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Beyond the embrace: a phenomenological qualitative exploration of the impact of kangaroo mother care (KMC) on couple relationships in China

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ABSTRACT

Objectives To explore the impact of kangaroo mother care (KMC), involving both mothers and fathers, on the dynamics of couple relationships.

Design Qualitative phenomenological study.

Setting A regional comprehensive centre for child healthcare.

Participants 11 couples engaged in KMC with their infants. We created a semistructured interview guide to conduct face-to-face interviews separately with both wives and husbands. The interviews were audio-recorded and transcribed verbatim, and analysed using Braun and Clarke's thematic analysis technique.

Results Analysis of participants' narratives revealed three pivotal themes: 'strengthening of couple relationship', 'role adaptation and redefinition' and 'conflicts and resolution'. These themes collectively illustrated the complex interplay between enhanced emotional intimacy, renegotiated parental roles and the navigation of conflicts within the context of neonatal caregiving.

Conclusions KMC may have effects on couple relationships beyond its immediate benefits for the infant. It may potentially influence the emotional and relational dynamics between partners. Couples' experiences with KMC practices are multifaceted and complex. Through the intimate act of KMC, couples may experience a deepening of emotional bonds, redefinition of roles and identities, and encounter both challenges and opportunities for conflict resolution. Adopting a more holistic approach to neonatal care including attention to the couple's relationship and engaging in KMC is suggested.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ We used a qualitative phenomenological approach to deeply explore the lived experiences of couples engaging in kangaroo mother care.
⇒ We conducted separate semistructured interviews with both partners to capture individual perspectives and reduce potential bias from joint responses.
⇒ Participants in our study are predominantly from affluent backgrounds, which may not reflect the experiences of couples with lower socio-economic status.

BACKGROUND

Kangaroo mother care (KMC) has emerged as a transformative approach in the nurturing care of preterm and low birthweight infants.[1] Characterised by prolonged skin-to-skin contact between the infant and a caregiver, typically the mother, KMC transcends conventional neonatal care practices by fostering an intimate connection that is both primal and profoundly beneficial.[2 3] The practice is not merely physical in nature but deeply relational, laying a foundation for enhanced infant health, accelerated development and strengthened maternal bonds.[4] Beyond its immediate physiological benefits, KMC is celebrated for its role in enhancing maternal-infant attachment, breastfeeding rates and emotional well-being, underscoring its significance as a holistic care strategy.[5 6]

The origins of KMC can be traced back to Bogotá, Colombia, in the late 1970s, born out of necessity to manage the shortage of incubators and combat the high rates of neonatal morbidity and mortality.[7] This innovative care model, inspired by the marsupial method of care, quickly demonstrated its efficacy, leading to its adoption and adaptation across diverse global healthcare settings. KMC's core components include continuous skin-to-skin contact, exclusive breastfeeding and early discharge with close follow-up, a triad that has been extensively researched and validated.[7–9] Studies consistently highlight KMC's role in stabilising infant temperature, heart rate and respiratory function, while also reducing the risks of hospital-acquired infections, neonatal mortality and promoting psychological and developmental outcomes.[10–15]

Family-centred care has increasingly become a cornerstone in neonatology, advocating for an integrative approach that places the family at the heart of neonatal care. This

perspective recognises the critical role of both parents in the nurturing and development of preterm infants, emphasising the importance of their active involvement in care decisions and practices.[16 17] The inclusion of both parents fosters a collaborative care environment that not only benefits the infant but also strengthens family bonds and dynamics.

Research within neonatal intensive care units (NICUs) has shed light on the profound impact of such environments on parental relationships and family cohesion. The NICU journey, characterised by its high-stress, high-stakes nature, can place significant emotional and psychological strain on parents, altering their interactions and overall family dynamics.[18 19] Studies have shown that while the shared experience of navigating the challenges of the NICU can strengthen some relationships through shared purpose and empathy, it can also exacerbate stress, leading to increased conflict and emotional distance in others.[20–22] These insights underline the necessity of supporting not just the infant, but the entire family unit, to mitigate the potential strains of neonatal care on parental relationships.

Despite the growing body of literature on KMC and its multifaceted benefits, a notable gap remains in understanding its specific impact on the couple's relationship. This is significant because the dynamics between partners can profoundly influence both parental well-being and infant outcomes. Strong couple relationships can create a supportive environment potentially enhancing the effectiveness of KMC, while relational tensions may hinder collaborative caregiving efforts, potentially affecting the health and development of the infant. However, much of the existing research has centred on the mother-infant dyad, with less attention given to the dynamics between partners and how they navigate the shared experience of KMC.[23 24] The couple's relationship, as a foundational element of the family structure, plays a pivotal role in the emotional and psychological well-being of both the parents and the infant, making it a critical area of study.

Exploring the couple's experience with KMC is essential, given the shared responsibilities and emotional journey involved in caring for a vulnerable infant. The practice of KMC is not only a method of infant care but also a deeply emotional and relational experience that can influence the dynamics of couple relationships in significant and varied ways.

After exploring the effects of KMC on the fathers in a qualitative study which our research team performed, we have furthered our endeavour by investigating the impact of KMC on couple relationships for its potential implications for understanding the nuances of emotional intimacy, communication, role adaptation and shared caregiving experiences within the context of neonatal care, where KMC can serve as a catalyst for deepening emotional bonds through shared responsibility and mutual support and present challenges as couples navigate the demands and vulnerabilities associated with preterm care. In the current study, we delved into the lived experiences of couples engaged in KMC for their preterm or low birthweight infants, aiming to understand the phenomenological impact of KMC on their relationship dynamics.

Our findings may bridge a critical gap in the current body of knowledge by illuminating the nuanced and often intimate ways in which KMC shapes the interpersonal landscape between partners, providing a deeper understanding of its effects beyond the immediate benefits to the infant and mother. Also, our work may enrich neonatal care practices by emphasising the importance of supporting not only the infant and mother but the couple and family unit as a whole, leading to more holistic and family-inclusive care models. Insights garnered from this research can inform the development of family-centred care guidelines and practices that more fully acknowledge and incorporate the needs and experiences of both parents, creating more empathetic and supportive care environments to facilitate positive family dynamics and emotional well-being. Clinically, a deeper understanding of how KMC affects couple dynamics can also equip healthcare professionals with the knowledge to better support families engaged in KMC.

MATERIALS AND METHODS

Study setting and research team

We conducted our study at the Affiliated Children's Hospital of Soochow University, a regional comprehensive centre for child healthcare. The research team consisted of clinicians from the hospital's NICU, which annually cares for 800 preterm or low birthweight infants. Our KMC programme was initiated in 2008, involving both mothers and fathers as appropriate.

All members of the research team received training in qualitative research methodologies, semistructured interview techniques and thematic analysis. Prior to this study, the team undertook a qualitative exploration into the effects of KMC on fathers directly involved in caregiving.

Study design

This study employed a qualitative phenomenological research design to explore the subjective lived experiences and insights of parents involved in the KMC of their infants.

Participant selection

Sampling strategy

Purposive sampling.

Inclusion and exclusion criteria

Inclusion criteria

Participants must be part of a couple that had engaged in KMC with their preterm or low birthweight infant. Both members of the couple must be willing to participate in the study. The infant must have been born preterm (< 37 weeks gestation) or with low birth weight (< 2500 g),

should be stable enough for KMC and have received KMC within the first six months of life.

Exclusion criteria

The infant's condition was unstable or serious and unfit for KMC. One or both partners were unwilling or unable to participate. Non-parental caregivers, such as relatives or friends who had participated in KMC but did not form part of the core parental unit. Couples with one or both partners having not practised KMC or whose experience with KMC did not align with the study's focus on preterm or low birthweight infants.

Sample size

The anticipated sample size was 10–15 couples. The endpoint to discontinue interviews was determined by the data saturation principle, where no new information or themes emerged from subsequent interviews.

Data collection

Interview format

The demographic and clinical information of the couples and their infants was retrieved from the infants' medical records. Data for thematic analysis were collected using face-to-face semistructured interviews, which were conducted with the partners separately.

Interview guides

Separate interview guides were developed for husbands and wives collaboratively by the research team, with expert input on KMC, neonatal care and couple dynamics (online supplemental appendix 1). The guides were structured around main themes aligned with the study aims, including experiences with KMC, changes in the couple's relationship dynamics, communication patterns and emotional support, with questions being largely open-ended to encourage detailed narratives and reflections. Prompts and follow-up questions were prepared to probe deeper.

We tested the interview guides with three pilot participants to ensure clarity, relevance and sensitivity. Adjustments were made based on feedback. The pilot interviews were not included in subsequent analysis.

Interview setting

Interviews were conducted in a quiet comfortable meeting room, ensuring privacy and minimal distractions.

Procedure

Beginning in July 2023, the principal investigator (PI, first author) selected participants by identifying potential couples from those who had engaged in KMC for their infants treated in the NICU using the inclusion and exclusion criteria. The PI initiated contact by phone call, providing a brief overview of the study's objectives, process and significance, and asked if the couples were interested and willing to participate. Interested couples were scheduled for interviews during one of their subsequent follow-up clinic visits, with both partners being interviewed separately in the designated meeting room.

Before the interviews, the PI explained the study details thoroughly, stressing the participants' right to withdraw from the study at any point without any repercussions and measures for privacy and confidentiality protection, assuring that interview recordings and data would remain inaccessible to their partners and would be meticulously anonymised to obviate personal identification. Informed consent was then obtained from both partners if they agreed to proceed.

To maintain the uniformity and quality of the data collection process, the PI personally conducted all interviews. In case the couple had a treating relationship with the PI, a different researcher assumed the interviewer's role. Interview techniques, such as active listening, probing, reflective mirroring and pause, were employed to encourage participants to share personal stories and reflections and delve deeper into pertinent topics.

During each partner's interview, the other partner was accommodated in a separate, non-adjacent room to ensure privacy and minimise potential influence on responses. Each interview was concisely conducted within 40 min to respect participants' time and minimise fatigue, with audio recordings made with their explicit consent. The PI also took field notes to capture significant non-verbal cues, such as facial expressions, gestures and emotional responses, which provided additional context to the verbal narratives.

The audio recordings were transcribed verbatim by a designated researcher within 24 hours of each interview. To manage workload and prevent interviewer fatigue, the PI limited the schedule to a maximum of three interviews per day.

Data saturation

Data saturation was considered achieved when two consecutive additional interviews no longer yielded new information or themes relevant to the research questions, by which point the data collection process was concluded.

Data analysis

Thematic analysis

We employed Braun and Clarke's thematic analysis framework for data analysis, a widely recognised and rigorous method for identifying, analysing and reporting patterns within qualitative data.[25 26]

This analytical process began with a thorough reading of the interview transcripts to achieve familiarisation. Key ideas and recurrent themes were noted during this initial review, which was followed by the initial coding phase involving a systematic and detailed annotation of the data, where codes were generated inductively, closely reflecting the content of the data. The research team revisited the data and codes multiple times during this iterative phase to ensure comprehensive coverage.

The codes were then collated into potential themes, where all data relevant to each potential theme were

assembled. Then the developed themes were reviewed and refined to ensure that they accurately represented the data set. Attention was paid to the coherence of individual themes, the balance between them and the overarching narrative of the analysis.

Eventually, we finalised the themes and produced the report. Each theme was named and described, with compelling extracts selected to illustrate the themes.

Verification, rigour and trustworthiness

To ensure the validity and reliability of the thematic analysis, we employed meticulous verification strategies, including cross-checking involving multiple researchers independently analysing the data set and comparing findings as well as regular discussions and reflections on the analysis process and findings.

Notably, as the study involved spousal relationships, childbirth, disease and healthcare, which were experiences shared by the researchers, we meticulously considered the potential influence of researchers' personal experiences on the research process. Initially, we reviewed each team member's life experiences to ascertain the presence of experiences that might impact their perspective, such as divorce, significant negative events related to childbearing and caregiving, including abortion, miscarriage, disease, death and/or significant medical conditions in children at young ages.

Subsequently, we identified two researchers within our team who had encountered such profound experiences. Mindful of the potential biases these experiences could introduce, we carefully decided not to involve these individuals in roles that required direct interaction with study participants or in leading the analysis of interview transcripts, in order to minimise the potential for their experiences to inadvertently colour the data collection or interpretation processes.

Furthermore, we instituted a protocol requiring all researchers, irrespective of their backgrounds or personal experiences, to engage in continuous critical self-reflection throughout the research process, to foster an ongoing awareness of personal biases and perspectives, thereby enhancing the objectivity and depth of our qualitative analysis.

Additionally, member checking was conducted by sharing our preliminary themes with participants to validate the accuracy of our interpretations. Reflexivity logs were kept throughout the research process to document researchers' reflections, potential biases and the influence of their personal experiences on data collection and analysis. An audit trail was also maintained to record the steps from data collection to theme development.

Use of large language model

ChatGPT-4 was used to translate and extensively refine the English language of the original manuscript. All generated text was meticulously reviewed before use. Large language models were not used in the original design, implementation and initial drafting of the manuscript.

Table 1 Sociodemographic characteristics of participants (n=11 couples)

Characteristic	Wife	Husband
Age (years)	Mean: 25.8 Range: 22–30	Mean: 28.4 Range: 25–34
Education level	Senior high: 1 (9%) Technical college: 2 (18%) Undergraduate: 8 (73%)	Postgraduate: 2 (18%) Technical college: 1 (9%) Undergraduate: 8 (73%)
Employment	Office worker: 5 (45%) Business owner: 3 (27%) Factory worker: 1 (9%) Teacher: 1 (9%) Coach: 1 (9%)	Office worker: 5 (45%) Public servant: 3 (27%) Business owner: 3 (27%) Police officer: 1 (9%)
Annual household income (yuan RMB)	<100 000: 1 (9%) 100 000–200 000: 7 (64%) >200 000: 3 (27%)	<100 000: 1 (9%) 100 000–200 000: 7 (64%) >200 000: 3 (27%)

RESULTS

Demographic characteristics of participants

We interviewed a total of 11 couples before data saturation was achieved. The husbands were aged 28.4 years on average and wives 25.8 years. Most of them had an education level of undergraduate or over. Their employments were diverse, none of whom were unemployed. Most couples were financially affluent, who made more than 100 000 yuan RMB per year.

Their sociodemographic characteristics are presented in table 1.

Themes

The narratives of the 11 couples engaged in KMC unveiled a rich tapestry of shared experiences, challenges and transformations, which wove together three pivotal themes. These themes, namely 'strengthening of couple relationship', 'role adaptation and redefinition' and 'conflicts and resolution', collectively illustrated the complex interplay between enhanced emotional intimacy, renegotiated parental roles and the navigation of conflicts within the context of neonatal caregiving.

Theme 1: strengthening of couple relationship

KMC seemed to act as a catalyst for enhancing the emotional and intimate connections between partners. The transformative power of shared caregiving experiences, particularly through the intimate practice of KMC, fostered deeper emotional bonds, increased intimacy and built trust within the couple's relationship.

Sub-theme 1: deepening emotional bonds

It was repeatedly mentioned that KMC fostered a profound enhancement of emotional intimacy between partners, a pivotal experience not only bringing them

closer to their newborn but also to each other. The act of skin-to-skin contact, central to KMC, was a powerful medium through which couples navigated new dimensions of their relationship, unlocking deeper levels of empathy, understanding, and emotional support.

Extracts from interview transcripts:

> Wife, Couple 3: "Every time we hold the baby close to me, I feel like our heartbeats are in sync. Really, that feeling of closeness, I don't know how to describe it, it just feels like we are more of a family now."
>
> Husband, Couple 7: "One night, I was watching my wife and baby sleep, and I just sat there, feeling my heart melt, thinking, this is everything I need to protect, I have to work even harder."
>
> Husband, Couple 9: "I wasn't good at expressing myself before, but since we had the baby, especially holding her skin-to-skin, I almost cried for the first time. I told my wife I loved them more than ever before, it's indescribable." (Eyes filled with tears, had to pause to calm himself)
>
> Wife, Couple 10: "Now, the first thing he does when he comes home from work is to ask how the baby is, and then he hugs me. He didn't do these things before, it feels more emotional, more loving than before."

Sub-theme 2: transformation of intimate relationships

The tactile and nurturing acts inherent in KMC naturally segued into a renaissance of physical and emotional intimacy among couples. Through the act of shared caregiving and the intimate skin-to-skin contact with their newborn, some couples experienced a revival of affectionate behaviours that might have been dormant due to the demands of daily life.

> Wife, Couple 1: "I found that since having the baby, especially since he (husband) started holding the baby like that (skin-to-skin), we've had more physical contact. Now, whether it's hugging or kissing, it all feels more natural and loving."
>
> Wife, Couple 4: "We used to be so busy with work, we'd do our own thing in the evenings. Now it's different, every night we hold the baby together, that skin-to-skin feeling, it kind of brings back the intimacy from when we were dating."
>
> Husband, Couple 7: "Since we started this kangaroo care, I don't know why, but every time I see the baby asleep in my wife's arms, I just can't help but want to hug her (wife) and kiss the baby."

Sub-theme 3: enhanced trust and dependence

The shared experiences of KMC appeared to serve as a mechanism for fostering a deeper sense of trust and reciprocal support among couples during the early stages of parenting, reinforcing their confidence in each other's roles as caregivers. Through the intimate act of KMC, they reported experiencing a significant shift in their relational dynamics, marked by increased empathy, understanding and appreciation for each other's contributions to caregiving.

> Wife, Couple 3: "When I get up at night to feed, he would also get up and keep me company. He insists on staying awake, saying it's too hard for me alone, and I'm really touched. I feel very secure, like I made the right choice."
>
> Husband, Couple 7: "I can't quite describe the feeling, it's something you understand but can't put into words. The first time holding the baby skin-to-skin, aside from feeling moved, I just thought about how tough it is for my wife, and she has my life in her hands."
>
> Wife, Couple 11: "He used to put work first, but now, whenever the baby is sick, he does everything to come back. I've always suspected it has something to do with kangaroo care. He changed a lot after that, now he seems more reliable in our emotional life than before."

Theme 2: role adaptation and redefinition

Some of our participants experienced profound shift in self-perception and interpersonal dynamics as they embraced the responsibilities and identities associated with parenthood through KMC, where they transformed from individual identities to a collective identity centred around caregiving, highlighting the renegotiation of roles within the relationship.

Sub-theme 1: remoulding of self-identity

Couples experienced a profound transition in personal identity into their roles as parents, which was facilitated by their personal engagement in KMC.

> Wife, Couple 4: "I always saw myself as a career woman, even thought about not having kids. Now, every time I hold the baby, especially skin-to-skin, it feels so real that I'm a mom, something I never imagined feeling."
>
> Wife, Couple 5: "After becoming a mom, I found myself more patient, more willing to compromise and sacrifice. I was the only daughter in my family, always the one being pampered. Especially with kangaroo care, feeling the baby against me, I realized I'm a mom now, and naturally, I changed."
>
> Husband, Couple 6: "Used to love playing video games, now much less. Being a dad is busy."
>
> Husband, Couple 9: "(The purpose of) earning money feels different now. Before it was for enjoying life, now it's for supporting the family. The biggest turning point wasn't the first time I saw my daughter in the nurse's arms, but when I held her during kangaroo care. The feeling of being a dad just struck me. It was overwhelming!"

Sub-theme 2: changes in communication patterns and content

According to some participants, KMC seemed to have played a role in reshaping their communicative dynamics as they navigated the intricacies of new parenthood by fostering a deeper connection with the newborn and serving as a bridge, enhancing dialogue and emotional exchange between partners.

> Wife, Couple 5: "We've been married for years, and we talked less and less, let alone romantic talks. Since starting kangaroo care, we've definitely talked more, mostly about the child, but our communication has increased a lot, and it's deeper, though we argue more too." (Laughed)
>
> Husband, Couple 7: "I wouldn't realize it until you asked me. It feels like starting kangaroo care broke the ice… The skin-to-skin contact made us more straightforward and intimate. Right, it made us intimate! My wife and I talk more than before, especially about the child."
>
> Wife, Couple 8: "I found something funny and told my girlfriends, that since my husband started (KMC), he talks even more than me, all about the baby, as if his daughter is being 'tortured.' Who would have thought he'd become like this. I wouldn't have believed it." (Laughed)
>
> Wife, Couple 11: "There's one detail I vividly remember, kangaroo care made my husband's voice softer, much gentler, as if he's always afraid of waking the baby."

Theme 3: conflicts and resolution

The complexities and emotional turbulence within couple relationships as a result of integrating KMC into their caregiving practices inevitably led to challenges when some couples adapted to new parenting roles, despite the numerous benefits of KMC. These experiences surfaced with underlying tensions, leading to emotional adversaries and relationship conflicts.

Sub-theme 1: suppression of genuine feelings

Some couples might suppress their true feelings to avoid conflicts during the sensitive period of newborn care.

> Husband, Couple 6: "I'm not really good with the whole skin-to-skin thing, but I didn't want to make her uncomfortable, so I just went along with it, trying to seem like I enjoyed it."
>
> Wife, Couple 6: "I know he has some reservations about KMC, but he never says it directly, just occasionally sighs or goes silent. I can feel it, but we never confront it."
>
> Husband, Couple 7: "I was actually quite nervous, not daring to hold the baby, especially with kangaroo care, always afraid of doing something wrong, but I couldn't tell her, didn't want her to overthink, to feel like I was questioning her."

Sub-theme 2: emotional fluctuations related to KMC

Engaging in KMC, similar to other physically and emotionally demanding care practices, seemed to trigger intense feelings of anxiety, stress and sometimes frustration in some participants. Nevertheless, some tended to adapt gradually as they became familiarised with the newly acquired skill.

> Wife, Couple 5: "During kangaroo care, whenever the baby cries, I get so anxious. I know he wants to help me, but he's also stressed, and we end up fighting over small things, regretting it afterwards."
>
> Husband, Couple 6: "Every time the baby is unwell, I get really tense, and so does my wife, our emotions can easily flare up. Kangaroo care makes me worried about the baby catching a cold, the more we do it, the more anxious I become, it feels like a vicious cycle."
>
> Husband, Couple 11: "Kangaroo care really tests your patience, especially at the beginning when you're not used to it. I was always worried about dropping the baby, and my wife would nag, which made me irritable, but I didn't dare talk back. She had just given birth. She had the final say. But once you get used to it, it's not so bad anymore."

The diverse experiences on the journey of KMC, as narrated by the participating couples, revealed a multifaceted impact on their relationships, marked by a deepening of emotional bonds, a redefinition of individual and shared identities, and a collaborative navigation of the challenges inherent in early parenting, suggesting a transformative potential of KMC beyond its documented clinical benefits.

DISCUSSION

The findings of our study offer a compelling insight into the nuanced interplay between KMC and its multifaceted impact on couple relationships. The overarching impression is that KMC, while primarily a neonatal care practice, extends its influence far beyond the infant-caregiver dyad. It weaves into the intricate fabric of couple dynamics and relationship structures.

It is evident that KMC may serve as a powerful catalyst for enhancing emotional intimacy and strengthening relationships between partners, as reflected in Theme 1 where the shared experience of KMC facilitates a unique bonding process both with the newborn and between the partners. This profound impact on couple relationships may be attributed to several mechanisms.

First, the physical closeness and skin-to-skin contact inherent in KMC could stimulate the release of oxytocin, which enhances feelings of bonding and trust.[27 28] Additionally, the shared commitment to the well-being of the newborn might create a shared purpose that strengthens the couple's bond, as reported in marital and other relations.[29] Another notable factor was the mutual vulnerability and empathy experienced during KMC sessions,

which could facilitate deeper emotional communication and understanding between partners.[30 31]

Our findings align with existing literature, which suggests that joint parenting practices can positively influence couple intimacy and relationship satisfaction.[32 33] Engaging in cooperative caregiving activities may reduce stress, mitigate postpartum depression risks and enhance overall relationship quality.[34]

According to our participants, they experienced transformations in self-identifies and communication patterns as they adapted to their new roles as parents, some mentioning KMC as a pivotal medium (Theme 2). The profound shifts in self-perception and interpersonal dynamics suggest that KMC may act as a catalyst for personal growth and redefinition within the relationship.

The transition to parenthood, accentuated by the practice of KMC, involves a complex interplay of psychological, emotional and social factors. The intimate nature of KMC, characterised by prolonged skin-to-skin contact, may foster a deep sense of parental identity and responsibility. This heightened sense of purpose can lead to a reevaluation of personal and shared values, priorities and roles within the family unit.[35 36] Additionally, the shared commitment and collaborative nature of KMC can facilitate a more equitable distribution of caregiving responsibilities, promoting a more balanced and harmonious partnership.

These observations resonate with existing research that suggests the transition to parenthood is a pivotal period of identity transformation and role renegotiation for couples.[37–39] Previous studies have emphasised the importance of shared caregiving activities in facilitating parental role attainment and satisfaction.[40 41]

For couples, recognising the potential of KMC to influence personal and relational growth can encourage a more mindful and cooperative approach to navigating the challenges of new parenthood. Healthcare professionals should provide support and guidance to couples on the relational benefits of shared caregiving practices such as KMC by highlighting its role in facilitating a smoother transition to parenthood.

Theme 3, in particular, sheds light on the complexities and emotional challenges within couple relationships when they integrate KMC into their caregiving practices. The dual nature of KMC as both a bonding experience and a potential source of stress and conflict emphasises the importance of communication and mutual support in overcoming these hurdles. The challenges and conflicts, though not unique to KMC, may arise from several factors associated with the intensive nature of KMC and the adjustment to new parenting roles. The physical and emotional demands of continuous skin-to-skin contact, coupled with the stressors of neonatal care, can exacerbate underlying tensions or create new ones. Additionally, the vulnerability associated with caregiving and the pressure to adhere to ideal parenting standards can lead to feelings of inadequacy or resentment, further straining the relationship.[42 43]

Notably, the emotional challenges observed in our participating couples are not unique to KMC. The underlying causes can extend beyond the immediate circumstances of neonatal care, rooted in deeper aspects of individual personalities, early-life experiences and the pre-existing power dynamics within marital relationships, which can significantly influence how couples perceive, engage with and respond to the stresses and demands of KMC and shape their ability to navigate conflicts and provide mutual support.[44–47]

Personality traits, such as resilience, flexibility and communication styles, play a critical role in determining how individuals cope with stress and change, directly impacting the dynamics of conflict resolution within the relationship. Similarly, early-life experiences, including attachment styles and previous exposure to caregiving roles, can influence expectations and behaviours around parenting and partnership, potentially clashing or converging in the high-pressure setting of neonatal care.

Moreover, the pre-existing power structures and roles within a relationship can be both challenged and reinforced by the introduction of KMC. The equitable nature of shared caregiving inherent in KMC may disrupt their previous power dynamics, necessitating a renegotiation of roles that can either alleviate or exacerbate existing tensions.

Our findings are consistent with existing literature, where the realistic transition to parenthood, particularly under the demanding circumstances of neonatal care, can be a period of heightened stress and potential conflict for couples.[48–50] Other researchers have reported the strain that caregiving responsibilities can place on couple dynamics, potentially leading to decreased relationship satisfaction.[51 52] Additionally, our findings align with the positive outcomes observed in FICare studies by Hei *et al*, such as reduced maternal stress and improved infant health indicators.[53 54]

Understanding the multifaceted influences is crucial for both couples and clinicians. Our findings indicate that integrating KMC into neonatal care practices can significantly enhance the emotional and relational dynamics between partners. Clinicians should consider to implement structured support systems within NICUs to encourage and facilitate both parents' participation. This can include providing joint training sessions on effective KMC techniques, fostering open communication channels between partners and offering resources such as counselling services. Additionally, according to our findings, healthcare providers can strengthen family bonds, improve parental satisfaction and ultimately contribute to better outcomes for the infant by adopting a more holistic approach to address the relational well-being.

Limitation

One notable limitation of this study is the socio-economic composition of the participant pool, which primarily consisted of affluent couples. This demographic skew may limit the ability of our findings to reflect the couple

dynamics and experiences of couples from lower socioeconomic backgrounds.

CONCLUSIONS

KMC may have effects on couple relationships beyond its immediate benefits for the infant. It may potentially influence the emotional and relational dynamics between partners. Couples' experiences with KMC practices are multifaceted and complex. Through the intimate act of KMC, couples may experience deepening of emotional bonds, redefinition of roles and identities, and encounter both challenges and opportunities for conflict resolution. Adopting a more holistic approach to neonatal care including attention to the couple's relationship engaging in KMC is suggestible.

Contributors YH, PC, XD, WY: study conceptualisation and design. YH, PC, CH, JD, HG, XD, WY: data collection and analyses. YH, PC, XD: result interpretation. YH and PC: drafting of initial manuscript. CH, JD, HG, XD, WY: critical review. All authors reviewed and approved the final version for submission and agree to be accountable for all aspects of the work. YH is responsible for the overall content as the guarantor.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication To protect participant confidentiality and privacy, several rigorous measures were implemented. All interview recordings and transcripts were anonymizsed, with participants assigned unique identifiers to eliminate any personal identifying information. Access to these materials was strictly limited to the research team. All electronic data were stored on two secure, password-protected flash drives, with one as backup. Physical documents, such as consent forms and field notes, were kept in locked filing cabinets accessible only to the PI.

Ethics approval This study involves human participants and the study protocol was ethically approved by the Ethics Committee of the Affiliated Children's Hospital of Soochow University (reference 24021). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. The recordings are prohibited from sharing due to privacy protection considerations. The transcripts can be provided on reasonable request to corresponding author.

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