears to decline after childbirth and improve only when children move out of their parents' house in their teenage years (e.g., Gilbert, 2006)

Despite numerous attempts to find the reasons for this negative association, there is little convergence of explanations. Several research papers argue that having children creates additional pressures for couples due to decreased levels of interaction between partners; another strand of literature proposes that life satisfaction decreases due to additional financial pressures; while some studies suggest that the decline in psychological wellbeing is caused by increased dissatisfaction with the division of labour between parents (see, e.g., White et al., 1986 for a review of the early literature). Despite the apparent variety of explanations, they all concentrate on the changes which individual parents and couples undergo *after* childbirth. For this reason, many studies concentrate on comparing parental life satisfaction, physical or psychological wellbeing *before* and *after* children are born (e.g., Ball et al., 1993; Margolis and Myrskylä, 2010). In contrast to these studies, we propose that the decline in satisfaction levels occurs *during* transition to parenthood, specifically, during pregnancy in women and spouse/partner pregnancy in men.

Our hypothesis is that parental satisfaction levels are likely to follow a U-shaped pattern during a specific life event – pregnancy – which may explain why life satisfaction drops between pre- and post-pregnancy period. The intuition behind this hypothesis is the following. At the early stages of (planned) pregnancy, parents are likely to be excited about having a child which increases their life satisfaction. This enthusiasm may die down as pregnancy progresses and then increase again after the child is born. Yet, transition to parenthood during pregnancy changes a wide variety of individual factors (for example, highly probable weight gain for women) as well as couple dynamics (for example, parents tend to spend less time together as a couple) which generates an asymmetry in the U-shape: satisfaction levels fail to reach pre-natal levels. We design a simple field experiment to test this hypothesis.

Pregnancy is a significant event which is likely to influence individuals as well as couples. Yet, very little is known about whether and how parental satisfaction levels change throughout pregnancy. Most research on

pregnancy and life satisfaction focuses on the presence of negative feelings in women. In particular, the prevalence of pre- and postnatal depression has received a lot of attention in the literature (e.g., Evans et al., 2001; Dipietro et al., 2008; and Eberhard-Gran et al., 2004). In this literature, an emphasis is made either on the depression in females during early stages of pregnancy and after childbirth as well as on how this depression may affect partners (e.g., Matthey et al., 2000; Salmela-Aro et al., 2006; and Escribà-Agüir et al., 2008) or on the effects of demographic characteristics on life satisfaction and wellbeing during pregnancy (e.g., Hagstrom and Wu, 2010). In a rather unusual study, Hoffenaar et al. (2010) use the Day Reconstruction Method (DRM) to investigate wellbeing during pregnancy in terms of both positive and negative affect as well as life satisfaction by asking women to systematically reconstruct their daily activities and experiences. They find no impact of new-born children on mothers' satisfaction levels. However, Hoffenaar et al. (2009) study covers a very limited period of 2 months: 4 weeks before and 4 weeks after delivery and reports data for a small sample of 19 first-time mothers.

We recruit 334 parents (both women and men) from two countries at different stages of pregnancy/partner pregnancy as well as after childbirth and test (a) whether parental life satisfaction levels decline during pregnancy and increase after children are born and (b) whether the level of life satisfaction after childbirth is lower than that at the early stage of pregnancy.

Results

We approached 185 parents in UK (110 pre- or post-natal mothers and 75 partners) and 149 parents in Ukraine (all pre- or post-natal mothers) who took part in the study. For different reasons, in our UK sample, partners were not always available to complete the survey in which case replies were collected from mothers only. In Ukraine, we were unable to obtain data from partners.[1]

Pregnancy usually lasts approximately 40 weeks and can be divided into 3 trimesters: first (weeks 1 to 13), second (weeks 14 to 27) and third (weeks 28 to 40). As a rule, pre-natal mothers attend two ultrasound scans during pregnancy. The first scan is the so-called "dating scan" which takes place during the first trimester of pregnancy (usually around week 12). This scan allows the determination of an estimated date of delivery (EDD). The second scan is the so-called "anomaly scan" which takes place during the second trimester (around week 20). This scan checks for structural anomalies in the baby as well as allows the detection of the gender of the future child. Week

[1] This is due to the fact that the culture of partner participation during pregnancy is quite different between UK and Ukraine as in Ukraine partners rarely attend parental classes and/or doctors' appointments together with pre- and post-natal mothers. Even though we did not intentionally focus on heterosexual couples, in both samples of our study, all parents were heterosexual. Therefore, in this study "mothers" always refers to female participants and "partners" to male participants.

20 can also be taken as a mid-point of the pregnancy period. In order to test our research hypothesis that life satisfaction levels decline due to transition to parenthood during pregnancy, we approached pre- and post-natal mothers as well as partners at different stages of pregnancy (between week 11 and week 39 in the British sample and between week 7 and week 39 in Ukrainian sample) as well as after childbirth.[2]

Life satisfaction was measured by a simple self-reported question which asked the participants to separately state their life satisfaction level on a scale from 1 (completely dissatisfied) to 7 (completely satisfied). Figure 1 below provides the screenshot of the question used in our experiment.

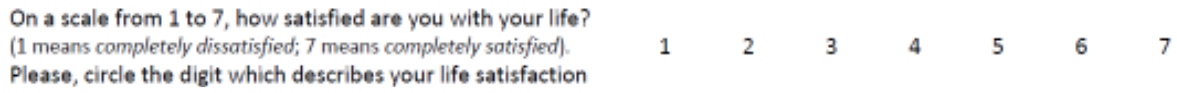

Figure 1 Life and Job Satisfaction Questions Used in the Experiment

In addition to the question about life satisfaction (see Figure 1 above); we also used an anxiety measure consisting of 20 questions; and 18 demographic questions. Since pregnant women are likely to experience sudden mood swings and post-natal mothers may suffer from depression, anxiety measure was necessary in order to control for emotional states of participants during the study. In order to measure anxiety, we used the State-Trait Anxiety Inventory (STAI) scale to measure anxiety and emotional states of the respondents. Figure 2 below provides questions used to measure anxiety levels. This measure provides 10 "positive" statements (e.g., "I feel calm") and 10 "negative" statements (e.g., "I feel tense") about individual emotional states. Participants are invited to indicate whether and to what extent these statements describe how they feel using a 4-point scale from 1 ("Not at all") to 4 ("Very much so").

For convenience, we take scores from "positive" statements as they are and calculate the reverse of scores from the "negative" statements to construct an individual measure which represents a measure of anxiety. This measure ranges between 20 and 80 (the higher is the score, the less anxious is the participant). In our analysis of individual levels of life satisfaction, we correlate our satisfaction measures with individual STAI scores.

For all participants we recorded either their week of pregnancy (women) or the week of their spouse's/partner's pregnancy (men). Since parents who were approached after childbirth were unable to provide the week of pregnancy, for these participants the week of pregnancy was assumed to be week 41.

[2] The majority of parents who were approached after birth, took part in the study within 4 weeks after their child was born.

Read each statement and select the appropriate response to indicate how you feel right now, that is, at this very moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

		Not at all	A little	Somewhat	Very much so
1	I feel calm	☐	☐	☐	☐
2	I feel secure	☐	☐	☐	☐
3	I feel tense	☐	☐	☐	☐
4	I feel strained	☐	☐	☐	☐
5	I feel at ease	☐	☐	☐	☐
6	I feel upset	☐	☐	☐	☐
7	I am presently worrying over possible misfortunes	☐	☐	☐	☐
8	I feel satisfied	☐	☐	☐	☐
9	I feel frightened	☐	☐	☐	☐
10	I feel comfortable	☐	☐	☐	☐
11	I feel self-confident	☐	☐	☐	☐
12	I feel nervous	☐	☐	☐	☐
13	I feel jittery	☐	☐	☐	☐
14	I feel indecisive	☐	☐	☐	☐
15	I am relaxed	☐	☐	☐	☐
16	I feel content	☐	☐	☐	☐
17	I am worried	☐	☐	☐	☐
18	I feel confused	☐	☐	☐	☐
19	I feel steady	☐	☐	☐	☐
20	I feel pleasant	☐	☐	☐	☐

Figure 2: State-Trait Anxiety Inventory (STAI) Scale Used in the Experiment

All participants also answered demographic questions about their age, income, education, as well as family composition. In the UK sample, 59.7% of our participants were female while the Ukrainian sample all participants were female. The mean age of female participants in the UK was 30.3 and male 33.9 years. In Ukraine, the average age was 26.2 years of age. More than half of our participants (61.8 % in the UK and 78.3% in Ukraine) were married. For an overwhelming majority of participants (over 80% in both Ukrainian and British samples), the pregnancy was planned. Over 80% of participants were employed in the UK sample and over 46% - in Ukrainian sample. Participants also indicated their level of education from School (the lowest) to Doctoral degree (the highest). They also indicated their income level from Low (score of 1) and equivalent to an annual household income of £25,000 or less in the UK and an equivalent of 1,000 Ukrainian Hrivnia's (UAH) monthly household income in Ukraine to high (score of 4) and equivalent to an annual household income of £65,000 or more in the UK and over 4,000 UAH monthly household income in Ukraine. In addition, we collected data on whether participants smoked and kept pets.

In the UK sample, 94 of 186 participants were asked to answer experimental questions using paper and pen in the maternity unit's waiting room at a large hospital before their doctor's/midwife's appointments. Since these participants were filling out experimental forms *on site*, they received small payments for filling out the questionnaire (£3 each). Other participants received questions in the mail. These participants were not paid for their participation in the study and had an opportunity to answer questions *in*

their own time. In the Ukrainian sample, participants did not receive payment for answering the questions. Our analysis (provided below) reveals that there are no statistically significant differences between behaviour observed in paid and unpaid treatment variations of the study.

We conducted multiple regression analysis on cross-sectional data from the survey using 3 subsamples: Partners UK (N=75), Mothers UK (N=110), Mothers Ukraine (N=149). In all three, results show strong U-shape trend: life satisfaction decreases during the early stage of pregnancy reaching its lowest point between week 20 and week 30 and then increases toward the end of pregnancy. This allows us to pool data from all three subsamples to produce an overall summary graph (see Figure 3 below).

Interestingly, Figure 3 shows that U-shaped pattern is slightly different for women and men. Particularly, while women's life satisfaction after birth appears to be considerably lower than their satisfaction at the early stages of pregnancy, men's life satisfaction after birth reaches approximately the same level as at the early stage of their spouse's/partner's pregnancy. This suggests that, on average, men (a) adapt quicker to the new parenting role and (b) recover quicker from any initial emotional shocks. Obviously, there could be multiple reasons for this result including the fact that, unlike male parents, female parents naturally have more tasks related to the child's upbringing in the first months as well as the fact that female parents often have to temporarily suspend the development of their careers while men usually continue working.

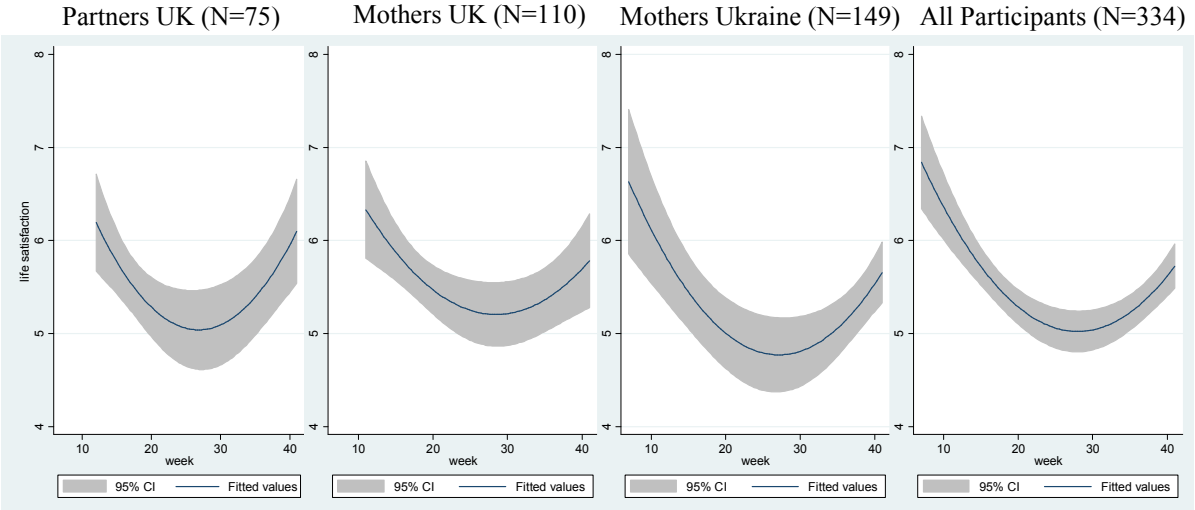

Figure 3: Life satisfaction results: OLS regression fit without control variables

Additionally, the decline in satisfaction levels seems to be more substantial in the Ukrainian sample, where mothers report lower satisfaction levels between week 20 and week 30 of pregnancy than mothers and partners in the British sample (see Figure 2). While there are many possible reasons for this observation, it may be that this effect is caused by cultural differences

between British and Ukrainian parents. In Ukraine, men rarely attend parental classes and/or doctors' appointments with their spouses/partners. In other words, low participation rates among Ukrainian men in coping with pressures associated with their spouses'/partners' pregnancies are common. Therefore, while British parents tend to face challenges of transition to parenthood together, Ukrainian women are likely to deal with these challenges alone.

In order to understand whether observed U-shaped patterns are robust, we conduct regression analysis with a number of control variables. Results of this analysis for each of the 3 subsamples is separately presented in Table 1 and for the pooled data – in Table 2. Our analysis presented in Figure 3, Table 1 and Table 2 confirms that life satisfaction follows a U-shaped pattern during pregnancy and after childbirth. This result holds when we add control variables to our analysis. Tables 1 and 2 show that life satisfaction generally decreases with the week of pregnancy. At the same time, week of pregnancy squared is positive and statistically significant suggesting that life satisfaction follows a U-shaped pattern during pregnancy.

Incentives provided to participants, age, income level, marital status, employment status, education, smoking, first-time parenting and even planning of pregnancy do not appear to have an effect on parental life satisfaction. The only demographic characteristic which produces statistically significant result at 5% level is gender: male parents appear to be more satisfied with their life than female parents.

Parents who have pets are happier than those who do not. This result may suggest that having pets helps individuals to deal with the pressures of the transition to parenthood not only because pets tend to bring positive emotions and improve psychological wellbeing (see, e.g., Herzog, 2011 for detailed discussion of this literature) but also because having pets in many cases means taking responsibility and providing care. The fact that pets require attention and time may help parents adjust quicker to the challenges of the transition to parenthood.

Interestingly, less anxious parents according to our measure of anxiety tend to be more satisfied with their life than more anxious parents (in Table 2 estimations variable *Anxiety measure* is significant at 0.1% level). Since anxiety level is highly significant in all regressions, it is important to check whether the anxiety measure follows the same pattern throughout pregnancy as life satisfaction as in this case the decline in parental life satisfaction could be explained by an increase in anxiety levels of parents.

Table 1: Determinants of Life Satisfaction during transition to parenthood by sample

	Without control variables				With control variables			
	b	**SE**	**t**	**P**	**b**	**SE**	**t**	**P**
Partners UK	*N=75, R^2= 0.1454*				*N=58, R^2= 0.4188*			
Constant	8.818	0.999	8.830	<0.001	4.258	3.171	1.340	0.187
Pregnancy week	-0.282	0.083	-3.400	0.001	-0.208	0.097	-2.150	0.037
Pregnancy week^2	0.005	0.002	3.490	0.001	0.004	0.002	2.110	0.041
Age of parent					-0.046	0.186	-0.250	0.807
Age of parent^2					0.001	0.003	0.310	0.758
Anxiety measure					0.045	0.016	2.910	0.006
Treatment					0.080	0.299	0.270	0.792
Income					-0.006	0.151	-0.040	0.968
Married					-0.204	0.346	-0.590	0.560
Employed					0.191	0.466	0.410	0.684
Study					0.428	0.800	0.540	0.595
Education					0.146	0.122	1.200	0.238
Smoking					-0.293	0.440	-0.660	0.510
Pets					0.521	0.340	1.530	0.133
First time parent					-0.033	0.330	-0.100	0.920
Planned pregnancy					0.581	0.470	1.240	0.224
Mothers UK	*N=110, R^2=0.0812*				*N=86, R^2= 0.3150*			
Constant	8.196	0.844	9.710	<0.001	6.362	3.718	1.710	0.091
Pregnancy week	-0.210	0.069	-3.030	0.003	-0.203	0.077	-2.630	0.010
Pregnancy week^2	0.004	0.001	2.910	0.004	0.004	0.001	2.480	0.016
Age of parent					-0.069	0.252	-0.270	0.786
Age of parent^2					0.001	0.004	0.240	0.814
Anxiety measure					0.031	0.011	2.970	0.004
Treatment					0.183	0.260	0.710	0.483
Income					0.019	0.134	0.140	0.885
Married					0.355	0.291	1.220	0.226
Employed					-0.115	0.339	-0.340	0.735
Study					0.130	0.681	0.190	0.849
Education					-0.010	0.111	-0.090	0.931
Smoking					-0.293	0.470	-0.620	0.535
Pets					0.180	0.279	0.650	0.521
First time parent					0.323	0.254	1.270	0.208
Planned pregnancy					0.397	0.336	1.180	0.241
Mothers Ukraine	*N=149, R^2= 0.1024*				*N=149, R^2= 0.1736*			
Constant	8.155	0.738	11.050	<0.001	3.832	1.799	2.130	0.035
Pregnancy week	-0.249	0.062	-4.050	<0.001	-0.184	0.077	-2.390	0.018
Pregnancy week^2	0.005	0.001	4.080	<0.001	0.004	0.001	2.570	0.011
Age of parent					0.095	0.058	1.640	0.104
Age of parent^2					-0.002	0.001	-1.860	0.065
Anxiety measure					0.023	0.012	1.880	0.063
Treatment					-	-	-	-
Income					0.082	0.117	0.700	0.486
Married					-0.035	0.326	-0.110	0.914
Employed					-0.261	0.285	-0.920	0.361
Study					0.433	0.465	0.930	0.353
Education					0.114	0.101	1.130	0.262
Smoking					0.248	0.559	0.440	0.658
Pets					0.295	0.249	1.180	0.238
First time parent					-0.042	0.337	-0.120	0.901
Planned pregnancy					0.012	0.357	0.030	0.973

Table 2: Determinants of Life Satisfaction during transition to parenthood for all participants

	Without control variables				With control variables			
	b	SE	t	P	b	SE	t	P
All Participants	*N=334, R^2=0.0914*				*N=293, R^2=0.2212*			
Constant	8.261	0.487	16.980	<0.001	4.191	1.116	3.760	<0.001
Pregnancy week	-0.232	0.040	-5.770	<0.001	-0.183	0.046	-3.970	<0.001
Pregnancy week^2	0.004	0.001	5.700	<0.001	0.003	0.001	3.980	<0.001
Age of parent					0.065	0.042	1.570	0.118
Age of parent^2					-0.001	0.001	-1.780	0.077
Anxiety measure					0.029	0.007	4.260	<0.001
Treatment					0.175	0.207	0.840	0.399
Income					0.057	0.074	0.770	0.439
Married					0.083	0.181	0.460	0.648
Employed					-0.159	0.184	-0.870	0.386
Study					0.282	0.318	0.890	0.376
Education					0.077	0.060	1.280	0.200
Smoking					-0.169	0.259	-0.650	0.515
Pets					0.308	0.151	2.040	0.042
First time parent					0.063	0.163	0.380	0.701
Planned pregnancy					0.313	0.204	1.540	0.125
Country					-0.298	0.228	-1.310	0.192
Gender					-0.124	0.063	-1.960	0.051

We plot average anxiety levels versus week of pregnancy on Figure 4, which demonstrates that anxiety is essentially linear during pregnancy. This suggests that while more anxious people are indeed less satisfied with their lives, anxiety does not follow a U-shaped pattern during pregnancy and therefore cannot explain why U-shaped pattern is observed for life satisfaction which is consistent with our initial hypothesis that life satisfaction changes as a result of transition to parenthood.

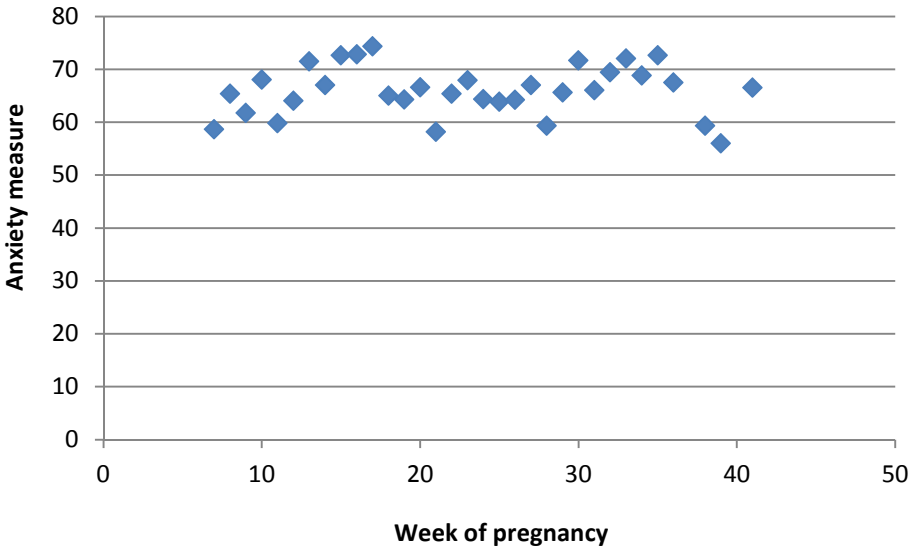

Figure 4: Average anxiety levels relative to weeks of pregnancy for all 334 participants

Interpretations and Conclusions

Reported results have a number of interesting implications. First, it seems that understanding what happens during the transition to parenthood, particularly during pregnancy, may be the key to understanding why parental wellbeing drops when measured after childbirth compared to before childbirth. Second, it is often argued that research with pregnant women is complicated by the fact that they are a very special group of study participants since they often suffer from sudden mood swings. Our findings suggest that it is possible to conduct meaningful research with pregnant women for the following reasons. Observed behaviour shows that while, according to the literature in medical science, moods swings are most common during the first pregnancy trimester (week 1-13 of pregnancy) or after childbirth (e.g., Dipietro et al., 2008), the lowest life satisfaction scores are reported either towards the end of the second or the beginning of the third trimester (between week 20 and 30 of pregnancy). Furthermore, controlling for anxiety levels as well as measuring life satisfaction and anxiety in partners of pregnant women provides meaningful comparison points and allows conclusions to be made about the life satisfaction patterns observed in women.

Third, even though our analysis relies on cross-sectional data[3], it may be of value in several domains. For example, recent research (e.g., Oswald et al., 2014) shows that higher happiness levels are associated with greater productivity. Our results suggest that during own or partner pregnancy, female and male employees' productivity level may decline due to the drop in life satisfaction which stems from the transition to parenthood. Since many employees are likely to be affected by the transition to parenthood, employers may need to create additional incentives for such employees to keep productivity levels high. Our findings may also be of value to doctors and midwives as they inform medical practitioners about how to better counsel and advise pregnant women and their partners given the likely drop in life-satisfaction level. Instead of concentrating on the early stages of pregnancy or post-natal depression, it might be worthwhile to exert extra effort in diagnosing emotional problems between week 20 and week 30 of pregnancy.

Materials and Methods

Since pregnant women come to the maternity hospital for ultrasound scans as well as for labour, in our field experiment, we have recruited women and their partners during or after their visits to the hospital. In the UK sample, all women who took part in the study were patients in the Jessop Wing – a large maternity unit at the Sheffield Teaching Hospitals NHS Trust. Women

[3] Even though we have tried to collect longitudinal individual data on the dynamics of life satisfaction during own pregnancy or spouse/partner pregnancy, we were able to obtain only a very small sample of 9 parents in the UK who reported life satisfaction levels in the early stage of pregnancy, late stage of pregnancy and after childbirth. In all 9 cases each of these parents displayed U-shaped life satisfaction across the 3 points of study involvement which is consistent with our cross-sectional results.

and their partners were asked to answer a two-page paper-and-pen survey. Participants were approached either in the Jessop Wing (while they were waiting for their hospital appointments) or by mail. Therefore, they had an opportunity to either fill out the survey on site and return it to the experimenter or return it by mail. The Ukrainian sample was collected in an anonymous maternity hospital in the South of Ukraine. Participants were approached either by the maternity hospital staff or by qualified maternity hospital psychologist and asked to fill out a two-page paper-and-pen survey. In both samples, we could only recruit participants with pregnancies where no apparent complications and/or other health concerns were reported by the medical personnel. This was caused by restrictions of the ethics protocols to make sure that asking questions about pregnancy does not cause severe emotional distress for the participants.

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