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Emotional Cycle of Separation in Rotational Workforces: A Multi-Level Conceptual Framework Integrating Duration, Predictability and Communication Access

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Abstract

Background: Rotational workforces across military, maritime, petroleum and healthcare sectors experience recurring separations following emotional patterns extensively documented in military literature but theoretically fragmented for civilian workers. Existing occupational health research addresses rotational work primarily through safety and fatigue lenses, while family psychology focuses on daily work-family balance or permanent migration, leaving the unique dynamics of recurring bounded separations theoretically underserved.

Objective: This paper develops an integrated conceptual framework extending emotional separation cycles from military to civilian rotational work contexts, incorporating rotation duration, schedule predictability and communication access as critical moderating variables affecting individual, family and organizational outcomes.

Methods: We conducted a narrative synthesis of peer-reviewed literature (2000-2024) retrieved from PubMed, Scopus, PsycINFO and Web of Science. We reviewed 247 abstracts, extracted full texts for 89 articles and synthesized themes across military psychology, occupational health, maritime studies and family science domains.

Results: We propose a six-stage emotional cycle— (1) anticipation, (2) departure, (3) adjustment/disorganization, (4) recovery/stabilization, (5) anticipation of return, (6) reunion/reintegration—moderated by rotation characteristics. Short predictable rotations (days to 2 weeks) compress cycles, favoring ritualized coping but limiting reconnection depth. Long rotations (3-12 months) enable independent functioning but risk emotional distancing and reintegration friction. Unpredictable schedules disrupt cycle coherence, preventing anticipatory coping and elevating anxiety. The framework generates six testable propositions linking these moderators to outcomes across individual, family and organizational levels.

Conclusions: This framework unifies fragmented sector-specific knowledge under a common theoretical structure, positioning recurring bounded separations as a distinct family form requiring unique coping repertoires. It offers testable propositions for longitudinal empirical research and actionable multi-level interventions.

Keywords: Transnational families, Nigerian diaspora, Parental migration, Left-behind children, Indefinite separation, Remittances, Emotional cycles, Family reunification

Introduction

The global phenomenon of rotational labor

Rotational work arrangements—wherein employees alternate between extended work periods at remote locations and home leave—constitute a significant global employment model. Workers in offshore petroleum installations typically follow 14-day, 21-day, or 28-day rotations separated by equivalent home leave periods [1]. Seafarers may spend 4-9 months aboard vessels before extended shore leave [2]. Military personnel deploy for 6-12 months to operational theaters [3]. Fly-In-Fly-Out (FIFO) mining operations involve weekly to monthly rotation cycles [4].

These arrangements create recurring work-family separations with unique psychosocial characteristics. Unlike daily commuting, rotational separations involve complete physical absence, often in remote or hazardous environments. Unlike permanent relocations, they involve repeated transitions without stable integration into either location [5].

Theoretical fragmentation across disciplines

Military deployment research has extensively documented an "emotional cycle of deployment" characterizing predictable psychological and relational patterns through pre-deployment, deployment and post-deployment phases [3]. This literature identifies family resilience factors, reintegration challenges and mental health trajectories across deployment cycles [6].

However, civilian rotational workforces remain comparatively undertheorized despite sharing fundamental separation dynamics. Occupational health literature addresses rotational work primarily through fatigue management and safety performance frameworks [7]. Work-family research focuses predominantly on daily boundary management [8]. Maritime psychology examines seafarer isolation but rarely integrates family system perspectives [2].

This disciplinary fragmentation means that offshore oil workers, seafarers, FIFO miners and rotational healthcare personnel are studied through disparate theoretical lenses, preventing knowledge integration and limiting cross-sector intervention development.

Missing theoretical integration

Several established theoretical frameworks address work-family dynamics but do not fully capture rotational separation experiences. Conservation of Resources (COR) Theory explains resource depletion during separation periods but does not account for cyclical emotional patterns or reunion dynamics [9]. Border Theory examines boundary management but rotational work involves complete spatial separation rather than boundary permeability [10]. Ambiguous Loss Theory addresses phenomenology of separation but does not specify predictable stages or organizational intervention points [11].

The emotional cycle framework proposed here complements these perspectives by specifying temporal stage sequences, identifying rotation-specific moderators (duration, predictability, communication) and integrating individual, family and organizational levels in ways existing theories do not.

Research aims and contributions

This conceptual paper addresses these gaps through five objectives:

1. Extend the emotional cycle framework from military deployment literature to diverse civilian rotational workforces
2. Identify and theorize three critical moderating variables—rotation duration, schedule predictability and communication access
3. Develop a multi-level model specifying how these moderators influence individual, family and organizational outcomes
4. Position rotational separations as a distinct family form requiring unique coping repertoires
5. Generate testable propositions suitable for empirical validation across diverse occupational sectors and cultural contexts.

Methods: Narrative Synthesis Approach

Rationale for narrative synthesis

We employed narrative synthesis methodology appropriate for theory-building when existing literature is heterogeneous in methods and populations [12]. This approach was necessary because rotational workforce literature spans disconnected disciplines using incompatible outcome measures, employs diverse designs that cannot be meta-analyzed and involves substantially different populations.

Literature search and selection

We searched PubMed, Scopus, PsycINFO and Web of Science (January 2000-December 2024) using Boolean combinations of population terms ("rotational work*" OR "FIFO" OR "offshore work*" OR "maritime" OR "seafar*" OR "deployment") and outcome terms ("separation" OR "emotional cycle" OR "family stress" OR "psychological well-being" OR "mental health" OR "coping").

Database searches yielded 1,847 records. After deduplication, we screened 1,263 unique titles and abstracts. We reviewed 247 abstracts meeting initial relevance criteria, retrieved 89 full-text articles and included 67 articles contributing substantive content to the synthesis.

Data extraction and synthesis

We extracted population characteristics, theoretical frameworks, emotional/relational processes, moderating variables, outcomes and coping strategies. Through iterative thematic analysis, we: (1) mapped common temporal stages, (2) identified moderating variables, (3) categorized outcomes into individual, family and organizational levels and (4) recognized cross-sector patterns. This process generated the six-stage emotional cycle model and three primary moderating variables.

Limitations

As a narrative synthesis, this work involves interpretive judgment. Literature availability varied substantially by region and sector. Military deployment research dominated the evidence base, with robust maritime and offshore petroleum literature primarily from Western contexts. Evidence from Sub-Saharan African petroleum, maritime and healthcare sectors was sparse. Therefore, while we identify these sectors as important potential applications, empirical validation in these contexts remains a critical research need.

Results: The Emotional Cycle Framework

Six-stage model overview

Based on our synthesis, we propose a six-stage emotional cycle applicable across rotational work contexts. These stages represent modal patterns; individual experiences vary based on personal resilience, relationship quality and the moderating variables discussed in Section 4.

Stage 1: Pre-separation/anticipation of loss

This stage begins when upcoming separation becomes salient and continues until physical departure. Workers and family members experience anticipatory anxiety about workplace dangers, family management burdens and relationship strain [3]. Some individuals unconsciously distance themselves emotionally, while others report

increased closeness. Children show age-dependent reactions including clinginess, behavioral acting out, or emotional withdrawal.

Stage 2: Departure

The actual leave-taking event involves acute sadness and loss for both workers and families. Paradoxically, some report relief that waiting has ended. Workers often enter "work mode" immediately, compartmentalizing family emotions [5]. At-home partners experience acute loneliness; children may exhibit separation distress or delayed reactions.

Stage 3: Adjustment/disorganization

During the first days to weeks after departure, at-home partners assume full household and parenting responsibilities, often experiencing overwhelming stress. Both workers and at-home partners report sleep difficulties, appetite changes and minor illness. Children's academic performance may decline and behavioral problems emerge. Communication challenges amplify stress, with text messages easily misinterpreted and video calls highlighting what's being missed.

Stage 4: Recovery/Stabilization

After initial disorganization passes, families develop new rhythms and routines. At-home partners often report increased self-efficacy and competence. Workers become embedded in rotation communities, developing peer relationships that buffer isolation [7]. Families establish communication rituals—scheduled video calls, bedtime stories, countdown calendars—providing connection points. While loneliness persists, acute distress typically subsides.

Stage 5: Anticipation of return

As return dates approach, family members and workers report mounting excitement alongside reunion anxiety [3]. Families often develop idealized visions of reunion, setting the stage for disappointment. At-home partners prepare homes; children rehearse what they'll say. Workers describe difficulty concentrating on work tasks as departure approaches.

Stage 6: Reunion/Reintegration

Initial reunion involves joy, physical affection and celebration—a "honeymoon phase". However, conflicts typically emerge as couples renegotiate parenting approaches, household roles and intimacy patterns. Children may initially ignore returning parents or test boundaries. Both partners must renegotiate identities: the at-home partner has grown in independence; the worker has had intense separate experiences.

A critical challenge occurs when home leave is cut short—"rotation truncation"—preventing completion of reintegration. Families enter the next separation cycle carrying unresolved tension from incomplete reunion [5].

Cyclical nature and cumulative effects

Unlike single deployments, rotational work involves repeated cycles creating both adaptive and maladaptive patterns. Families may develop expertise in transitions, recognizing emotional stages and deploying effective coping strategies more efficiently (Lester et al., 2010). However, cumulative emotional exhaustion may accumulate if recovery periods are insufficient, or gradual emotional distancing may occur as protective detachment becomes habitual.

Moderating Variables Shaping Cycle Dynamics

Three structural features systematically influence how the emotional cycle unfolds: rotation duration, schedule predictability and communication access.

Moderator 1: Rotation duration

Short Rotations (Days to 2 Weeks)

All six stages occur in rapid succession. Families develop highly routinized transition practices but have insufficient time for deep independent functioning [4]. Frequent emotional oscillation creates "whiplash"—constant goodbyes and reunions. Reunion periods may be too brief for full role renegotiation, leading to accumulated unresolved issues [7].

Positive outcomes: Continuous connection prevents deep emotional distancing; children maintain consistent contact with rotational parent.

Negative outcomes: Perpetual transition stress; ritualization may become mechanical; cumulative exhaustion from constant oscillation [4].

Medium rotations (2 weeks to 3 months)

Adequate time exists for meaningful adjustment, stabilization and reintegration without excessive elongation [1]. At-home partners develop genuine autonomy. Home leave allows deep reconnection and relationship maintenance. Many families and organizations find medium rotations offer optimal balance [7].

Long rotations (3-12 Months)

At-home partners develop fully independent lives—new social networks, autonomous decision-making, identity beyond partnership. Workers and at-home partners develop parallel lives with minimal overlap. Children adapt to single-parent households as "normal." Emotional distancing risk increases, sometimes leading to infidelity or relationship dissolution. After months of separate functioning, reintegration becomes genuinely difficult.

Proposition 1: Cycle compression in short rotations (< 2 weeks) increases family reliance on ritualized coping strategies and reduces deep emotional reconnection during home periods, while cycle elongation in long rotations (> 3 months) enhances independent functioning of the at-home partner but elevates emotional distancing and reintegration conflict, compared to medium rotations (2 weeks to 3 months) which optimize the balance between adaptation and connection.

Moderator 2: Schedule predictability

Fixed/predictable schedules

Workers know months in advance when rotations begin and end [1]. Families can mentally prepare for transitions, plan significant events around rotations and engage in proactive stress management. Predictable patterns enable stable routine development. When organizations honor schedules, workers and families trust the system.

Variable/unpredictable schedules

Rotation timing changes frequently due to operational demands [4]. Families cannot prepare for transitions when timing is uncertain. Chronic unpredictability elevates anxiety beyond the stress of separation itself. Families cannot commit to future plans, leading to social isolation and missed opportunities [5].

Rotation truncation—premature termination of home leave—represents the most damaging form of unpredictability, preventing completion of reintegration and leaving unresolved conflicts. Repeated truncation leads to chronic marital conflict, children's behavioral problems, at-home partner resentment and worker guilt.

Proposition 2: Unpredictable rotation schedules disrupt emotional cycle coherence by preventing anticipatory coping and stable routine formation, thereby elevating chronic anxiety, family conflict and sense of loss of control compared to fixed schedules, with rotation truncation representing the most damaging form of unpredictability.

Moderator 3: Communication Access

Communication access has transformed dramatically across technological eras. The pre-digital era (pre-2000) involved postal mail and expensive phone calls (Wilding, 2006). The digital era (2000-present) enables email, video calling and messaging apps. The emerging AI-mediated era promises virtual reality and AI companions.

High communication access

Reliable internet and multiple platforms allow real-time sharing of daily events. Workers can participate in children's bedtime routines via video or discuss parenting decisions synchronously. Frequent contact reduces feelings of isolation.

However, potential negative effects include over-communication creating conflict through misinterpreted text messages, hindered independence from constant digital presence and exacerbated awareness of missing out when video calls show what workers are missing.

Restricted communication access

Limited internet, expensive connections, or organizational policies limiting communication heighten isolation [2]. Long gaps between communication breed misunderstanding. Families must function autonomously because real-time consultation is impossible, forcing self-reliance development. Families rely on symbolic coping strategies—letters, photographs, memory objects—and develop stronger community support networks.

Optimal communication patterns

Research suggests neither constant contact nor complete disconnection optimizes outcomes (Carter et al., 2016). Adaptive patterns include scheduled rituals, asynchronous + synchronous mix, intentional disconnection periods and prioritizing quality over quantity.

Proposition 3: Regular, reliable communication access buffers loneliness and maintains intimacy through information sharing and virtual co-presence, while severely restricted communication elevates emotional detachment risk and necessitates compensatory coping through symbolic connection objects and community support networks, but excessive communication may paradoxically increase conflict through misinterpreted digital messages and exacerbated awareness of missed shared experiences.

Moderator interactions

The three moderators interact to produce diverse separation experiences. Long unpredictable rotations represent the worst combination—extended absence without ability to anticipate return creates maximum uncertainty stress. The best-case scenario involves medium, predictable rotations with reliable but not excessive communication access [1].

Multi-Level Outcomes

The emotional cycle moderated by duration, predictability and communication produces outcomes across three nested levels: individual, family and organizational.

Individual-Level Outcomes

Rotational workers show elevated depression rates (15-30%) compared to non-rotational workers, with prevalence varying by sector. At-home partners show similar or higher rates. Workers in remote locations report profound loneliness, especially during early rotation phases and when communication is restricted [2].

Alternating between work and family contexts creates identity management challenges. Workers describe feeling "not fully present" in either role. Some develop fragmented identities; others integrate roles successfully. Workers in hazardous environments may develop PTSD, complicating reintegration.

Not all outcomes are negative. Some individuals report enhanced self-efficacy, resilience, independence and life satisfaction from successfully managing rotational challenges [4].

Proposition 4: Individual psychological adjustment deteriorates most severely during adjustment/disorganization and reintegration stages, with cumulative emotional exhaustion accumulating across rotation cycles when recovery periods are truncated or insufficient, but successful cycle navigation enhances resilience and self-efficacy over time.

Family-level outcomes

Marital satisfaction shows U-shaped patterns across deployments—declining during separation, recovering during reunion. However, repeated cycles without full recovery create downward trends. Long, unpredictable rotations with poor communication show highest divorce/separation rates.

Conflict frequency peaks during reintegration as couples renegotiate roles. Unresolved conflicts from previous cycles compound current issues. Both emotional and physical intimacy decline during separation, requiring recovery time post-reunion.

Meta-analyses of military children show elevated internalizing (anxiety, depression, withdrawal) and externalizing (aggression, defiance) symptoms during parental deployment. Effects are larger for longer deployments and younger children. Repeated separations, especially during early childhood, may disrupt secure attachment formation, though stable at-home parents can buffer these effects.

Successful families employ transition rituals, communication schedules, flexible role structures, community connections, realistic expectations and professional support when needed.

Proposition 5: Families that develop ritualized transition practices, maintain flexible role structures allowing both independence and interdependence, establish moderate communication patterns and hold realistic reunion expectations demonstrate greater resilience across rotation cycles than those expecting rapid return to "normalcy" or maintaining rigid role expectations.

Organizational-level outcomes

Rotational work shows high turnover rates, with family stress cited as primary reason for resignation [1]. Industries with better family support programs demonstrate superior retention. Fatigue, distraction from family stress and adjustment period disorientation contribute to elevated injury and accident rates, particularly during early rotation days and near rotation end [7].

When organizations honor schedules, invest in communication infrastructure and support families, worker morale improves [4]. Conversely, repeated schedule changes, rotation truncations and lack of family support breed resentment and cynicism [5].

Evidence-based organizational practices include predictable rotation schedules, adequate staffing preventing rotation truncation, high-speed internet at work locations, pre-rotation family preparation seminars, family liaison officers, decompression programs, mental health screening and culturally adapted support [1].

Proposition 6: Organizations that invest in schedule predictability, adequate staffing preventing rotation truncation, communication infrastructure, family support programs and culturally adapted interventions demonstrate lower turnover, higher safety performance and improved worker well-being compared to those prioritizing short-term operational flexibility over workforce stability.

Potential Applications to Under-Studied Contexts

While this framework synthesizes primarily Western-origin research, it has potential applicability to under-studied sectors and regions, particularly Sub-Saharan African petroleum, maritime and healthcare sectors. However, empirical validation in these contexts is critically needed.

Unique contextual features may include extended family structures that buffer nuclear family isolation, expatriate workers experiencing dual separation from home countries and host communities, infrastructure limitations creating asymmetric communication access, economic pressures creating different cost-benefit calculations and traditional gender roles shaping role renegotiation dynamics differently than Western contexts.

Applying this framework cross-culturally requires attention to different family structures, gender role expectations, cultural meanings of independence versus interdependence, communication preferences, collectivist versus individualist orientations, economic contexts and infrastructure availability. The framework should be viewed as a starting point for culturally specific empirical work rather than a universally validated model.

Discussion

Theoretical contributions

This framework advances occupational health and family psychology theory by: (1) unifying fragmented knowledge across military, maritime, petroleum, healthcare and logistics sectors; (2) positioning rotational separation as a distinct family form differentiated from daily commuting, permanent migration, occasional business travel and single deployments; (3) specifying moderating mechanisms (duration, predictability, communication) enabling targeted hypothesis testing; (4) integrating multi-level outcomes showing how personal experiences aggregate to workplace consequences; and (5) complementing existing theories by adding temporal stage specification and practical intervention guidance.

Methodological implications

Testing this framework requires longitudinal designs tracking families through multiple complete rotations (Parkes, 2012). Experience sampling methods can capture stage transitions more precisely than retrospective recall. Dyadic and family data are essential—both workers and at-home partners must be assessed (Dimiceli et al., 2010). Natural experiments (organizational schedule restructuring, communication infrastructure upgrades, family program implementations) offer quasi-experimental opportunities. Cross-sector comparisons are needed to test generalizability [1].

Practical implications

For individuals, understanding the emotional cycle normalizes experiences, enabling anticipatory coping strategy development, realistic reunion expectations and recognition of when professional help is needed.

For families, knowledge empowers development of transition rituals, flexible role structures, sustainable communication patterns, support networks and proactive therapy seeking.

For organizations, the framework identifies multiple intervention points at policy level (optimize rotation duration, maintain schedule predictability, prevent rotation truncation), infrastructure level (invest in communication technology), program level (pre-rotation workshops, family liaison officers, transition programs, mental health screening) and cultural level (create organizational cultures valuing family well-being) [1].

For policymakers, regulation can improve rotational workforce well-being through mandatory minimum home leave periods, prohibitions on systematic rotation truncation, requirements for family support programs, telecommunications infrastructure investment and occupational health surveillance [4].

Limitations and future research directions

The framework may oversimplify complex, heterogeneous experiences. Individual differences (personality, attachment style, prior trauma), cultural contexts and unique family circumstances create substantial variation that six-stage models cannot fully capture. The framework emphasizes heterosexual, married, two-parent families, reflecting the available research base. Single workers, LGBTQ+ families, multi-generational households and other family structures require specific empirical attention.

Future research priorities include: (1) longitudinal validation tracking families through 3-5 complete rotation cycles; (2) moderator interaction testing through factorial designs; (3) cultural generalizability validation in non-Western contexts; (4) intervention trials testing family preparation programs and communication interventions; (5) child development focus examining age-stratified effects; (6) positive adaptation studies identifying protective factors; (7) occupation-specific pattern comparisons; (8) communication technology effect experiments; (9) economic cost-benefit analyses; and (10) AI-mediated communication research examining authentic versus simulated connection [14-18].

Conclusions

Rotational workforces across diverse sectors experience recurring work-family separations following predictable emotional patterns. This conceptual framework extends military deployment cycle theory to civilian occupational contexts, identifying rotation duration, schedule predictability and communication access as critical moderators shaping cycle dynamics and multi-level outcomes.

The framework positions recurring bounded separations as a distinct family form requiring unique coping repertoires. Six testable propositions link moderators to outcomes, providing empirical research direction. Actionable implications span individual coping strategy development, family resilience building and organizational intervention design.

While the framework synthesizes primarily Western research, it identifies Sub-Saharan African petroleum, maritime and healthcare sectors as critical priorities for empirical validation. As rotational work arrangements expand globally, evidence-based understanding of their family and individual consequences grows increasingly urgent. This framework provides theoretical foundation, empirical guidance and practical direction for advancing rotational workforce well-being across diverse sectors, regions and cultural contexts.

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