RBMO

REVIEW

Does IVF make people happy?



SEVIER



BIOGRAPHY

Mariana Sousa Leite is a Research Associate at the School of Psychology, Cardiff University (UK). She is a trained scientist-practitioner with specialized focus on health psychology and reproductive research. She currently holds an Economic and Social Research Council postdoctoral fellowship. Her primary research interests span assisted reproductive technology, parenthood decision-making and evidence-based practice.

Jacky Boivin is Professor of Health Psychology at the School of Psychology, Cardiff University, and director of the Women's Health Research Wales centre. Together with collaborators she has led pioneering research into the psychosocial aspects of fertility and produced many tools for patient support in fertility care.

Mariana Sousa-Leite, Jacky Boivin*

KEY MESSAGE

The process of undergoing IVF can offer positive psychological value, even when a live birth is not achieved. Positive emotions and psychosocial experiences of happiness can be experienced before, during and after IVF. A comprehensive picture of IVF requires a shift of research and practice to include the positives of IVF.

ABSTRACT

Research has been focused on exploring the negative side of IVF. However, a comprehensive picture of the overall impact of IVF needs to acknowledge its positive side. Prospective and cross-sectional research have shown that happiness can be experienced before, during and after IVF, irrespective of whether or not a live birth is achieved. Psychosocial models within positive psychology support the intrinsic benefit and adaptative effect of the action of undergoing IVF on well-being and mental health through the opportunity it affords people to achieve, accept and make meaning of their (un)realized parenthood goals. The PERMA model was used to explore the concept of happiness, with evidence showing that happiness can be achieved in IVF via positive emotions (most investigated), a sense of being engaged, positive relationships, and a sense of meaning and accomplishment. The positive lived experience of IVF can be moderated by individual patient characteristics, and enhanced by positive-focused approaches to care. High-quality research and patient-centred models of care are needed to evaluate and promote the holistic positive value of IVF in all dimensions of happiness.

ndergoing IVF can be associated with high psychosocial, physical and financial burdens, with approximately 15% of those undergoing IVF reporting long-lasting clinical maladjustment (*Verhoak et al., 2007*). When referring to IVF, we mean the 'sequence of procedures that involves extracorporeal fertilisation of gametes, which includes conventional invitro insemination and ICSI' (*Zegers-Hochschild et al., 2017*). The negative side of IVF is already well documented (for a review,

School of Psychology, Cardiff University, Cardiff, UK

see Gameiro and Finnigan, 2017). However, an exclusive focus on the negative side of IVF yields an incomplete perspective of its overall impact. This article examines the potential positive aspects of undertaking IVF.

WHAT DO WE MEAN BY IVF?

IVF is more than its outcome. We argue that a more inclusive study of IVF is needed to understand its impact and

© 2025 The Authors. Published by Elsevier Ltd on behalf of Reproductive Healthcare Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/)

*Corresponding author. E-mail address: boivin@cardiff.ac.uk (J. Boivin). https://doi.org/10.1016/j.rbmo.2025.104834 1472-6483/© 2025 The Authors. Published by Elsevier Ltd on behalf of Reproductive Healthcare Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/) address the question 'Does IVF make people happy?'. In academic research, reports from fertility authorities or professional societies, and routine clinical practice, the impact of IVF is evaluated in terms of its outcome of achieving a healthy live birth or meeting people's parenthood goals (e.g. achieving a desired family size). However, it seems reductive to define the success of IVF merely in terms of having children, when its pursuit may satisfy other needs that usually motivate people to become

KEY WORDS

IVF Happiness Positive psychology PERMA model

Declaration: The authors report no financial or commercial conflicts of interest.

parents, such as biological (e.g. genetic continuity), personal (e.g. identity, purpose) and sociocultural (e.g. meeting social norms and demands) needs. While it is reasonable and justifiable to prioritize the birth outcome, focusing on this outcome alone fails to acknowledge the intrinsic value of the process of undertaking IVF itself, including all its burdensome procedures. Undertaking IVF instantiates an active and challenging attempt to have children, which, we argue, has positive psychological value.

Coping theory and related research (Folkman and Moskowitz, 2000) within positive psychology have recognized the positive and adaptative benefits that can be gained from the experience of stressful chronic health situations such as infertility. According to these theories, undergoing IVF is a cognitive and behavioural effort that enables people to be actively engaged with their desired family goals, thereby promoting people's sense of agency and purpose, and sustaining their hope and motivation over time (Folkman and Moskowitz, 2000). Even when IVF ends without children, positive feelings and emotions can co-occur with the loss, particularly the perception of personal growth, the acquisition of new coping skills and resources (Lee et al., 2009; McCarthy, 2008), and a sense of peace of mind for having tried (Hammarberg et al., 2001; Lee et al., 2009). People report finding meaning in the action of pursuing meaningful life goals such as starting a family (Rasmussen et al., 2006), and undertaking IVF contributes meaningfully to people's ability to accept their infertility (Gameiro and Finnigan, 2017). This evidence challenges the current sole focus on the value of IVF for its capacity to produce a birth outcome. It moves the focus to include the broader consideration of the value associated with undertaking an active, meaningful and engaging attempt towards a desired family life goal (i.e. doing something), and the value of the process of undertaking it (i.e. growth from facing demanding life events).

WHAT DO WE MEAN BY HAPPINESS?

We argue that current psychosocial research is restrictive in addressing the presence of happiness in IVF. Happiness is universally valued, but is a complex concept to define due to its subjective nature and dependence on underlying motivations and sociocultural influence. In social and health psychology, many overlapping theories have explored the concept of happiness and well-being in the context of challenging experiences such as IVF. Examples include coping theories (e.g. Folkman and Moskowitz, 2000), motivational theories (e.g. Rasmussen et al., 2006), well-being and post-traumatic frameworks (e.g., Seligman, 2011), and related research. The PERMA model can be used to illustrate and explore the concept of happiness (Seligman, 2011). The PERMA model is a comprehensive, evidence-based framework for measuring and building happiness. Its five basic multidimensional building blocks of wellbeing include Positive emotions (feeling happiness, pleasure, joy, gratitude), a sense of being Engaged (being interested and involved in life activities), positive Relationships (establishing and maintaining positive and mutually beneficial relationships, feeling valued and supported), a sense of Meaning (having a sense of purpose and direction), and a sense of Accomplishment (experiencing feelings of mastery and achievement) (Seligman, 2011). Theoretical and practical applications concur that these are essential building blocks to improve overall happiness, and blocks have been applied successfully to different individual and sociocultural contexts and health-related domains. However, it is also recognized that other building blocks could be needed to increase the applicability of the model to diverse settings (e.g. work or performance; Donaldson et al., 2022). Regardless of specific building blocks, it is clear from the PERMA model that focusing solely on negative emotions and impacts, as is the case in most IVF psychosocial studies, does not fully capture all the dimensions that should be considered when deciding the overall impact of IVF.

DOES IVF MAKE PEOPLE HAPPY?

To many patients, practitioners and advocates, this question may come across as insensitive given the burden and associated psychosocial turmoil of IVF. However, to be comprehensive in understanding the patient journey, one must also examine where and when happiness co-exists with the challenges of IVF, as this positive aspect is also reported in personal accounts of the lived experience of IVF: This is it! Yahoo! We just pulled the trigger. Ready for the big day on the 5th Feb. Eggcited much! (Thematic qualitative analysis of patient IVF experiences shared on Instagram; *Perone et al., 2021*).

I appreciate myself for never giving up. Yes, I appreciate this. Hmm, I showed a lot of will-power; that is, [I] can do this [IVF and acupuncture]. I feel that not many people can make it, ha, so it was quite a difficult time. That is, in between, I had actually done many things (Woman who ended IVF without children. In-depth interviews analysed with grounded theory constructivist approach; Lee et al., 2009).

Considering these experiences and using the PERMA framework, we will argue that a sense of happiness can be experienced during and after the course of IVF. As will be presented, those moments of happiness likely vary in frequency and intensity depending on the stage of treatment, individual sociodemographic and coping resources, and the quality of patient-centred care. Nevertheless, they do exist and should be studied.

For many, IVF is the only option to achieve biological parenthood and, for some, it is the only option to achieve parenthood at all. Among those who have access and decide to seek medical assistance, the possibility of undergoing IVF and the opportunity it gives them to achieve parenthood is highly valued (PERMA sense of being engaged and sense of meaning). This value can be seen by the demand and use of IVF, including cross-border IVF, despite its high psychosocial burden and the high financial planning costs. This value can also be seen when treatment is not available, such as when fertility clinics closed worldwide during the coronavirus disease 2019 (COVID-19) pandemic and patients had their treatment postponed. Patients appraised this situation as very or extremely uncontrollable and stressful, and reported significant intense threat (worry, tension) and harm (sadness, discouragement) emotions in response to the closure: 'I am on a number of fertility forums. We all feel the same. Victimised and robbed of our human rights'; 'not being able to try again feels much worse than COVID-19' (cross-sectional mixedmethods online survey, n = 450 patients; Boivin et al., 2020). The value of access is also supported by the low proportion of patients who discontinue treatment before achieving pregnancy: 23% in a consecutive longitudinal cohort of 1391 couples

RBMO VOLUME 50 ISSUE 4 2025

3

referred to a fertility clinic in the Netherlands (*Brandes et al., 2009*).

Among those who decide to pursue IVF, the process of undergoing it is characterized by the co-existence of positive and negative emotions, although research tends to focus on turmoil and sadness. Results from patient daily monitoring reports have shown positive affect (PERMA positive emotions) as the predominant emotional reaction during the ovarian stimulation stage of IVF and immediately post-embryo transfer (compared with anxiety and depression; Boivin and Lancastle, 2010). The daily monitoring data have shown this co-existence in diverse settings and populations (Sweden: Boivin et al., 1998; UK: Boivin and Lancastle, 2010; Netherlands: Ockhuijsen et al., 2014). Other prospective, longitudinal research has also shown that patients experienced positive emotions of happiness, contentment, satisfaction, confidence, control and success 2-4 weeks before the start of IVF, on the day of oocyte retrieval, and 2 weeks after the end of the cycle, even in the case of not achieving a

pregnancy (although to a lesser extent; Holter et al., 2006). Patient daily monitoring reports have also shown that positive emotions of optimism and intimacy with their partner, defined by affection and discussion, were also particularly prevalent on the day of oocyte retrieval and embryo transfer (Boivin et al., 1998). Results from an online survey in four European countries (France, Germany, Italy and Spain) showed that patients, both during and after fertility treatment, including IVF, reported positive emotions of hope, cautious optimism, motivation and confidence (Domar et al., 2012). After finishing IVF treatment (i.e. all IVF cycles), even those patients who did not achieve a live birth did not regret having undergone IVF (Hammarberg et al., 2001), and tended to report positive and adaptative effects, particularly a sense of personal strength for having tried to achieve their parenthood goals, and being able to manage the rollercoaster of emotions (PERMA sense of accomplishment; Daniluk, 2001; Lee et al., 2009; McCarthy,

2008). Patients also tended to report a sense of personal growth (resilience, persistence, sense of humility), personal normalcy, restored equilibrium and spiritual growth (*Lee et al., 2009*), which tended to increase over time as patients adjusted to and found meaning in the treatment experience (PERMA sense of

meaning; Daniluk, 2001). Most patients also acknowledged the positive effect of the IVF process on their relationship with their partner, whereby they felt more supported, connected and understood (PERMA positive relationships; Daniluk, 2001; Lee et al., 2009). Prospective longitudinal cohort studies and randomized controlled trials conducted in Denmark (well rated in terms of equitable, safe and efficient fertility treatments) have been particularly interested in investigating the marital benefit of undergoing fertility treatment (Bergenheim et al., 2025; Peterson et al., 2011; Pilegaard et al., 2023; Priskorn et al., 2021; Schmidt et al., 2005). Results have consistently shown that a significant proportion of patients (19-32.8%) undergoing or who have undergone fertility treatment, particularly IVF, self-report high marital benefit of infertility in terms of bringing the couple closer together and strengthening their relationship (Bergenheim et al., 2025; Peterson et al., 2011; Pilegaard et al., 2023; Schmidt et al., 2005). Indeed, a 20-year follow-up study found that US women who underwent IVF, and other fertility treatments, had a lower risk of divorce compared with the control group (Barbuscia and Sironi, 2023). This was also true for women who did not achieve a pregnancy (Barbuscia and Sironi, 2023). Another large national register-based study from Denmark indicated reduced risk of relationship break-up among patients who had undergone fertility treatment compared with the control group up to 16 years after the end of treatment (Martins et al., 2018). These results show that the experience of undergoing IVF can affect the way that people perceive their relationships in a positive way.

Individual characteristics and external factors can moderate the lived experience of IVF happiness. For instance, personality characteristics, flexible parenthood meaning, use of meaning-based coping strategies, and high social and relational support can have a positive impact on the experience of IVF (Verhaak et al., 2005). Not all patients pursue IVF, and the decision to do so may reflect something about those people for whom trying IVF could be a positive effort. Approximately 16% of patients who are referred to a fertility clinic discontinue the process before starting IVF (Brandes et al., 2009). We can argue that, for these people, the action of pursuing IVF and parenthood may not trigger, or trigger to a different

extent, the positive PERMA dimensions of happiness and well-being. The limited research available comparing those who pursued fertility treatment, including IVF, with those who did not pursue treatment found that those who pursued treatment were more likely to feel hopeful and optimistic (26% versus 21%, respectively; P > 0.05) and feel closer to their partner (33% versus 19%, respectively; P < 0.05) compared with those who did not pursue treatment (*Domar et al., 2012*). However, more high-quality research is needed.

Approaches to clinical care can also moderate the lived experience of IVF happiness. Positive experiences presented thus far describe what patients experience without intervention. When psychosocial interventions focused on bolstering positive experiences of those undergoing fertility treatment, including IVF, are implemented, healthy adjustment is reported. This adjustment is associated with positive narratives during fertility treatment ('I really appreciated the group and it helped us with our problems and our relationship'; report from fertility patients undergoing a group cognitive-behavioural intervention; Arpin et al., 2019) and translated into more positive emotions (Ockhuijsen et al., 2014), and better mental health and quality of life (Arpin et al., 2019). It is well established that highquality care is care that encompasses a routine holistic and multidisciplinary approach that meets patients' preferences and needs. Greil et al. (1988) were among the first to stress that adopting a multidisciplinary model of couple-centred treatment in fertility care could promote more positive experiences. Recent evidence has identified some indicators of what patients considered would improve their lived experience of IVF. Mixedmethods cross-sectional studies showed that this includes shared decision-making; short- and long-term treatment planning; and discussing multiple treatment cycles (Harrison et al., 2021), individual prognostic information, support for psychosocial adjustment during and after treatment, and alternative paths to and beyond parenthood (Sousa-Leite et al., 2022, 2023). It is expected that this provision would help patients manage their expectations; make more informed and timely decisions; and promote a healthier psychosocial adjustment during and after treatment, and happier experiences of IVF (Harrison et al., 2021; Sousa-Leite et al., 2022, 2023).

As acknowledged at the start of this article, there is limited research focused on the positive side of IVF. This is likely because the positive aspects are unintended consequences of the IVF process, and IVF is not the method by which people would typically seek to achieve these positives. Nevertheless, they exist and should be studied. Despite evidence supporting the positive and adaptative effects of IVF, it is unclear whether these positives can be experienced by all. Deficits in psychological research could impact what has been reported thus far. For instance, limited psychosocial research exists on those who do not pursue IVF (e.g. difficult recruitment, not in clinic), those who do not have access or have limited access to IVF (e.g. low-income countries, same-sex couples, single women), and other ethnic or minority groups and cultures for which the meaning of parenthood and undergoing treatment differ and carry severe additional psychosocial burdens for people (i.e. stigma of infertility, religious bans, need for cross-border care, worse treatment outcomes). For these underserved groups, it is not known whether the sense of happiness before, during and after IVF would be amplified or attenuated. It could be argued that IVF would be an added burden, or it could have greater 'opportunity value' and heightened positive experiences as described. Further research is needed.

In addition, some seemingly positive emotions can, in fact, have negative consequences. Motivational and developmental life-span theories (e.g. Rasmussen et al., 2006) advocate that hope, and related positive emotions, are essential to foster patients' sense of agency about their competence and autonomy to undergo IVF, and to motivate them to pursue this path. However, these same theorists argue that the persistence of hope when goals become less achievable could be problematic. Over-optimism (i.e. optimism in the face of very low odds) is well established in the IVF context, and as a result, some patients may persist in pursuing this path despite the low likelihood of success (Devroe et al., 2022). For such patients, hope may cause them to face additional stressful decision-making challenges (e.g. about untested add-ons; Perrotta and Hamper, 2021), or have fewer positive experiences of treatment due to more treatment with little possibility of success (Devroe et al., 2022). In such cases, theorists argue that hope should turn towards alternative, more realistic and

fulfilling life goals beyond parenthood, with research showing that this disengagement is a better strategy psychologically (Rasmussen et al., 2006). Note that overpersistence does not seem to be an issue in IVF, as few patients who do not achieve a live birth with treatment undertake more than three complete cycles. Indeed, recent prospective longitudinal data for a complete cohort showed that only 28% of patients in Belgium undergo more than three IVF cycles, despite the fact that up to six cycles are reimbursed (De Neubourg et al., 2021). Finally, it can be argued that the question 'Does IVF make people happy?' is not sufficiently nuanced to fully capture the complex emotional and psychological environment that IVF produces. Seligman (2011) acknowledged problems with the happiness terminology, and proposed the PERMA model to explore positive themes in life experiences. We would encourage the exploration of PERMA terminology (e.g. meaning, being engaged, positive relationships) for researchers interested in the positive psychology of IVF.

IMPLICATIONS AND FUTURE DIRECTIONS IN RESEARCH AND PRACTICE

Future research can direct its focus on coproducing patient-centred models of care with relevant stakeholders to rethink and reframe the portrayal and study of IVF from a sole focus on achieving a live birth or negative impacts of IVF to also including the adaptative effect of its process on patients' well-being and mental health. High-quality longitudinal designs and, when possible, controlled designs (e.g. wait-list control designs) are needed to evaluate the adaptative impacts of the IVF process in all PERMA dimensions (positive emotions, sense of being engaged, positive relationships, sense of meaning and accomplishment) before, during and after treatment. Investigating how to evaluate these dimensions and focusing on developing and testing positive psychosocial interventions is crucial to promoting a happier experience of IVF. Recent evidence also suggests that positive interventions create value for the patient, but also create a high return on investment for clinics (Kaptein et al., 2024). To address the disparities in reproductive health service access and outcomes, these interventions should be adapted and appropriate across geographies, protected characteristics, and inclusion of health groups.

CONCLUSION

IVF can trigger happiness through the opportunity it affords people to achieve parenthood, and through the adaptive effects of undergoing challenging life experiences. These can contribute to people accepting and making meaning of (un)realized parenthood goals. However, research on positive aspects of psychology only addresses a small portion of the dimensions of happiness according to the PERMA model of elements that make people happy. To fully capture the complex emotional and psychological environment produced by the IVF process and its outcome, a shift of research and practice is needed to understand the adaptative and positive effects that may arise from, and can be promoted by, the action of undertaking IVF.

Arpin, V., Brassard, A., El Amiri, S., Peloquin, K., 2019. Testing a New Group Intervention for Couples Seeking Fertility Treatment: Acceptability and Proof of Concept. J Sex Marital Ther 45 (4), 303–316.

Barbuscia, A., Sironi, M., 2023. Do couples who use fertility treatments divorce more? Evidence from the US National Survey of Family Growth. Demogr Res 49 (23), 601–634.

Bergenheim, S., Saupstad, M., Colombo, C., Moller, J.E., Bogstad, J.W., Freiesleben, N.C., Behrendt-Moller, I., Praetorius, L., Oxlund, B., Nohr, B., Husth, M., Lokkegaard, E., Sopa, N., Pinborg, A., Lossl, K., Schmidt, L., 2025.
Psychosocial and physical wellbeing in women and male partners undergoing immediate versus postponed modified natural cycle frozen embryo transfer after ovarian stimulation and oocyte pickup: a sub-study of a randomized controlled trial. Hum Reprod 40 (1), 96–109.

Boivin, J., Andersson, L., Skoog-Svanberg, A., Hjelmstedt, A., Collins, A., Bergh, T., 1998. Psychological reactions during in-vitro fertilization: similar response pattern in husbands and wives. Hum Reprod 13 (11), 3262–3267.

Boivin, J., Harrison, C., Mathur, R., Burns, G., Pericleous-Smith, A., Gameiro, S., 2020. Patient experiences of fertility clinic closure during the COVID-19 pandemic: appraisals, coping and emotions. Hum Reprod 35 (11), 2556–2566.

Boivin, J., Lancastle, D., 2010. Medical waiting periods: imminence, emotions and coping. Women's Health 6 (1), 59–69.

Brandes, M., van der Steen, J.O., Bokdam, S.B., Hamilton, C.J., de Bruin, J.P., Nelen, W.L., Kremer, J.A., 2009. When and why do subfertile couples discontinue their fertility care? A longitudinal cohort study in a secondary care subfertility population. Hum Reprod 24 (12), 3127–3135.

Daniluk, J.C., 2001. Reconstructing Their Lives: A Longitudinal, Qualitative Analysis of the Transition to Biological Childlessness for Infertile Couples. J Couns Dev 79 (4), 439–449.

De Neubourg, D., Bogaerts, K., Anagnostou, E., Autin, C., Blockeel, C., Coetsier, T., Delbaere, A., Gillain, N., Vandekerckhove, F., Wyns, C., 2021. Evolution of cumulative live birth and dropout rates over six complete IVF/ICSI cycles: a large prospective cohort study. Reprod Biomed Online 42 (4), 717–724.

Devroe, J., Peeraer, K., D'Hooghe, T.M., Boivin, J., Laenen, A., Vriens, J., Dancet, E.A.F., 2022. Great expectations of IVF patients: the role of gender, dispositional optimism and shared IVF prognoses. Hum Reprod 37 (5), 997–1006.

Domar, A., Gordon, K., Garcia-Velasco, J., La Marca, A., Barriere, P., Beligotti, F., 2012. Understanding the perceptions of and emotional barriers to infertility treatment: a survey in four European countries. Hum Reprod 27 (4), 1073–1079.

Donaldson, S.I., van Zyl, L.E., Donaldson, S.I., 2022. PERMA+4: A Framework for Work-Related Wellbeing, Performance and Positive Organizational Psychology 2.0. Front Psychol 12,

817244

Folkman, S., Moskowitz, J.T., 2000. Positive affect and the other side of coping. Am Psychol 55 (6), 647–654.

Gameiro, S., Finnigan, A., 2017. Long-term adjustment to unmet parenthood goals following ART: a systematic review and meta-analysis. Hum Reprod Update 23 (3), 322–337.

Greil, A.L., Leitko, T.A., Porter, K.L., 1988. Infertility: His and Hers. Gender Soc 2 (2), 172–199.

Hammarberg, K., Astbury, J., Baker, H., 2001. Women's experience of IVF: a follow-up study. Hum Reprod 16 (2), 374–383.

Harrison, C., Gameiro, S., Boivin, J., 2021. Patient willingness, preferences and decision-making about planning for three complete cycles of IVF/ ICSI treatment. Hum Reprod 36 (5), 1339–1352.

Holter, H., Anderheim, L., Bergh, C., Moller, A., 2006. First IVF treatment – short-term impact on psychological well-being and the marital relationship. Hum Reprod 21 (12), 3295–3302.

Kaptein, A.A., Harper, J.C., Dool, G.V.D., Schoonenberg, M., Smeenk, J., Daneshpour, H., Troost, M., van Wijk, L.M., Tielen, N., Smit, E., Laven, J., Hoek, A., Boivin, J., 2024. Business case for psychosocial interventions in clinics: potential for decrease in treatment discontinuation and costs. Reprod Biomed Online 49 (3), 104113.

Lee, G.L., Hui Choi, W.H., Chan, C.H., Chan, C.L., Ng, E.H., 2009. Life after unsuccessful IVF treatment in an assisted reproduction unit: a qualitative analysis of gains through loss among Chinese persons in Hong Kong. Hum Reprod 24 (8), 1920–1929.

Martins, M.V., Vassard, D., Hougaard, C.O., Schmidt, L., 2018. The impact of ART on union dissolution: a register-based study in Denmark 1994-2010. Hum Reprod 33 (3), 434–440.

McCarthy, M.P., 2008. Women's lived experience of infertility after unsuccessful medical intervention. J Midwifery Wom Heal 53 (4), 319– 324.

Ockhuijsen, H., van den Hoogen, A., Eijkemans, M., Macklon, N., Boivin, J., 2014. The impact of a selfadministered coping intervention on emotional well-being in women awaiting the outcome of IVF treatment: a randomized controlled trial. Hum Reprod 29 (7), 1459–1470.

Perone, H.R., Herweck, A.M., Stump, H.M., Levine, H.M., Wong, A.J., Carugno, J., 2021. The virtual infertility community: a qualitative analysis of patient experiences shared on Instagram. J Assist Reprod Genet 38 (3), 613–620.

Perrotta, M., Hamper, J., 2021. The crafting of hope: Contextualising add-ons in the treatment trajectories of IVF patients. Soc Sci Med 287, 114317.

Peterson, B.D., Pirritano, M., Block, J.M., Schmidt, L., 2011. Marital benefit and coping strategies in men and women undergoing unsuccessful fertility treatments over a 5-year period. Fertil Steril 95 (5), 1759–1763.E1751.

Pilegaard, S.P., Schmidt, L., Stormlund, S., Koert, E., Bogstad, J.W., Praetorius, L., Nielsen, H.S., la Cour Freiesleben, N., Sopa, N., Klajnbard, A., Humaidan, P., Bergh, C., Englund, A.L.M., Lossl, K., Pinborg, A., 2023. Psychosocial wellbeing shortly after allocation to a freeze-all strategy compared with a fresh transfer strategy in women and men: a sub-study of a randomized controlled trial. Hum Reprod 38 (11), 2175–2186.

Priskorn, L., Tottenborg, S.S., Almstrup, K., Andersson, A.M., Axelsson, J., Brauner, E.V., Elenkov, A., Freiesleben, N.C., Giwercman, Y.L., Grondahl, M.L., Hansen, A.H., Hansen, L.S., Henic, E., Kitlinski, M.L., Landersoe, S.K., Lindh, C., Lokkegaard, E.L., Malm, J., Olsen, K.W., Petersen, K.U., Schmidt, L. Stormlund, S., Svendsen, P.F., Vassard, D., Wang, N.F., Zedeler, A., Bhasin, S., Chavarro, J., Eisenberg, M.L., Hauser, R., Huhtaniemi, I., Krawetz, S.A., Marko-Varga, G., Salonia, A., Toppari, J., Juul, A., Jorgensen, N., Nielsen, H.S., Pinborg, A., Rylander, L., Giwercman, A., 2021. RUBIC (ReproUnion Biobank and Infertility Cohort): A binational clinical foundation to study risk factors, life course, and treatment of infertility and infertility-related morbidity. Andrology 9 (6), 1828–1842.

Rasmussen, H.N., Wrosch, C., Scheier, M.F., Carver, C.S., 2006. Self-regulation processes and health: the importance of optimism and goal adjustment. J Pers 74 (6), 1721–1747.

Schmidt, L., Holstein, B., Christensen, U., Boivin, J., 2005. Does infertility cause marital benefit? An epidemiological study of 2250 women and men in fertility treatment. Patient Educ Couns 59 (3), 244–251.

Seligman, M., 2011. Flourish. Free Press, New York. Sousa-Leite, M., Costa, R., Figueiredo, B., Gameiro, S., 2023. Discussing the possibility of fertility treatment being unsuccessful as part of routine care offered at clinics: patients' experiences, willingness, and preferences. Hum Reprod 38 (7), 1332–1344.

Sousa-Leite, M., Fernandes, M., Reis, S., Costa, R., Figueiredo, B., Gameiro, S., 2022. Feasibility and acceptability of psychosocial care for unsuccessful fertility treatment. Health Expect 25 (6), 2902–2913.

Verhaak, C.M., Smeenk, J.M., Nahuis, M.J., Kremer, J.A., Braat, D.D., 2007. Long-term psychological adjustment to IVF/ICSI treatment in women. Hum Reprod 22 (1), 305–308.

Verhaak, C.M., Smeenk, J.M., van Minnen, A., Kremer, J.A., Kraaimaat, F.W., 2005. A longitudinal, prospective study on emotional adjustment before, during and after consecutive fertility treatment cycles. Hum Reprod 20 (8), 2253–2260.

Zegers-Hochschild, F., Adamson, G.D., Dyer, S., Racowsky, C., de Mouzon, J., Sokol, R., Rienzi, L., Sunde, A., Schmidt, L., Cooke, I.D., Simpson, J.L., van der Poel, S., 2017. The International Glossary on Infertility and Fertility Care, 2017. Hum Reprod 32 (9), 1786–1801.

Received 6 November 2024; received in revised form 9 January 2025; accepted 10 January 2025.