Childbirth, Trauma and Family Relationships

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**Abstract**

Background: Childbirth is a major life event potentially associated with postnatal psychopathological symptoms that may harm women’s interpersonal relationships. We hypothesised that higher levels of postnatal depression, post-traumatic stress (PTSD) symptoms, and fear of childbirth would be associated with mother-baby bond disorders and relationship dissatisfaction in couples.

Method: A cross-sectional self-report online questionnaire was used to survey partnered women who had delivered in the year prior to the study. We used a convenience sample of 228 women recruited through purposive and snowball sampling. Childbirth experience, PTSD symptoms, attachment style, depression, mother-baby bond disorders, and couple relationship dissatisfaction were measured.

Results: Women with higher PTSD and postnatal depression scores reported higher levels of mother-baby bond disorders—a relationship fully mediated by postnatal depression symptoms. Women who perceived childbirth as fearful or anxiety provoking had higher levels of PTSD and postnatal depression symptoms. Fearful and anxious birth perception was positively associated with mother-baby bond disorders—an association partly mediated by PTSD symptoms. Insecure attachment style was not found to be significantly associated with fearful or anxious perceptions of childbirth.

Limitations: Women who have postnatal PTSD/depression are less inclined to participate in a study of this nature. Also, online surveys prevented the use of clinical diagnoses of PTSD and depression.

Discussion and conclusions:Our results suggest that PTSD and postnatal depression affect women’s mental health and family bonds. Women should be assessed for negative traumatic birth experiences, PTSD, and depression, to allow targeted observation for psychopathologies and therapeutic interventions.

**Keywords: childbirth; postnatal depression; PTSD; couple relationship; mother-baby bond disorders; attachment style**

**Introduction**

Post-traumatic stress disorder (PTSD) is related to a range of comorbid difficulties, including difficulties in interpersonal relationships (1). Studies have shown that a lack of social support increases the likelihood of developing PTSD following a traumatic event (2). Relationship satisfaction is lower in couples where one person has PTSD, marital problems are reported in a greater percentage of people with chronic PTSD, and divorce rates are significantly higher (3,4). Some studies have shown that these relationship issues are a result of PTSD, whereas others indicate that the lack of stable relationships predicts PTSD (5). Studies have also indicated that people with PTSD report more difficulties with parenting. This includes parenting behaviour and satisfaction with the parent-child relationship (6).

Studies have examined the association between relationship and parenting difficulties. Two main theoretical standpoints have been supported: firstly, the spillover hypothesis that postulates that improved relationship satisfaction is related to greater parent satisfaction and improved relationships with children, and, secondly, the compensation hypotheses, where relationship difficulties are related to better parent-child relationships (7,8).

Interestingly, these associations between relationship satisfaction and parent-child relationships in the period immediately following childbirth have hardly been studied. This stage has long been acknowledged as important, and that a warm, close, intimate caregiver-baby relationship sustains and promotes infant mental health development (9,10). This affects relationships in adulthood because individuals who show secure attachment styles report less conflict in interpersonal relationships. This attachment style is also essential in motherhood. Studies have indicated that secure attachments have a meaningful contribution to the baby bonding process (11). This is true to the extent that an inverse relationship appears to exist between anxious/avoidant attachment styles in mothers and their subsequent provision of consistent, warm, and supportive care for their infant (12).

The postnatal time period is also significant because, while childbirth is traditionally associated with excitement and happiness, for a small percentage of women, birth and subsequent care-giving of an infant are triggers for the development of psychopathology.

Postpartum depression occurs within the first year following childbirth in approximately 10–15% of women (Haga et al, 2012; O’Hara, 2009) and can include feelings of low mood, loss of interest in normal activities, feelings of worthlessness, and loss of energy (Iles et al, 2011). Mothers that suffer from depression may express diminished emotional involvement, impaired communication, and reduced synchrony with their babies (13–15).

Traumatic childbirth experiences can lead to the development of other psychopathologies. Approximately 4% of mothers develop post-traumatic stress disorder (PTSD) characterised by intrusive images of the traumatic event; avoidance of internal and external reminders of the event; negative emotions, and physiological arousal. Traumatic childbirth is also related to postpartum depression.

The subjective experience of a traumatic event is one of the key predictors of PTSD symptoms (16). Research consistently demonstrates that a woman’s subjective experience of birth is crucial in determining her emotional state (17,18). Thomson & Downe (2008) reported that women who apparently gave birth normally, without intervention, may nonetheless consider it traumatic. Beck (2004a) and Allen (1998) found that many mothers considered their childbirth traumatic where their clinicians considered it routine.

This fear of childbirth (FOC) could be linked to the woman’s attachment style. Ayers et al. (2014) found that women’s attachment styles moderated the association between women’s responses to operative birth and PTSD. Women with an avoidant attachment style had more risk of PTSD when responding to operative births. The birth experience can be crucial for mother-baby bonding. Women’s perception of the birth experience may be an important factor influencing the development of the maternal caregiving system (11).

The few available published studies examining the potential impact of PTSD following traumatic childbirth on mother-baby bonding are inconsistent in their findings. Qualitative studies have described difficulties in the formation of the mother-baby bond after traumatic childbirth (23–25). Quantitative studies were less conclusive in their findings, suggesting no significant association between postnatal PTSD and the mother-baby bond (25), while other studies found a significant association (26–28). Some studies have suggested that the relationship between PTSD and bonding is mediated by depression (29).

The transition to parenthood is expected to alter a couple’s interpersonal relationship (30). Most studies have found a dramatic increase in negative interchanges and conflicts between partners (31). Few studies have examined the effect of traumatic childbirth on couple’s relationships (26). Case studies and qualitative research studies suggest that postnatal PTSD and depression are likely to increase couple relationship dissatisfaction (32). Subsequent quantitative studies present conflicting findings, including that there is no correlation between post-traumatic symptoms from traumatic childbirth and there are negative effects on couple’s relationships (33), or that the effect of PTSD on the couple’s relationship was fully mediated by symptoms of depression (26).

Previous studies therefore present conflicting findings regarding psychopathology following traumatic childbirth and mother-baby bonding. The role of the mother’s own attachment style is also unclear. The interdependence of couple relationships and mother-baby bonding has not been studied in the context of traumatic childbirth.

The study presented in this paper aimed to explore these factors in women who had given birth in the previous year. Specifically, our primary study hypothesis was that higher levels of postnatal depression and post-traumatic stress symptoms would be associated with higher levels of mother-baby bond disorders and couple relationship dissatisfaction. Furthermore, we hypothesized that insecure attachment would be positively associated with FOC, and that FOC would be positively associated with postnatal depression and post-traumatic stress symptoms. Given the inconsistent results that have been found, we hypothesized a more complex relationship between the study variables—that PTSD would mediate the relationship between FOC, bonding, and couple satisfaction, and that depression levels would mediate the relationship between PTSD, bonding, and couple satisfaction.

**Method**

Study participants. We included women who had given birth between two months to one year prior to participating in the study, and who had a partner.

Questionnaire methods. The study was approved by the University Ethics Committee, where the authors are based, before data collection commenced using internet-based questionnaires. It was assumed that the anonymity of this method might be preferred by some participants on account of the sensitivity of the subject. The questionnaire introduction noted that participation was voluntary and could be suspended at any stage. Possible emotional triggers were mentioned, and a list of support-providers was given.

Procedure. This was a cross-sectional study using a convenience sample, combined with purposive and snowball sampling. The study recruits were solicited in a number of ways using online social media. The questionnaire was posted on social network groups and forums; all were closed groups for mothers (the largest had 80,000 members). Social network groups labelled ‘birth victims’ were considered to be more likely to have members with negative birth experiences, and were actively followed. A post or message in a group from women with possible negative birth experiences was directly targeted by the primary investigator who utilized the private messaging system to invite them to participate. An email distribution list was also used for recruitment, including the researcher’s contacts and women recruited verbally by the researcher.

Measures and instruments.

**Demographic and obstetric data** regarding gender, age, country of origin, education, marital status, religious observation, parity, and mode of childbirth were collected. Information was also collected on the last delivery such as childbirth partner, pain management, preparation for birth, and level of satisfaction with treatment during the birth (e.g., ‘Did you feel you were in “good hands” during the birth?’).

**Experience of fear in childbirth** was measured using The Wijma Delivery Experience Questionnaire (W-DEQ, Version B) (34). This consisted of 33 items measuring the participants’ feelings and cognitions surrounding the childbirth experience (e.g., ‘How did you feel during the birth?’). Items were scored on a 6-point Likert scale with high scores indicating higher levels of fear in childbirth during the woman’s last delivery. Total scores for this questionnaire ranged from 0 to 165. According to diagnostic research, women with a total score of 85 have strong feelings of fear and anxiety regarding their last childbirth, and women who scored 100 and above have a clinical fear of childbirth (i.e., they feel handicapped by fear of childbirth in daily life). Studies indicated high reliability: 0.90 or higher (34). Cronbach’s alpha in this study was 0.93.

**Post-traumatic stress symptoms**were measured using the PTSD checklist from the DSM-5 (PCL-5) (35). This 20-item self-report assessed the 20 symptoms of PTSD listed in the DSM-5 that the participant may have experienced in the past month (e.g., ‘How bothered were you by intrusive, recurrent and unwanted memories of the traumatic experience’). Scoring was on a scale of 0–4 for each symptom. A total symptom severity score (0–80) was obtained by adding the scores of the 20 items. Cronbach’s alpha in the study was 0.95.

**Mother-baby bond disorders**were measured using the Postpartum Bonding Questionnaire (PBQ) (36), a screening instrument that measured parent baby bonding disorders. It consisted of 25 items concerning the quality of the mother-baby bond (e.g., ‘I enjoy playing with my baby’) rated on a 6-point Likert scale (0–5); higher scores represented a more pathological parent-baby bond. The questionnaire contained four sub-scales: impaired bonding—12 items; rejection and anger—7 items; infant-focused anxiety—4 items; and incipient abuse—2 items. Total scores ranged from 0 to 125. The four sub-scales showed moderate sensitivity (1.0, 0.89, 0.56, and 0.28 respectively) and high specificity (0.85, 1.0, 0.96, and 1.0 respectively) for mother-baby bonding disorders. Test/retest reliability was 0.95, 0.95, 0.93, and 0.77 respectively for the four sub-scales(36,37). Cronbach’s alpha was 0.91.

**Couple relationship dissatisfaction** was measured using the short version of the ENRICH Marital Satisfaction Scale (EMS) (Lavi, 1995). This scale measured the level of fitness and satisfaction in a couple’s relationship and was based on the American version of the EMS (38). The scale consisted of 10 items that measure 10 aspects of a couple’s relationship: partner’s characteristics and behaviour; communication; problem solving; budgeting; leisure and interests; affection and sexual intercourse; parenthood and childcare; relationship with family of origin; workload distribution; and trust (e.g., ‘To what extent do you accept your spouse’s character and behaviour?’). Each item was rated on a 7-point scale. Internal reliability of the scale measured by Cronbach’s alpha ranged between 0.77­­–0.86. The total score was an average of the scale items. Lower scores indicated greater couple relationship dissatisfaction. Religiosity items were excluded from this version since they were previously invalidated in this country’s population (Lavi, 1995). Cronbach’s alpha in the study was 0.721. The study included two more items relating to the scale in order to screen for changes in couple satisfaction associated with previous childbirth: ‘Has the relationship with your partner changed since the previous childbirth?’, ‘How did the relationship change?’.

**Symptoms of depression**were measured using the Edinburgh Postnatal Depression Scale (EPDS) (39). The scale included 10 items describing symptoms of depression in the past week (e.g., ‘In the past week I felt so unhappy, I was having difficulties sleeping’), rated from 0–3, with a total score between 0–30. High scores indicated more depressive symptoms. The scale, widely used to screen postnatal depression, yielded a sensitivity of 86%, a specificity of 78%, a high standardized Cronbach’s alpha of 0.87, and a split reliability of 0.88 (39). Cronbach’s alpha in the present study was .955.

**Attachment style**was measured using the Experience in Close Relationship Scale (ECR) (40). This self-report scale contained 36 items: 18 items related to an anxious attachment continuum (e.g., ‘I worry about my relationships’), and 18 items related to an avoidant attachment continuum (e.g., ‘I would like to get closer to people, but I keep distancing myself from them’. Items were scored on a 7-point Likert scale. The total score was the average of items on each continuum. Higher scores indicated higher levels of attachment avoidance or anxiety. The high reliability of this measure has been validated in many studies (41). Cronbach’s alpha was validated as 0.91 for anxiety and 0.94 for avoidance (42). Cronbach’s alpha in the current study was 0.88 for avoidance and 0.87 for anxiety.

**Results**

**Data analysis**

The data were analysed using SPSS software version 26, and AMOS software version 25.

First, descriptive statistics were performed using means and standard deviations, followed by univariate correlations that were assessed using Pearson correlations. In order to examine the research model, structural equation modelling (SEM) that assessed the correlations between the variables was conducted. In addition, quality of fit measures were produced: the goodness of fit index (GFI); the comparative fit index (CFI); the non-normed fit index (NNFI), all with goodness of fit values greater than 0.9; as well as root mean square error of approximation (RMSEA) that was expected to be of a value of 0.08 or less. Significance was considered for a p-value lower than 5%.

**Results**

1. **Descriptive statistics**

Data were collected between 4.8.2014 and 14.1.2015. Six-hundred and fifty-five participants[[1]](#footnote-1) began the questionnaires, half of whom dropped out after completing the demographic questions. Of those who completed the questionnaires, we excluded women who did not meet the inclusion criteria, mainly those who reported having their baby more than a year before the start of the survey. Five women were excluded as they did not have a partner. Thus, 228 women were included in the final cohort analysis. Table 1 shows the demographic characteristic of the final cohort. Most of the participants had a university degree, and were aged between 26–35 years. For most women, it was their first or second delivery. Most women, 84.3%, were Israeli born. Table 2 shows characteristics of the birth. As can be seen, most women delivered in hospital, at term, and had had vaginal deliveries. Most felt in ‘good hands’ during childbirth. In the questionnaire, women could indicate more than one delivery partner, and most reported that their own partner had been with them during childbirth. Half the women took a childbirth preparation course.

Table 3 presents the descriptive statistics and Pearson correlations between study variables. Results indicated that high avoidant attachment is correlated with high anxious attachment (*r =* .31, *p* < .01); high postnatal depression (*r* = .29, *p* < .01); high post-traumatic stress symptoms (*r* = .22, *p* < .01); and low quality of couple relationship (*r* = -.32, *p* < .01).

High anxious attachment is correlated with high postnatal depression (*r* = .40, *p* < .01); high post-traumatic stress symptoms (*r* = .26, *p* < .01); low quality of couple relationship (*r* = -.28, *p* < .01); and high mother-baby bond disorders (*r* = .31, *p* < .01).

High FOC is correlated with postnatal depression (*r* = .41, *p* < .01); high post-traumatic stress symptoms (*r* = .28, *p* < .01); low quality of couple relationship (*r* = -.13, *p* < .05); and high mother-baby bond disorders (*r* = .41, *p* < .01).

Postnatal depression is positively correlated with post-traumatic stress symptoms (*r* = .46, *p* < .01); low quality of couple relationship (*r* = -.30, *p* < .01); and high mother-baby bond disorders (*r* = .56, *p* < .01).

High post-traumatic stress symptoms are correlated with low quality of couple relationship (*r* = -.14, *p* < .05), and high mother-baby bond disorders (*r* = .34, *p* < .01).

Finally, low quality of couple relationship is associated with high mother-baby bond disorders (*r* = -.28, *p* < .01).

***Table 3: Means, standard deviations, and correlations between study variables***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **M** | **SD** | **1** | **2** | **3** | **4** | **5** | **6** |
| 1. **Avoidant attachment**
 | 3.04 | 0.87 |  |  |  |  |  |  |
| 1. **Anxious attachment**
 | 2.74 | 1.00 | .31\*\* |  |  |  |  |  |
| 1. **FOC**
 | 56.98 | 28.22 | .07 | .08 |  |  |  |  |
| 1. **Postnatal depression**
 | 4.92 | 4.67 | .29\*\* | .40\*\* | .41\*\* |  |  |  |
| 1. **Post-traumatic stress symptoms**
 | 30.93 | 14.25 | .22\*\* | .26\*\* | .28\*\* | .46\*\* |  |  |
| 1. **Quality of couple relationship**
 | 56.67 | 7.31 | -.32\*\* | -.28\*\* | -.13\* | -.30\*\* | -.14\* |  |
| 1. **Mother-baby bond disorders**
 | 13.22 | 10.09 | .11 | .31\*\* | .41\*\* | .56\*\* | .34\*\* | -.28\*\* |

*Note*: \**p* < .05, \*\**p* < .01

1. **Testing the study model—SEM analysis**

In order to examine the study model and hypotheses, SEM analysis was conducted. The results for acceptable goodness of fit indices of the model were: χ2(1) = 4.75; p = .029; GFI = .99; NFI = .98; CFI = .98; RMSEA = .12. The results of hypotheses testing, according to the main model, are presented below.

H1: Higher levels of post-traumatic stress symptoms following childbirth will be associated with higher levels of mother-baby bond disorders. No significant association was found between post-traumatic stress symptoms and mother-baby bond disorders (*β* = .07, *p* = .18). H1 was not supported.

H2: Symptoms of postnatal depression will be associated with higher levels of mother-baby bond disorders. A significant association was found between symptoms of postnatal depression and mother-baby bond disorders (*β* = .42, *p* < .01). More severe symptoms of postnatal depression are related to more severe mother-baby bond disorders. H2 was supported.

H3: Fear of childbirth will be positively associated with post-traumatic and depression symptoms. Results showed that fear of childbirth was positively associated with post-traumatic (*β* = .23, *p* < .01) and depression symptoms (*β* = .24, *p* < .01). Thus, mothers reporting higher levels of FOC also reported higher levels of post-traumatic and depression symptoms. H3 was supported.

H4: Insecure attachment style (avoidant/anxious) would be positively associated with FOC. Results did not reveal that avoidant (*β* = .06, *p* = .30) or anxious (*β* = .06, *p* = .36) attachment styles are correlated with FOC. H4 was not supported.

H5: Higher levels of post-traumatic stress symptoms following childbirth would be associated with a poorer couple relationship. This correlation would be mediated by symptoms of depression. No direct effect was found between post-traumatic stress symptoms and the quality of the couple relationships (*β* = .03, *p* = .73). However, higher levels of post-traumatic stress symptoms were positively associated with depression (*β* = .32, *p* < .01), which in turn led to poorer quality couple relationship (*β* = -.21, *p* < .05). Mediation analysis showed that this indirect effect is significant (*β* = -.05, *p* = .02). H5 was supported.

H6: FOC would be associated with higher levels of mother-baby bond disorders. This relationship would be mediated by post-traumatic stress symptoms. Results showed a direct effect between FOC and mother-baby bond disorders (*β* = .21, *p* < .05). Testing mediation process showed that higher FOC led to higher levels of post-traumatic stress symptoms (*β* = .23, *p* < .01), which in turn lead to higher depression symptoms (*β* = .32, *p* < .01). Finally, depression symptoms are positively associated with mother-baby bond disorders (*β* = .42, *p* < .01). Mediation analysis showed that this indirect effect is significant (*β* = .14, *p* = .01). H6 was supported.

H7: FOC would be correlated with poorer quality couple relationships. This relationship would be mediated by post-traumatic stress symptoms. No significant direct effect was found between FOC and the quality of couple relationships (*β* = -.02, *p* = .70). However, testing mediation process showed that higher FOC led to higher levels of post-traumatic stress symptoms (*β* = .23, *p* < .01), which in turn led to higher depression symptoms (*β* = .32, *p* < .01). Finally, depression symptoms are negatively associated with couple relationship satisfaction (*β* = -.21, *p* < .05). Mediation analysis showed that this indirect effect is significant (*β* = -.06, *p* = .02). H7 was supported.

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***Figure 1: Relationships between avoidance attachment, anxious attachment, fearful and anxious perceptions with mother-baby bond disorders and quality of couple relationship; mediated by postnatal depression and post-traumatic stress symptoms***

*Note*: \**p* < .05, \*\**p* < .01

**Discussion**

This study aimed to examine the relationships between attachment style, FOC, postnatal depression, and PTSD symptoms, with mother-baby bonding and couple satisfaction. As hypothesized, and consistent with previous studies, mother-baby bonding was related to decreased couple satisfaction. Problems in bonding and in couple satisfaction were related to higher levels of FOC, depression, and PTSD. These results are intuitive: suffering from higher levels of anxiety related to the birth, feelings of postnatal depression, and symptoms of PTSD negatively affect baby bonding and couple satisfaction. Symptoms of PTSD, in this case, can include re-experiencing the birth in the form of flashbacks, nightmares, distressing intrusive memories, avoidance of reminders of the birth, and higher arousal.

Avoidant and anxious attachment styles were related to increased reported levels of PTSD and depression, but not to FOC. Anxious attachment was related to both mother-baby bonding and couple relationship satisfaction; avoidant attachment was also related to couple satisfaction. These results, consistent with previous studies, indicate that attachment styles that are formed early in life can have a long-lasting impact on adult functioning in relationships.

The SEM results indicate that PTSD, FOC, and depression levels are related, yet have differential effects on interpersonal relationships. Depression levels mediated the relationship between PTSD and couple satisfaction. Both depression and PTSD levels mediated the relationship between FOC and mother-baby bond disorders.

This suggests, that women who experienced frightening births were at higher risk of mother-baby bond disorders, partially due to PTSD symptoms. Symptoms of postnatal depression fully mediated the association between PTSD and couple relationship dissatisfaction. This might indicate that depression should be the focus of intervention when couple dissatisfaction is found.

Interestingly, most participants in the study scored relatively highly in terms of couple relationship satisfaction. Also, most reported that the couple relationship improved following childbirth. This was surprising considering prior reports of relationship decline from new mothers, regardless of birth experience, depression, and PTSD (30,31). It is possible that the perspective of one year, post-delivery, was insufficient for women to fully appreciate changes in the couple relationship.

FOC was found to be positively associated with mother-baby bond disorders; this association was mediated by symptoms of PTSD and then depression. This supports previous studies (43–45). These results suggest that even if a birth seems normal, women can feel traumatized if they fear for their baby’s life, or if they perceive the attitudes of the practitioners around them as hostile or negative (32).

Contrary to our hypothesis, insecure attachment style was not found to be significantly associated with FOC, although it was associated with higher levels of postpartum depression and PTSD.

Conclusions and practical and theoretical implications. This study prominently highlights that a woman’s subjective childbirth experience plays a clearly significant role in her overall birth perception, mental health and welfare following birth, and mother-baby bond disorders. This has important implications for practitioners working with women in childbirth, such as midwives, doctors, and other birth assistants. When practitioners are more sensitive to the implications of the childbirth experience, they may be able to direct suitable support when required.

Our findings support an association between PTSD and postnatal depression with mother-baby bonds. While PTSD and depression can present separately, they also coincide, and can have an even more significant effect on women’s welfare than when they present alone. This has implications for routine screening by community health-service providers who need to be aware that PTSD may be present. Women who show signs of objective/subjective negative or traumatic birth experiences should be identified and observed closely to detect and diagnose psychopathology.

Finally, depression was significantly associated with couple relationship dissatisfaction, implying that treatment for women with postnatal depression should encompass the relationship with her partner. In contrast to prior studies, we do not report an association between couple relationship dissatisfaction and PTSD following childbirth. Thus, PTSD alone may not warrant couple therapy.

Limitations and recommendations for future research**.** It is possible that women who have postnatal PTSD/depression are less inclined to participate in a study of this nature, making it more difficult to improve our understanding of birth-related PTSD, depression, and their association with the study variables. Also, online surveys prevented the use of clinical diagnoses of PTSD and depression.

This was a cross-sectional study, which examined women at one time frame after childbirth. Women with PTSD or depression may have experienced other adverse events in their lives prior to delivery, and this could influence their childbirth experience and the level of postnatal symptoms. Also, the symptoms could have been caused by postnatal events. Future research needs to sample women both before and after childbirth in order to ensure more comprehensive results.

Declaration of Interest. The authors have no interests to declare.

Current knowledge on the subject:

* PTSD and depression may occur after childbirth;
* Psychopathology is related to impaired mother-baby bonds;
* Childbirth related PTSD may be related to impaired family relationships.

What this study adds:

* Depression, not PTSD, is related to increased couple dissatisfaction;
* Both PTSD and depression are related to increased mother-baby bond disorders;
* Fear of childbirth increases as symptoms of PTSD and depression increase.

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1. It is important to note that the software used for the data collection counts how many people opened the questionnaire, even if they did not answer a single question or opened it several times, thus explaining the large number of people who ‘began’ the questionnaire. [↑](#footnote-ref-1)