Abstract

Objective: The aim of this study was to examine growth in UK and Croatian women following childbirth and to identify correlates of personal growth after birth, specifically focusing on sociodemographic, obstetric, and coping variables. **Background:** Childbirth is a significant and challenging life event for many women with the potential for both positive and negative psychological changes. Research is increasingly exploring growth in different cultures. No studies have explored growth in Croatian women following childbirth. **Methods:** UK (*N*=193) and Croatian (*N*=160) women who had given birth within the last two years completed online questionnaires measuring growth, depression, posttraumatic stress symptoms and coping strategies. **Results:** Approximately 44% and 35% of UK and Croatian women respectively, reported a moderate level of growth after childbirth. Hierarchical multiple regression analyses showed that younger women in both countries reported more growth. In the UK sample approach coping strategies were related to higher growth. In the Croatian sample higher posttraumatic stress symptoms and the avoidant coping strategy of denial were associated with higher levels of growth. **Conclusion:** This study suggests that many women report positive changes as a result of their birth experience. Further research is needed to explore how cultural elements are manifested in the experience of growth.

Keywords: Posttraumatic growth, Positive changes, Childbirth, Culture, Coping

Introduction

The term posttraumatic growth (PTG) has been used to describe reports of positive changes following challenging events (Tedeschi, Park, & Calhoun, 1998). PTG has been reported in individuals following many different events (see Linley & Joseph, 2004, for a review). Even highly stressful events, which are not necessarily traumatic, like some illnesses (Dirik & Karanci, 2008), work-related stress (Paton, 2005), and immigration (Berger & Weiss, 2002) have been shown to facilitate PTG. Therefore in this paper we will refer to 'growth'. Within the general growth literature three common categories of growth outcomes have been identified (Tedeschi et al., 1998). These are changes in interpersonal relationships, changes in self-perception, and changes in life philosophy.

Most research looking at psychological adjustment following childbirth has focused on negative psychological outcomes such as postnatal depression, anxiety disorders and bonding difficulties. More recently posttraumatic stress disorder (PTSD) has been identified as a consequence of childbirth. There are four clusters of symptoms associated with PTSD: persistent re-occurrence of the traumatic event; avoidance of reminders of the event; negative cognitions and mood; and increased arousal (American Psychological Association, 2013). Approximately 35-45% of women rate their experiences of birth as traumatic (Alcorn, Patrick, Creedy, & Devilly, 2010; Soet, Brack, & Dilorio, 2003) and a recent meta-analysis reported that the prevalence of PTSD in all women is 3.1%, and 15.7% in high-risk women (Grekin & O'Hara, 2014).

In comparison, positive psychological outcomes have been relatively ignored. However, researchers are beginning to recognise the need to explore a range of possible responses (Allan, Carrick-Sen, & Martin, 2013; Ayers, Joseph, McKenzie-McHarg, Slade, & Wijma, 2008) and there is some qualitative and quantitative evidence supporting this. In qualitative research, one study explored women's accounts of a subsequent childbirth after

a previous traumatic birth and found evidence of one of the domains of growth: a sense of personal strength (Beck & Watson, 2010). Women felt that their previous experience of birth had provided them with a sense of strength and empowerment when dealing with the subsequent birth. A similar theme was reported in a meta-ethnographic review of qualitative studies (Elmir, Schmied, Wilkes, & Jackson, 2010). Quantitative evidence is sparse but a study in Israel examined personal growth during the transition to motherhood for first time mothers and found that women can experience both positive and negative outcomes in their transition to motherhood (Taubman-Ben-Ari, Ben Shlomo, Sivan, & Dolizki, 2009). Two studies that looked specifically at growth following childbirth in the UK (Sawyer & Ayers, 2009; Sawyer, Ayers, Bradley, Young, & Smith, 2012) found that women reported small to moderate levels of growth following the birth of their baby with most growth reported in the appreciation of life and personal strength domains.

Theories of growth suggest that the way an individual copes with an event influences levels of growth reported (Tedeschi & Calhoun, 1995, 2004). Certain coping strategies are considered to lead to more positive changes. For example, individuals who engage in active approach-oriented coping (e.g. problem focused, acceptance, and positive reinterpretations strategies) are hypothesised to be more likely to report growth following trauma (Tedeschi & Calhoun, 1996). The findings regarding the relationship between avoidant coping strategies and growth are inconsistent, with some studies reporting no relationship with growth (Ho, Chan, & Ho, 2003; Schroevers & Teo, 2008), some a negative relationship (Frazier, Tashiro, Berman, Steger, & Long, 2004) and others a positive relationship (Park, Mills-Baxter, & Fenster, 2005). A previous study which explored the relationship between coping and growth following childbirth found that the approach coping strategies of seeking guidance and support, and problem solving were associated with higher levels of growth. However, the avoidance strategy, seeking alternative rewards was also associated with higher levels of growth (Sawyer & Ayers, 2009).

Evidence suggests growth is observed across different cultures and, in spite of methodological differences, an overview of this literature indicates the universality of the experience of growth and some of its correlates (Weiss & Berger, 2010). However, manifestations and correlates of growth may have unique culture-specific characteristics. For example, diverse factor structures of the posttraumatic growth inventory have been reported in different cultures (Weiss & Berger, 2010). Cultures and subcultures also vary in the level of growth reported. For example, non-white people have reported greater growth than white people (Tomich & Helgeson, 2004). Differences in the specific areas of growth have also been reported. For example, in highly atheistic societies such as the Netherlands and Australia, the lowest level of growth was in the spiritual domain (Harms & Talbot, 2007; Jaarsma, Pool, Sanderman, & Ranchor, 2006).

Therefore although there is evidence that supports the cross-cultural experience of growth following challenging events, studies also emphasise specific cultural variations in the experience of growth. This highlights the need to continue to broaden the scope of our understanding of growth across different cultures. UK and Croatian postnatal women were chosen to compare for several reasons. Firstly, perinatal settings are similar in terms of similar rates of maternal and neonatal mortality (World Health Organization, 2014). However, it should be noted that all women in Croatia have to give birth in a hospital. Secondly, coping resources might be different for Croatian and UK women. Croatia is a very religious country, where 92.9% of population declare affiliation to some religion (Ostroški, 2013), compared to 75% in UK (Office for National Statistics, 2012a). Finally, much research has been conducted on PTSD and PTG following childbirth in the UK, and much less research on this topic has been conducted in Croatia. Only one study has explored growth in Croatia and this was in soldiers after the war (Tadić & Matković, 2009). The primary aim of the current study is to examine growth after birth in the UK and Croatia. The second aim is to explore factors associated with growth after childbirth in the UK and Croatia. In particular,

the relationship between sociodemographic, obstetric, coping variables and growth will be explored.

Method

Participants

Women were eligible to participate if they were over 18, had given birth more than one month previously and less than two years, and were fluent in Croatian or English.

Croatia: 177 women were recruited. Seventeen participants were excluded from the final analysis due to incomplete responses or time since birth being less than one month or over two years. The mean age of mothers (*N*=160) was 31.3 years (*SD* = 4.2, range 22-41) and the average time since giving birth was 11 months (*SD* = 6.5, range 1-24).

UK: 203 women were recruited. Ten participants were excluded from the final analysis due to incomplete responses or time since birth being less than one month or over two years. The mean age of mothers (*N*=193) was 26 years (*SD* = 5.2, range 18-40) and the average time since giving birth was 10.3 months (*SD* = 6.7, range 1-24).

Design and procedure

This was a cross-sectional online questionnaire study. The UK version of the questionnaire was advertised on British childbirth websites (e.g. www.netmums.com), social networking sites (www.facebook.com and www.twitter.com). Questionnaires that were not previously validated in Croatian were translated from English into Croatian by a bi-lingual Croatian researcher and translator. The URL was posted on a Croatian website for parents (www.roda.hr) and a social networking site (www.facebook.com). Both versions of the questionnaire were also distributed through word of mouth.

Ethical approval was obtained from a UK University research ethics committee. Participants were provided with information about the study and were assured that their responses would be confidential and they could withdraw from the study at any time. Questionnaire responses were entered automatically into a password-protected database.

Measures

Demographic and obstetric information: this section comprised of standard demographic and obstetric questions such as age, marital status, education level, ethnicity, religion, parity, type of delivery, and number of months since the last baby was born.

Posttraumatic growth: growth was measured using the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). The PTGI is a 21-item scale designed to assess positive change following challenging events. The scale measures five factors: New Possibilities (5 items), Relating to Others (7 items), Personal Strength (4 items), Spiritual Change (2 items), and Appreciation of Life (3 items). Ratings are made on a 6-point Likert scale ranging from "I did not experience this change as a result of my crisis" (0) to "I experienced this change to a very great degree as a result of my crisis" (5). The range of scores is 0 to 105, with a higher score indicating greater growth. The prompt and items can be keyed to a specific event and in this study instructions specified that women rate the degree to which change occurred in their life as a result of their recent experience of birth. In the current study, internal reliability for the PTGI administered to UK women was α=.96 and the reliability for the Croatian version of the PTGI was α=.94.

Factor structure of PTGI

As per the recommendation of Bellizzi et al. (2010), the factor structure of the PTGI was examined using a principal components analysis. Also, as the PTGI has not been previously validated in Croatia, it is important to explore the factorial validity of the measure

in the Croatian sample. In the UK sample, three components had eigenvalues over Kaiser's criterion of 1 (11.6, 1.3, and 1.2), and in the Croatian sample four components were extracted (with eigenvalues of 9.8, 1.7, 1.4, and 1.0). However, according to the convergence of the scree plot, the factor structure of the PTGI completed by the UK and Croatian women suggested a unidimensional representation of growth, which is consistent with previous studies (e.g. Joseph, Linley, & Harris, 2005). Therefore, growth was treated as a unidimensional construct and only the total PTGI score was used.

Posttraumatic stress symptoms: the Impact of Events Scale (IES: Horowitz, Wilner, & Alvarez, 1979) was used to assess posttraumatic stress reactions in response to a severe or traumatic event(s). Although the IES has not been validated in Croatian, its revised counterpart, the Impact of Events Scale Revised has been validated in Croatia (Ljubotina & Muslić, 2003). The IES has been recognised as a useful instrument in measuring traumatic stress following childbirth (Czarnocka & Slade, 2000). The IES consists of 15 items measuring avoidance (8 items) and intrusion (7 items). The items are rated on a 4-point Likert scale, ranging from 0-5 on the frequency that the items have been experienced as a result of childbirth, over the 7-days prior to testing (0=not at all, 1=rarely, 3=sometimes, 5=often). In this study the internal consistency was α=.93 and .91 for the total inventory in the UK and Croatian sample, respectively. For the subscales avoidance and intrusion reliability was α=.88 and α=.88 in the UK sample, or α=.85 and α=.84 in Croatian sample, respectively, indicating high reliability.

Depression symptoms: the Edinburgh Postnatal Depression Scale (EPDS: Cox, Holden, & Sagovsky, 1987) is a ten-item inventory which was used to assess the prevalence of depression symptoms over the previous week. The items are rated on a 4-point scale ranging from 0-3, which yields a maximum score of 30, with greater scores signifying a greater level of depression symptoms. The overall reliability for the EPDS was high α=.88

(Cox et al., 1987). In the present study this is comparable at α=.90 and .86 for UK and Croatian women, respectively. The EPDS has also been previously validated with a Croatian sample where it was shown that the cut-off score of ≥ 9 had the optimal sensitivity and specificity (Nakić Radoš, Tadinac, & Herman, 2013).

Coping: the Brief Cope questionnaire (Carver, 1997) was used to ascertain the different types of coping strategies utilised in response to a stressful event. The scale consists of 28 items, which are subdivided into 14 scales measuring different coping strategies. These were further subdivided into three coping categories according to Schnider, Elhai, and Gray (2007). The coping strategies and their associative coping scales are as follows: Avoidant Coping (incorporating; self distraction, denial, behavioural disengagement, self blame and substance abuse), Problem-focused Coping (incorporating; active coping, planning, instrumental support, religion) and Emotion-focused Coping (incorporating; venting, positive reframing, humour, acceptance and emotional support). Ratings are completed on a four-point Likert scale ranging from 0 (I haven't been doing this at all) to 3 (I've been doing this a lot). In this study the reliability was between α=.55 and .90 for the scales. Reliability of Avoidant Coping, Problem-focused Coping, and Emotion Coping was α=.76, .80 and .81 for the UK sample and α=.75, .72 and .81 for Croatian sample, respectively. The Brief Cope has also been verified in a Croatian sample, where a similar factor structure to the original inventory was observed (Hudek-Knežević, Kardum, & Vukmirović, 1999).

Data analysis

Data screening indicated the majority of variables were skewed (with the exception of the PTGI in both samples) therefore non-parametric tests were used where possible. Differences between the samples were tested using χ^2 or the Mann-Whitney U test. The relationships between demographic, obstetric, and psychological variables with growth were

examined initially using Spearman's correlations. All significant associations were then entered into a hierarchical multiple regression analysis, which allowed for control over demographic variables as possible confounding variables. According to Field (2009) the predictors do not need to be normally distributed to perform a regression analysis. All other assumptions for regression were met. For all analyses, a *p* value equal to .05 was used as the limit of statistical significance.

Results

Sample characteristics

Women in the Croatian sample were on average five years older (M_{UK}=26.0y (5.2), M_{CRO}=31.3y (4.2), U=6498.5, z=-9.37, p<.001). Women completed the questionnaires approximately 10-11 months after childbirth. More Croatian women were married (87.5% vs. 36.3%) as opposed to more UK women cohabiting with partner (47.2%), not living with partner (5.7%), or being single (10.8%; $\chi^2(3)=94.35$, p<.001). More Croatian women were highly educated (61.9% vs. 26.4%; $\chi^2(1)=43.55$, p<.001) and employed (85.0% vs. 50.6%; $\chi^2(1)=44.33$, p<.01) compared to UK women. Also, more Croatian women had one child (64.4% vs. 54.9%), a similar number of women had two children (32.5% vs. 26.9%), but less women had three or more children (3.1% vs. 18.2%; $\chi^2(2)=20.12$, p<.01). More women in the Croatian sample had a vaginal delivery (78.8% vs. 65.8%) and fewer women had an assisted delivery (3.1% vs. 10.9%) compared to the UK sample ($\chi^2(3)=10.9$, p<.05).

Growth

Growth scores ranged from 0 to 105 in the UK sample, and from 0 to 101 in the Croatian sample. There were no differences between the samples regarding levels of growth reported (Mdn_{UK} = 56, Mdn_{CRO} = 50, U=14018.5, z=1.49, p>.05). At least a moderate degree

of positive change after childbirth (>62 on the PTGI) was reported by 43.5% of UK mothers and 35.0% of Croatian mothers ($\chi^2(1)=2.31$, $p>.05$).

Variables associated with growth

Demographic and obstetric variables

Correlations of demographic and psychological variables with growth are presented in Table 1. Several demographic variables were related to growth. Maternal age was related to growth in both UK and Croatian mothers. Women who were younger reported higher growth after childbirth. Marital status and parity were also related to growth, in the UK sample only, but the strength of these relationships was small (< 0.3). Further exploration using the Mann-Whitney U test showing that married women (*Mdn*=48.5) reported lower levels of growth than either women living with their partner (*Mdn*=60, *U*=2534.0, *z*=-2.22, *p*<.05) or single women (*Mdn*=73, *U*=516.5, *z*=-2.06, *p*<.05). Growth in UK and Croatian mothers in respect to parity is presented in Figure 1. Primiparous women reported higher levels of growth (*Mdn*=65) than multiparous women (*Mdn*=48, *U*=3204.5, *z*=3.64, *p*<.001) in the UK sample only. In regard to differences between the samples, UK primiparous women reported higher level of growth (*Mdn*=65) than Croatian primiparous women (*Mdn*=51, *U*=4330.5, *z*=2.58, *p*<.01). Growth was not related to other demographic variables, including education, income, employment, time birth, childbirth trauma and Criterion A.

Insert Table 1 Here

Insert Figure 1 Here

Psychological variables

Growth was related to higher levels of posttraumatic stress disorder (PTSD) symptoms and depression symptoms in Croatian women only but the coefficients indicate only a small relationship (Table 1).

Coping variables

Several coping styles were moderately (> .3) related to growth, but these patterns were different for the UK and Croatian samples. Avoidant coping was related to growth in the Croatian sample only, whilst problem- and emotion-focused coping were related to growth in the UK sample only. More specifically, *denial* as an avoidant style was related to growth in Croatian women. On the other hand, *active coping* and use of *instrumental support*, as a ways of problem-focused coping, and *positive reframing* and use of *emotional support*, as a ways of emotion-focused coping, were related to growth in UK women.

Regression analyses

Demographic variables related to growth were controlled for in the hierarchical regression analysis in the first step. PTSD and depression symptoms were entered in the second step and coping styles were entered in the final step. Following an empirically driven approach, only variables related to growth in each sample were entered into the regression model as possible predictors (Table 2). Final models were significant and variables explained one third of total variance of growth scores in both UK and Croatia. In the UK sample, significant predictors for higher growth were younger maternal age and higher use of emotional support, active coping and positive reframing. In the Croatian sample, significant predictors for higher growth were younger maternal age, more PTSD symptoms and more frequent use of denial coping.

Insert Table 2 Here

Discussion

This study explored growth and possible correlates in UK and Croatian women following childbirth. The results show that many women identified positive changes as a result of their childbirth experience. Approximately 44% of UK women and 35% of the Croatian women reported at least a moderate level of growth. These findings contribute to the growing body of literature that suggests women report positive outcomes and personal growth following childbirth (Sawyer & Ayers, 2009; Sawyer et al., 2012). Therefore it is important to recognise that even normative or stressful events can promote growth. This is consistent with Linley and Joseph's (2004) view that it is the characteristics of the subjective experiences of the event, rather than the event itself, which are important in the development of growth. These findings also provide further support that growth is reported in different cultures and that growth is not a culture-bound phenomenon.

Variables associated with PTG

The only demographic variable that predicted growth in both samples of women was age, with younger women reporting higher levels of growth. This is consistent with previous studies of growth following childbirth (Sawyer & Ayers, 2009; Sawyer et al., 2012; Taubman, Ben Shlomo, Findler, 2012) and in many studies of growth in different populations (Linley & Joseph, 2004). Tedeschi and Calhoun (2004) suggest that younger people may be more open to learning and change, whereas older individuals are less amenable to changes. It is also possible that being a younger mother might present particular challenges, which may increase the opportunity for growth (Taubman et al., 2012).

The relationship between measures of distress and growth was mixed. In the UK sample depression or posttraumatic stress symptoms were not related to growth, which is consistent with the two previous studies of growth following childbirth in the UK (Sawyer &

Ayers, 2009; Sawyer et al., 2012). In comparison, in the Croatian sample higher levels of posttraumatic symptoms predicted higher reported growth. It is not clear why these differences exist. However, it is important to consider that many of the women who participated in this study would have been children or young adults during the Homeland War in Croatia (1991-1995). Studies in Croatia have highlighted the prevalence of secondary traumatisation in the wives of soldiers who fought in the war, and its negative effects on the psychological wellbeing of their children (Frančišković et al., 2007; Kaštelan, Frančišković, Stevanović, & Petrić, 2012). Therefore it is possible that in this sample of women, who have lived through the war, a greater level of distress is required to precipitate growth. These findings also contribute to the inconclusive and inconsistent empirical literature regarding the relationship between growth and distress. This highlights that positive and negative changes should not be considered as opposite ends of a continuum, but that both outcomes can co-exist (Shakespeare-Finch & Beck, 2014).

The type of coping associated with growth also differed between the two countries. In Croatian women avoidant coping was predictive of growth – predominantly denial - whereas in UK women active and emotion-focused coping strategies were predictive of growth. Inconsistent findings with regard to the type of coping strategies related to growth is also reflected in other studies exploring growth after childbirth (e.g. Sawyer & Ayers, 2009; Sawyer et al., 2012) and the general literature, for example, some studies finding no relationship between avoidant coping and growth (Ho et al., 2003; Schroevers & Teo, 2008) and others finding such a relationship (Halam & Morris, 2013; He, Xu, & Wu, 2013; Helgeson, Reynolds, & Tomich, 2006). It has been suggested that some avoidant coping strategies may be an indicator of cognitive processing, which is needed for growth to occur (Helgeson et al., 2006).

Limitations

This study has a number of limitations. First, women were recruited from the internet and may not be representative of the general population of parturient women. For example in Croatia more women from the current study were primiparous and highly educated (Ostroški, 2014; Rodin, 2010), and in the UK more women had babies outside marriage, had a caesarean section and were younger (Office of National Statistics, 2012b). Women included in the study gave birth within a wide time frame, ranging from one month to two years. However, time since birth was not related to growth. Second, a non-validated Croatian translation of the PTGI was used. Therefore to fully explore growth and its correlates future studies need to ensure the validity of growth in Croatian culture. Finally, because the design of the study was cross-sectional, a causal relationship between coping variables and growth cannot be established.

Conclusions

This is the first study to explore growth following childbirth in Croatia. This study suggests that many women report positive changes as a result of their birth experience. Although UK and Croatian women reported similar levels of growth following childbirth there were some differences regarding how demographic, obstetric, psychological, and coping variables related to growth. Younger age was associated with growth in both samples. However, in addition to this, concurrent distress and denial coping were more strongly associated with postnatal growth in Croatian women, whereas problem- and emotion-focused coping styles were more strongly associated with growth in UK women. Therefore future research should continue to examine the potential for growth in different countries and explore how distal and proximate cultural factors influence an individual's experience of growth. This study suggests that healthcare professionals and clinicians should not only monitor symptoms of distress following childbirth, but should also be aware of the potential for positive change.

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Table 1

Spearman's correlations of demographic variables, PTSD symptoms, depression symptoms and coping strategies with growth in the UK and Croatian sample

	Growth	
	UK	Croatia
	N=193	*N*=160
Demographics		
maternal age	-0.31**	-0.41**
education	-0.14	-0.03
income	-0.14	0.12
marital status[a]	0.19**	-0.11
employment	0.11	0.09
parity	-0.25**	-0.11
time from birth	0.03	0.05
PTSD symptoms	0.03	0.27**
Depression	-0.08	0.16*
Coping		
Avoidant coping	0.04	0.14
self distraction	0.09	0.17*
denial	0.03	0.30**
behavioural disengagement	-0.04	0.08
self blame	0.04	-0.02
substance use	0.05	0.03

Problem-focused coping	0.34**	0.22**
active coping	0.30**	0.20*
planning	0.25**	-0.09
religion	0.11	0.28**
instrumental support	0.30**	0.12
Emotion-focused coping	0.33**	0.00
venting	0.16*	0.07
positive reframing	0.37*	-0.04
humour	0.16*	0.06
acceptance	0.16*	-0.02
emotional support	0.35**	0.07

[a]marital status: 1-married, 2-living with partner, 3-not living with partner, 4-single * $p < .05$, ** $p < .01$

Table 2

Hierarchical regression analysis showing predictors of growth in the UK and Croatian sample

	UK (*N*=193)				Croatia (*N*=160)		
	B	*SE B*	*β*		*B*	*SE B*	*β*
Step 1 - demographics							
Maternal age	-1.32	0.46	-0.24**	Maternal age	-2.43	0.43	-0.41***
Marital status							
married vs. cohabiting	2.20	4.87	0.04				
married vs. living separately	2.56	9.22	0.02				
married vs. single	1.72	7.59	0.02				
Parity	-3.01	2.39	-0.10				
Step 2 - psychological							
PTSD symptoms	0.13	0.15	0.07	PTSD symptoms	0.60	0.18	0.26***
Depression	-0.77	0.41	-0.15	Depression	-0.24	0.41	-0.05
Step 2 - coping							
Problem-focused coping				Avoidance			
active coping	7.13	2.02	0.26***	self-distraction	1.84	1.12	0.12
planning	-0.16	1.50	-0.01	denial	3.26	1.45	0.16*
instrumental support	-2.28	1.59	-0.14	Problem-focused coping			
Emotion-focused coping				active coping	0.30	2.54	0.01
venting	0.79	1.33	0.04	religion	1.97	1.58	0.16
positive reframing	3.68	1.58	0.22*				
humour	-0.58	1.29	-0.04				
acceptance	-0.99	1.43	-0.06				
emotional support	5.06	1.58	0.30**				
R^2 = 0.10 for Step 1; ΔR^2 = 0.02 for Step 2 ($p > .05$);				R^2 = 0.17 for Step 1; ΔR^2 = 0.06 for Step 2 ($p < .001$);			

ΔR^2 = 0.21 for Step 3 (p < .001)	ΔR^2 = 0.09 for Step 3 (p < .001).

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Figure Captions

Figure 1. Median growth scores in UK and Croatian women by parity