Artículo

Adaptation to High-Risk Childbearing: Extension of a Preliminary Situation-Specific Theory with Focus on Psychological State and Functional Status*

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Theme: Epistemology, confrontation, and adaptation of health

Contribution to the discipline: This study was guided by the Roy Adaptation Model. The findings represent the extension of a preliminary situation-specific theory of adaptation to high-risk childbearing.

Abstract

Introduction: Little is known about expectant and new parents' psychological experiences of high-risk childbearing. **Objective:** The paper is a report analyses of data from a Roy Adaptation Model-guided pilot study of women's and their male partners' adaptation to high-risk childbearing and thereby extends a preliminary situation-specific theory of adaptation to high-risk childbearing. **Materials and methods:** A previous paper was a comprehensive report of the results of the pilot study except for psychological state, measured by the Multiple Affect Adjective Checklist-Revised. The additional data analyses reported in this paper are for effect sizes of correlations between the Multiple Affect Adjective Checklist-Revised subscales and maternal and paternal functional status inventories. **Results:** Correlations of small ($r = 0.1$), medium ($r = 0.3$), and large ($r = 0.5$) effect sizes were found for the measures of psychological state and functional status for both women and their male partners except for psychological state positive affect and maternal functional status during the postpartum, and psychological state anxiety and paternal functional status during the postpartum. **Conclusions:** Overall, no substantial differences were found in psychological state and functional status for women and their male partners during pregnancy and the postpartum. The findings of this secondary data analysis constitute an extension of the preliminary situation-specific theory reported in a previously published paper.

Adaptación a la maternidad de alto riesgo: ampliación de una teoría preliminar de situación específica con enfoque en la condición psicológica y el estado funcional*

Resumen

Introducción: poco se conoce sobre las experiencias psicológicas de los futuros y nuevos padres en la maternidad de alto riesgo. **Objetivo**: dar a conocer unos análisis de datos adicionales a partir de un estudio piloto guiado por el modelo de adaptación de Roy sobre la adaptación de las mujeres y sus parejas masculinas a la maternidad de alto riesgo y, por lo tanto, ampliar una teoría preliminar de situación específica de la adaptación a la maternidad de alto riesgo. **Materiales y métodos:** el artículo previo fue un informe completo de los resultados del estudio piloto, excepto por la condición psicológica, que se midió mediante la lista de verificación de adjetivos de afecto múltiple revisada. Los análisis de datos adicionales suministrados en este documento corresponden a los tamaños del efecto de las correlaciones entre las subescalas de la lista de verificación de adjetivos de afecto múltiple revisadas y los inventarios de estado funcional materno y paterno. **Resultados:** se encontraron correlaciones de tamaños de efecto pequeños ($r = 0,1$), medianos ($r = 0,3$) y grandes ($r = 0,5$) para las medidas de condición psicológica y estado funcional tanto para las mujeres como para sus parejas masculinas, excepto para el afecto positivo de la condición psicológica y el estado funcional materno durante el posparto y la condición psicológica de ansiedad y el estado funcional paterno durante el posparto. **Conclusiones:** en general, no se encontraron diferencias sustanciales en la condición psicológica y el estado funcional de las mujeres y sus parejas masculinas durante el embarazo y el posparto. Los hallazgos de este análisis de datos secundarios constituyen una extensión de la teoría preliminar de situación específica presentada en un artículo publicado con anterioridad.

Palabras clave (Fuente: DeCS)
Teoría de enfermería; embarazo; enfermería; embarazo de alto riesgo; estado funcional.

Adaptação à maternidade de alto risco: ampliação de uma teoria preliminar de situação específica com foco na condição psicológica e no estado funcional*

Resumo

Introdução: pouco se sabe sobre as experiências psicológicas dos futuros e novos pais na maternidade de alto risco. Objetivo: apresentar as análises de dados adicionais a partir de um estudo-piloto orientado pelo modelo de adaptação de Roy sobre a adaptação das mulheres e seus companheiros à maternidade de alto risco e, portanto, ampliar uma teoria preliminar de situação específica da adaptação à maternidade de alto risco. **Materiais e método:** tendo em vista que se trata de uma extensão de um artigo publicado anteriormente, o qual foi um relatório completo dos resultados do estudo-piloto, exceto pela condição psicológica, que foi medida mediante a checklist de adjetivos de afeto múltipla revisada, as análises de dados adicionais fornecidas neste documento correspondem aos tamanhos do efeito das correlações entre as subescalas da checklist de adjetivos de afeto múltipla revisada e os inventários de estado funcional materno e paterno. **Resultados:** foram constatadas correlações de tamanhos de efeito pequenos r = 0,1), médios (r = 0,3) e grandes (r = 0,5) para as medidas de condição psicológica e estado funcional tanto para as mulheres quanto para seus companheiros, exceto para o afeto positivo da condição psicológica e o estado funcional materno durante o pós-parto, e a condição psicológica de ansiedade e o estado funcional paterno durante o pós-parto. **Conclusões:** em geral, não foram encontradas diferenças substanciais na condição psicológica e no estado funcional das mulheres e seus companheiros durante a gestação e o pós-parto.

Palavras-chave (Fonte: DeCS)
Teoria de Enfermagem; gravidez; enfermagem; gravidez de alto risco; status funcional.

Introduction

The purpose of this paper is to report an extension of a Roy Adaptation Model (RAM) (1)-guided preliminary situation-specific theory of correlates (physical and psychological symptoms, physical energy, relationship quality) of maternal and paternal functional status during high-risk childbearing (2). The content of this paper adds correlations between already collected data for psychological state and maternal and paternal functional status, as measured by maternal and paternal functional status inventories, to the theory.

The RAM depicts people as adaptive systems that adapt to focal and contextual environmental stimuli (1). Adaptation occurs in physiological, self-concept, role function, and interdependence adaptive modes, which are thought to be interrelated. This paper presents the results of data analyses for the relation between the self-concept mode, represented by the psychological state as measured by three Multiple Affect Adjective Checklist-Revised (MAACL-R) subscales (anxiety, depression, positive affect) (3), and the role function mode, represented by functional status during high-risk childbearing, as measured by maternal and paternal functional status inventories (4, 5, 6). The definitions for the relevant RAM concepts (self-concept mode, role function mode), the theory concepts (psychological state, functional status), and the empirical indicators used to measure the theoretical concepts are given in Table 1.

Table 1. Conceptual and Theoretical Concepts and Empirical Indicators

Roy Adaptation Model Concepts	Preliminary Theory Concepts	Empirical Indicators
Self-Concept Mode: Concerned with the conception of the physical and personal self	Psychological State: An individual's perceptions of affect/feelings, including multiple items for each of three dimensions—anxiety, depression, and positive affect	Multiple Affect Adjective Checklist-Revised (MAACL-R) subscales for Anxiety, Depression, and Positive Affect (3, 7)
Role Function Mode: Concerned with the performance of roles based on position within society	Functional Status: Continued performance of an individual's usual household, social and community, family, personal care, occupational, and educational activities during pregnancy and the postpartum, with the addition of assumption of childcare activities during the postpartum	Inventory of Functional Status-Antepartum Period (4) Inventory of Functional Status After Childbirth (5) Inventory of Functional Status-Fathers (6)

Source: Own elaboration.

Materials and Methods

Psychological state was not included in data analysis for the preliminary theory (2) due to the complexity of identifying and writing computer code for the MAACL-R subscales at that time (the early 2000s), as the subscale scores were available only by paper and pencil calculations. Considerable time and effort were involved in preparing MAACL-R subscale data for analysis, which are now available. The addition of psychological state, measured by the multiple items MAACL-R (3, 7), to the theory may provide a more comprehensive understanding of the influence of the parents' psychological experience during high-risk childbearing than did the three single-item psychological symptoms (feeling anxious, feeling depressed, feeling better than usual) measured by the Symptoms Checklist (8). Details of the pilot study sample, research methods, and results for the preliminary theory are available in Fawcett and Tulman's (2) paper. University and hospital institutional review boards approved the pilot study, and participants gave either oral or written informed consent.

Briefly, the sample included 103 individuals: 48 pregnant women who had been classified as high-risk and 34 of their male partners, 11 postpartum women who had had high-risk pregnancies, and 10 of their male partners at 4-6 weeks postpartum at the time of data collection. "The typical study participant was 31 years of age; White, non-Hispanic; had at least a high school education; and was employed outside the home or on maternity or paternity leave" (1, p410). High-risk status was self-reported when the participants were recruited from clinics in teaching hospitals in a New England state ($n = 34$ total participants; 20 pregnant women and 13 of their male partners; one woman and no male partners during the postpartum) and a Southeastern state ($n = 69$ total participants; 28 pregnant women and 21 of their male partners; ten women and ten of their male partners during the postpartum).

Results

The results for correlational analyses of the measures of psychological state and maternal and paternal functional status are given in Table 2. Complete data were available for all 48 pregnant women, although for only 32 of the 34 male partners and all 11 women and 10 male partners during the postpartum. Effect sizes (9) are reported rather than inferential statistical probabilities due to the small sample sizes. Note that r is the metric for the effect size for correlational analyses. A small effect size is $r = 0.1$, a medium effect size is $r = 0.3$, and a large effect size is $r = 0.5$ (9).

Table 2. Effect Sizes for Relations between Psychological State and Functional Status

Functional Status	Psychological State (MAACL-R Subscales)
Maternal Functional Status: Inventory of Functional Status-Antepartum Period (*n* = 48)	Anxiety: *r* = -.108* Depression: *r* = -.139* Positive Affect: *r* = .294*
Paternal Functional Status: Inventory of Functional Status—Fathers (Pregnancy) (*n* = 32)	Anxiety: *r* = .589*** Depression: *r* = .131* Positive Affect: *r* = -.229*
Maternal Functional Status: Inventory of Functional Status After Childbirth-Revised (*n* = 11)	Anxiety: *r* = -.241* Depression: *r* = -.454** **Positive Affect: r = -.007**
Paternal Functional Status: Inventory of Functional Status-Fathers (Postpartum) (*n* = 10)	**Anxiety: r = .008** Depression: *r* = -.196* Positive Affect: *r* = .269*

*Small effect sizes (*r* = .10) are considered relations of low magnitude. **Medium effect sizes (*r* = .30) are considered relations of moderate magnitude. ***Large effect sizes (*r* = .50) are considered relations of large magnitude (9). Effect sizes in **bold** font indicate no evidence of a relation.

Source: Own elaboration.

Based on the analysis of MACCL-R subscale scores with scores for inventories of maternal and paternal functional status (see Table 2), the preliminary theory can now be extended to assert these propositions:

During pregnancy, for women:

- There is a negative relation of low magnitude (small effect size) between psychological state anxiety and maternal functional status; so, the lower the psychological state anxiety, the higher the maternal functional status.

- There is a negative relation of low magnitude (small effect size) between psychological state depression and maternal functional status; so, the lower the psychological state depression, the higher the maternal functional status.

- There is a positive relation approaching moderate magnitude (small to medium effect size) between psychological state positive affect and maternal functional status; so, the higher the psychological state positive affect, the higher the maternal functional status.

During pregnancy, for male partners:

- There is a positive relation of high magnitude (large effect size) between psychological state anxiety and paternal functional status; so, the higher the psychological state anxiety, the higher the paternal functional status.

- There is a positive relation of low magnitude (small effect size) between psychological state depression and paternal functional status; so, the higher the psychological state depression, the higher the paternal functional status.

- There is a negative relation of low magnitude (small effect size) between psychological state positive affect and paternal functional status; so, the lower the psychological state positive affect, the higher the paternal functional status.

During the postpartum, for women:

- There is a negative relation of low magnitude (small effect size) between psychological state anxiety and maternal functional status; so, the lower the psychological state anxiety, the higher the maternal functional status.

- There is a negative relation of moderate magnitude (medium effect size) between psychological state depression and maternal functional status; so, the lower the psychological state depression, the higher the maternal functional status.

During the postpartum, for male partners:

- There is a negative relation of low magnitude (small effect size) between psychological state depression and paternal functional status; so, the lower the psychological state depression, the higher the paternal functional status.

- There is a positive relation of low magnitude (small effect size) between psychological state positive affect and paternal functional status; so, the higher the psychological state positive affect, the higher the paternal functional status.

The data indicate that the effect sizes for the relations between psychological state positive affect and maternal functional status during the postpartum, and psychological state anxiety and paternal functional status during the postpartum were too low to consider (see Table 2).

Discussion

The direction of the relations between psychological state anxiety, depression, and positive affect and paternal functional status during pregnancy are inconsistent with expectations. Expected would have been negative relations between psychological state anxiety and depression and paternal functional status; so, the higher the anxiety and depression, the lower the functional status. Similarly, expected would have been a positive relation between psychological state positive affect and paternal functional status; so, the higher the positive affect, the higher the paternal functional status. The reason for these unexpected results is elusive. Inasmuch as effect size tends to be stable regardless of sample

size, it is unclear whether obtaining a larger sample of male partners from the same population would yield different results.

As seen in Table 2, there is no substantial difference in effect sizes for MAACL-R measured psychological state and functional status for women and their male partners during pregnancy and the postpartum. Overall, there is a significant effect size for the positive relation between the male partner's psychological state anxiety and paternal functional status during pregnancy. Perhaps feelings of anxiety motivate the male partner to perform a high level of activities that comprise paternal functional status. Furthermore, there is a medium effect size for the positive relation between the women's psychological state depression and maternal functional status during the postpartum, for if a woman feels depressed, she probably will decrease the level of her performance of activities that comprise maternal functional status.

A review of related literature revealed a few relevant journal articles for this study.

Regarding women, Maloni and colleagues (10) found relatively high levels of depression among a sample of 89 primarily Caucasian (82 %) or African American (14.6 %) pregnant women who were hospitalized on bed rest. Their study did not include any measure of maternal functional status. McKee and colleagues (11) found a negative correlation between depression and maternal functional status during pregnancy for 114 Hispanic and Black women in the United States.

McVeigh (12) reported a negative correlation between anxiety and maternal functional status for 200 Australian women during the postpartum. Posmontier (13) found a negative correlation between postpartum depression and maternal functional status for 23 women in the United States. Barkin and colleagues (14, 15) also reported a negative correlation between postpartum depression and maternal functional status in their studies of women ($N = 189$; $N = 128$) in the United States.

Regarding male partners, Sevil and Özkan (16) found that the paternal functional status of 155 expectant and 93 fathers residing in Turkey was related to sociodemographic factors but did not study the relation between any measures of mood and paternal functional status. McVeigh, St. John, and Cameron (17) reported that of the 165 Australian fathers who participated in their study of the postpartum, most appeared to engage in a balancing act that required them to relinquish some personal activities to be an involved parent. They did not, however, report any correlates of paternal functional status in their descriptive study.

No studies of the relation between positive affect and maternal or paternal functional status during pregnancy or the postpartum were located.

Conclusion

The study findings support the utility of the Roy Adaptation Model (1) as a guide for research and indicate, as proposed in the model, that the modes of adaptation (self-concept mode and role function mode in this study) are interrelated. As the Fawcett and Tulman's (2) paper indicate, the theory is too preliminary to recommend application in nursing practice. More research with participants of diverse cultures is needed to determine whether the effect sizes are stable across diverse populations and which relations contribute to an empirically adequate situation-specific theory.

Disclaimer: The views expressed in this article are our own and not an official position of the institutions or funder.

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