

Résumé

Le milieu de vie des mères adolescentes métis, autochtones et caucasiennes : une étude de sa qualité et des influences présentes

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Cette étude exploratoire longitudinale a comparé les caractéristiques psychosociales et circonstancielles, ainsi que les caractéristiques du milieu de vie, quatre semaines, ainsi que 12 à 18 mois après l'accouchement, auprès d'un échantillonnage de commodité composé de 71 mères adolescentes métis, autochtones et caucasiennes. Les groupes combinés de mères métis / autochtones ont révélé, quatre semaines après la naissance, des scores significativement plus importants, comparativement aux mères caucasiennes, en ce qui a trait au rapport émotionnel lors des soins prodigués à l'enfant. Les mères caucasiennes ont récolté des scores beaucoup plus élevés quant à la qualité du milieu de vie. Un modèle raffiné de régression multiple a expliqué 49 % de la variance relevée. Ce modèle a tenu compte du rapport émotionnel lors des soins prodigués à l'enfant, du niveau de scolarité de la grand-mère maternelle de l'enfant, de l'appartenance ethnique et du soutien social concret, les deux premiers facteurs exerçant une influence importante.

Mots clés : mères adolescentes, soins à l'enfant, appartenance ethnique et mère adolescente, compétence perçue et mise en pratique en rapport aux soins à l'enfant

The Home Environment of Métis, First Nations, and Caucasian Adolescent Mothers: An Examination of Quality and Influences

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This longitudinal exploratory study compared maternal psychosocial, situational, and home-environment characteristics at 4 weeks and at 12–18 months postnatal for a convenience sample of 71 Métis, First Nations, and Caucasian adolescent mothers. The combined group of Métis/First Nations mothers had significantly higher infant-care emotionality scores than the Caucasian mothers at 4 weeks. The Caucasian mothers scored considerably higher on quality of the home environment; a refined multiple regression model containing infant-care emotionality, education level of the infant's maternal grandmother, ethnicity, and enacted social support explained 49% of the variance, with significant influences being infant-care emotionality and grandmother's education level.

Key words: adolescent mothers, infant care, ethnicity and adolescent mother, perceived and performed infant care competence

The high number of infants born to Canadian adolescent mothers and the negative consequences of this parenting situation for the child underscore the need to better understand influences on adolescent mothering. The promotion of infant mental, social, cognitive, and physical health requires adequate care and cognitive stimulation (Gaffney, Kodadek, Meuse, & Jones, 2001). Infants parented by adolescent mothers are at greater risk for negative parenting, health, and development outcomes than infants with mothers over 19 years of age (Dormire, Strauss, & Clarke, 1989; Garcia Coll, Vohr, Hoffman & Oh, 1986; McAnarney, Lawrence, Ricciuti, Polley, & Szilagyi, 1986; Panzarine, Slater, & Sharps, 1995; Ruch-Ross, Jones & Musick, 1992; Von Windeguth & Urbano, 1989).

In 1994 alone, 24,700 infants were born to mothers between 15 and 19 years of age in Canada (Wadhwa & Millar, 1997). According to 1991 census data, the fertility rate for girls under 20 years of age was 20.3 per 1,000, ranging from a low of 16.5 for Quebec to a high of 100.9 for the Northwest Territories, with Manitoba having the second-highest rate at 40.9 (Statistics Canada, 1998).

The adverse social effects associated with adolescent parenting have been shown to endure even into adulthood (Jaffee, Avshalom, Moffitt,

Belsky, & Silva, 1997). While research has demonstrated a link between negative child-development outcomes and the negative home environments of adolescent mothers (Hannon & Luster, 1991; Luster & Dubow, 1990), little is known about specific influences on the quality of the home environment. The greater the chances of adolescent mothers living in disadvantaged situations, the more negative the effects of poverty on child development (Aber, Bennett, Conley, & Li, 1997; Klebanov, Brooks-Gunn, McCarton, & McCormick, 1998). The role of home environment as a factor in child health outcomes underscores the need for more research with Canadian adolescent mothers. An examination of the home environmental influences for Aboriginal adolescent mothers is especially critical, as this group is particularly likely to live in poverty (Brownell et al., 2001; Statistics Canada, 1999). In fact, Canada's Aboriginal population scores well below the general population on the Human Development Index, at levels similar to those for developing countries. The development rating for Aboriginal people living off reserves is similar to that for residents of Trinidad and Tobago (ranked 35th globally), while those living on reserves are only marginally better off than Brazilians (ranked 63rd) (Statistics Canada, 1999). This evidence of greater disadvantage among Aboriginal people, combined with a higher adolescent fertility rate in this population, points to the need for research with Aboriginal Canadians.

The nursing care of adolescent mothers could be enhanced through a better understanding of the psychosocial, situational, and ethnic influences on the home environment of their children, by informing the planning of appropriate health and social interventions to improve the home environment of these mothers and children. Such awareness could also guide the development of health and social policies that promote positive child development and better long-term outcomes for both mothers and children. The purpose of this study was to compare maternal psychosocial, situational, and home-environment characteristics of Métis/First Nations¹ and Caucasian adolescent mothers and to explore the role of psychosocial and situational variables in shaping the home environment.

Literature Review

Experts in parenting (Belsky, 1984) and maternal competence (Mercer, 1981; Walker, Crain, & Thompson, 1986) have concluded that numerous

¹ Although Métis and First Nations people form two distinct groups, in this study the two categories were collapsed for comparison purposes. The term Métis refers to persons of mixed Aboriginal and European descent, while First Nations refers to persons of Aboriginal descent only.

situational, psychosocial, and child characteristics influence parenting and the quality of the home environment, which, in turn, affect child health, development, and life outcomes (Letourneau et al., 2001). The psychosocial variable of self-esteem significantly influences maternal role attainment (McGrath, Boukydis, & Lester, 1993; Mercer & Ferketich, 1994). Studies with older mothers have found self-esteem to be a central variable associated with mothering quality (Marshall, Buckner, & Powell, 1991; Zongker, 1977) and maternal role competence — that is, the mother's self-evaluation of her ability to provide physical and emotional care for her infant. Low self-esteem may adversely affect an adolescent mother's parenting practices and the quality of the home environment she provides for her child (Oz, Tari, & Fine, 1992; Patten, 1981).

Social support is also associated with maternal psychosocial and home-environment characteristics, among both older mothers (McGrath et al., 1993; Patten, 1981; Shea & Tronick, 1988) and adolescent mothers (Hannon & Luster, 1991; Luster & Dubow, 1990). Older mothers rate higher on social support, in terms of both quality and levels, than adolescent mothers (Garcia Coll et al., 1986; Reis, 1988; Von Windeguth & Urbano, 1989). Social support has also been associated with maternal attitudes and behaviour. For older mothers, social support is significantly associated with both emotion displayed during interactions (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Levitt, Weber, & Clark, 1986) and confidence with infant care (Cronenwett, 1985). For adolescent mothers, social support is closely related to perception of mothering competence (Colletta & Gregg, 1981; Dormire et al., 1989).

Several researchers report differences in quality and type of social support among adolescent mothers from different ethnic groups. One study found that social support, defined as assistance with infant care from the baby's maternal grandmother, strongly influenced the infant/child-care practices of Black adolescent mothers (Black & Nitz, 1996). In a large US study with an ethnically diverse sample of adolescent mothers, Luster and Dubow (1990) found that the strongest single predictor of home environment was the presence of a spouse or partner in the home; additionally, they found that Caucasian and Hispanic mothers were more likely than Black mothers to have a partner and less likely than Black mothers to live with their own mother rather than with a partner. These ethnic differences in social support point to the need for research into the role of ethnicity in the quality of the home environment in which infants of adolescent mothers grow and develop.

Unfortunately, the majority of social support studies with adolescent mothers have suffered from small sample size and inconsistent definitions and measures of social support (Secco & Moffatt, 1994).

There is growing evidence of ethnic influences on salient maternal variables such as mothering attitudes and practices and child health outcomes (Boyce, Chesterman, & Winkleby, 1991; Hannon & Luster, 1991; Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982). As well, both qualitative (Flaherty, 1988; Gichia, 2000; Sawyer, 1999) and quantitative (Hannon & Luster; Luster & Dubow, 1990) studies have found that ethnicity has a significant influence on parenting practices. Some of the reported ethnic differences are quality of the home environment (Garcia Coll, Hoffman, & Oh, 1987; Luster & Dubow), breastfeeding decisions (Wiemann, DuBois, & Berensen, 1998), breastfeeding duration, and age at introduction of solid food (Black, Siegel, Abel, & Bently, 2001). Ethnicity also accounts for a considerable amount of variance, among Black and Caucasian mothers, in parenting attitudes, expectations of the infant, level of empathy, and attitudes towards physical punishment (Lutenbacher & Hall, 1998).

Most of the research on ethnicity as a determinant of mothering attitudes and practices has been based on US ethnic groups. One research team used multiple regression techniques to determine the unique influence of socio-economic, psychosocial, and other factors on the quality of the home environment (Hannon & Luster, 1991; Luster & Dubow, 1990). While these authors report significant differences for Black, Hispanic, and Caucasian ethnic groups, they did not include ethnicity in their multiple-determinants model. The inclusion of ethnicity in regression models, along with the other maternal psychosocial and situational factors, could yield useful data on ethnicity as a determinant of cognitive stimulation in the home and thus infant health.

Most researchers have treated ethnicity as a study confounder and have either restricted their investigation to one ethnic group or have run separate analyses for ethnic groups. One comparison study restricted the sample of adolescent mothers to Caucasians, to test whether age, without the confounding influence of ethnicity, significantly explained differences in infant-care practices (Garcia Coll et al., 1987). If ethnicity is excluded from multiple regression analyses, it cannot be quantified the extent to which ethnicity, versus other variables such as socio-economic status, explains or predicts outcomes. It is important to determine whether differences in maternal characteristics are due to ethnicity or other confounding variables such as poverty, age, maturity, or social disadvantage.

Few researchers have examined the role of ethnicity as a factor in the quality of mothering among Canadian adolescent mothers. The present longitudinal exploratory study compared prenatal and early postnatal characteristics of Canadian adolescent mothers self-identified as Caucasian, Métis, or First Nations. The study also quantified the contribution of ethnicity and other maternal psychosocial and situational vari-

ables to the level of cognitive stimulation in the home for infants aged 12 to 18 months.

Conceptual Framework

The conceptual framework for the study acknowledges that maternal psychosocial and situational factors influence “performed mothering” (Belsky, 1984) and the quality of infant care and cognitive stimulation in the home. The quality of performed mothering and home environment, in turn, affect infant health outcomes for social, emotional, physical, and cognitive development. Maternal role attainment is an active process during the early postnatal period (Mercer, 1986; Rubin, 1967) that affects the context and quality of mothering and is thought to predict child-development outcomes (Walker & Montgomery, 1994). Maternal role attainment consists of both maternal *perceptions* about role competence and the quality of *performed* mothering (Walker et al., 1986; Walker & Montgomery). Competence in the infant-care provider role, as one component of maternal role attainment, consists of the skills necessary to care for and interact with the infant.

Psychosocial and developmental theories suggest that adolescent girls are less mature than adult women (Collins & Kuczaj, 1991; Erikson, 1968). This may partly explain why adolescent mothers are less capable parents than adult mothers and provide less cognitively stimulating home environments. The adolescent mother has the challenges of infant care superimposed over the usual developmental challenges of adolescence such as the formation of identity (Erikson) and empathy (Selman, 1971). The natural egocentricity of adolescence may interfere with the development of competent and empathetic mothering skills. Psychosocial and situational factors such as ethnicity, age, self-esteem, education, perceptions about caregiving competence, social support, and socio-economic status also influence the home environment and mothering practices.

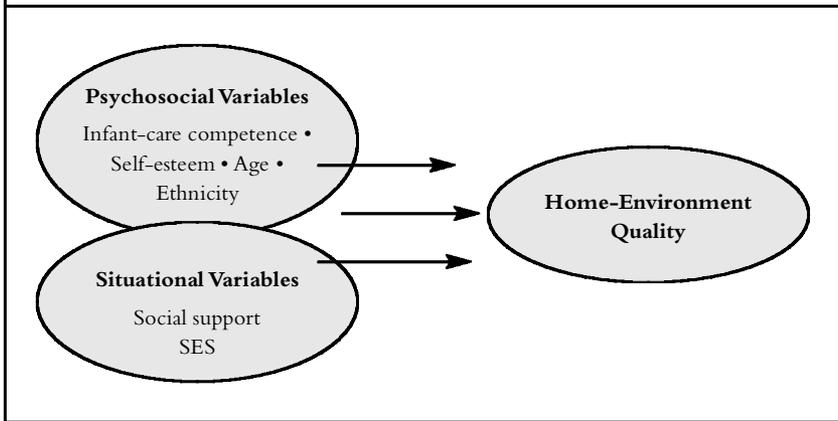
Hypotheses

The null hypotheses were: (1) *There are no significant differences in psychosocial, situational, and home environment quality for Caucasian and Métis/First Nations adolescent mothers.* (2) *Maternal psychosocial and situational characteristics are not significant predictors of the quality of the home environment for adolescent mothers.*

Design

A longitudinal, comparative design was used to examine ethnic differences in psychosocial (ethnicity, self-esteem, age, perceptions of mothering competence), situational (grandmother education level and social support),

Figure 1 *Conceptual Framework: Influences on the Quality of the Home Environment of Adolescent Mothers*



and home-environment quality for a sample of Caucasian and Métis/First Nations adolescent mothers. Multiple regression modelling was used to determine the extent to which prenatal and early postnatal psychosocial and situational characteristics determine the quality of the home environment for infants 12 to 18 months old. A second goal was to determine the relative influence of psychosocial and situational variables on the home-environment quality. Ethical approval was received from the university's Medical Ethics Review Committee and each participant signed a consent form.

Sample

The final sample for this analysis, a subset from a larger study, consisted of 71 mothers under 20 years of age who had self-reported Caucasian, Métis, or First Nations ethnicity. Over a 2-year period, participants were recruited during their third trimester of pregnancy from the adolescent ambulatory care clinics of two large Canadian teaching hospitals. The average age was 16.82 years and average educational attainment was 9.55 years (Table 1). Self-declared ethnicity was recorded as Caucasian 48.7% ($n = 38$), First Nations 23.1% ($n = 18$), and Métis 19.2% ($n = 15$). The First Nations and Métis mothers ($n = 33$) were combined to form a group, hereafter named Métis/First Nations, to compare with the Caucasian ($n = 38$) group. Retention of participants was 68% at the 4th week postnatal and 57% during the 12–18-month measurement period. The participants were transient, with up to three telephone-number and address changes during the follow-up period.

Table 1 Differences in Mean Psychosocial, Situational, and Quality of the Home Environment, by Ethnicity				
	Caucasian Mean (n)	Métis/First Nations Mean (n)	t	p value
Psychosocial				
Age	17.42 (38)	16.27 (33)	4.10	<.001
RSE	29.68 (38)	31.21 (33)	-1.47	.15
Prenatal				
Mom&Baby	4.27 (38)	4.17 (33)	.81	.42
Emotionality	3.83 (38)	3.69 (33)	1.16	.25
4th Week				
Mom&Baby	4.58 (32)	4.60 (25)	-.22	.83
Emotionality	4.35 (32)	4.61 (25)	-2.23	.03
Situational				
Education	2.70 (36)	2.24 (29)	1.71	.09
Enacted support	104.28 (32)	105.96 (24)	-.27	.80
Family support	11.23 (38)	13.03 (33)	-1.32	.19
Friend support	13.23 (38)	11.94 (33)	1.22	.23
Home-Environment Quality				
HOME total	34.72 (25)	30.4 (15)	2.67	.01

Instruments

The psychosocial variables that were measured included age, self-esteem, and self-perceived competence in infant care. The situational variables that were measured included social support from family and friends, enacted social support, and education level as a proxy for socio-economic status.

Perceived infant-care competence was measured using the Mom&Baby (14 items) and Emotionality (four items) dimensions of the Infant Care Expectation Questionnaire (ICEQ) and the Infant Care Questionnaire (ICQ) (Secco, 2002). The ICEQ is designed for the prenatal period and the ICQ is the postnatal version. The Mom&Baby and Emotionality domains consist of five-point Likert items (1 = strongly disagree; 5 = strongly agree). The Mom&Baby dimension assesses knowledge and ability as an infant-care provider; Emotionality reflects level of satisfaction and/or frustration with issues such as infant crying and fussi-

ness. Validation evidence for the ICQ consists of internal-consistency Cronbach's alpha coefficients between .70 and .86 for both adult and adolescent mothers (Secco; Secco, Ateah, Woodgate, & Moffatt, 2002). Construct validity includes higher infant-care competence scores among mothers with more experience and documented maturation or learning curve in scores over the early postnatal period (Secco; Secco et al., 2002). The Cronbach's alpha coefficients of internal consistency for the present study were .86 (Mom&Baby) and .71 (Emotionality) for measures taken at 1 week postnatal.

Self-esteem was measured using the Rosenberg Self-Esteem (RSE) scale, a 10 item, four-point Likert-scaled instrument with satisfactory coefficients of reproducibility (92%) and scalability (72%) (Rosenberg, 1979). The respondent selects a response from *strongly agree* to *strongly disagree* on items such as "On the whole, I am satisfied with myself." The range of scores is 10 to 40. The RSE scale has been used in numerous mothering studies to examine the role of self-esteem as a mediator (Hall, 1996) and as a predictor of mothering competence (Mercer, 1986; Mercer & Ferketich, 1995). Reported reliability coefficients range from .82 to .89 (Mercer & Ferketich, 1995). For the present study, the Cronbach's alpha coefficient of internal consistency was .84.

Family and friend support was assessed using two similar scales, Perceived Social Support from Family (PSS-Fa) and Perceived Social Support from Friends (PSS-Fr). These 20-item scales are designed to measure perceived need for support, information, and feedback from family members and from friends (Procidano & Heller, 1983). The respondent selects *yes*, *no*, or *don't know* for statements such as "My friends give me the moral support that I need" and "My family enjoys hearing about what I think." The range of possible scores for each scale is 0 to 20. Internal consistency reliability coefficients for the scales have been high (.88-.90), and significant correlations have been reported between PSS-Fr and depression ($r = .43$) and between PSS-Fa and confidence ($r = .43$) (Procidano & Heller). For the present sample, the internal consistency alpha coefficient was .91 for the PSS-Fa and .82 for the PSS-Fr.

Enacted social support was measured using the Inventory of Socially Supportive Behaviours (ISSB), a 40-item self-report of frequency of receiving various forms of assistance (i.e., enacted or mobilized support) during the previous month. This scale was inductively developed through content analysis of interviews with pregnant adolescents (Gottlieb, 1978) and has been used with adolescent samples (Barrera, 1981). Frequency of specific helping behaviours is rated on a scale from 1 (*not at all*) to 5 (*almost every day*). The range of possible scores for this scale is 40 to 200. Internal consistency Cronbach's alpha coefficients for the ISSB have been

above .90; test-retest correlations were .88 for a 2-day testing interval and from .63 to .80 for a 1-month testing period (Barrera, 1995).

Quality of the home environment was assessed using Caldwell and Bradley's Home Observation for Measurement of the Environment (HOME), a measure of cognitive stimulation in the home-environment or parenting context (Caldwell & Bradley, 1984). The HOME inventory (45 items) takes approximately 1 hour to administer and consists of six subscales: Variety in Daily Stimulation (five items), Maternal Responsiveness (11 items), Involvement (six items), Play (nine items), Acceptance of Child Behaviour (eight items), and Organization of the Environment (six items). The range of possible scores is 0 to 45. Reported internal consistency for Cronbach's coefficients ranges from .44 to .89 for the individual subscales and is .89 for the total scale (Boehm, 1989). Reported 6-, 12-, and 18-month test-retest temporal stability correlations for a sample of 91 families range from .62 to .77 for the total inventory (Boehm). For the present study, a research nurse was specially trained in administering the HOME, and satisfactory interrater reliability ($r = .85$) was established with another expert.

As with other studies, education of the infant's maternal grandmother was used as a proxy measure of socio-economic status (Hannon & Luster, 1991; Luster & Dubow, 1990). Each adolescent mother was asked to rate her mother's educational attainment level (1 = Grades 1-8; 2 = Grade 12; 3 = vocational or some university; 4 = university degree; 5 = graduate degree). This proxy measure was used because many of the adolescent mothers had not yet achieved their maximum education level (and were not employed). Most of the adolescents, or their family of origin, were living on social assistance, which meant that there was little variation in income as a socio-economic status index.

Procedure

Expectant mothers were recruited during their 3rd trimester and supplied demographic information and completed several instruments (i.e., self-esteem, social support from family and friends, and expectations regarding competence in infant care; Table 2). Social support scales were completed during the 4th week postnatal. A trained research nurse completed the HOME assessment when the infant was 12 to 18 months old.

Data Analysis

Analysis of variance and t tests were conducted to test the ethnic group differences on the study variables. Due to the small sample size, a staged multiple regression analysis was conducted, with variables entered simultaneously, as in previous research (Hannon & Luster, 1991), with a maximum of five variables per model. In stage I, separate psychosocial

Table 2 <i>Time Points and Variables Measured</i>		
3rd Trimester (n = 71)	4th Postnatal Week (n = 57)	12–18 Months (n = 37)
ICEQ PSS-Fr PSS-Fa RSE	ICQ ISSB	HOME
ICEQ	Infant Care Expectation Questionnaire (Prenatal Mom&Baby and Emotionality)	
ICQ	Infant Care Questionnaire (Postnatal Mom&Baby and Emotionality)	
HOME	Home Observation for Measurement of the Environment	
PSS-Fr	Perceived Social Support from Friends	
ISSB	Inventory of Socially Supportive Behaviours	
PSS-Fa	Perceived Social Support from Family	
RSE	Rosenberg Self-Esteem	

and situational models were run to determine significant explanatory variables. Those variables achieving a significance level of at least .1 were entered into the more refined, stage II, analysis. This method determined the significance of the larger psychosocial and situational models and also identified which unique variables within each model explained home-environment quality. A *p* level of .05 was used for all statistical and regression analyses. Due to the small sample size, no interaction variables were included in the analyses.

Results

Psychosocial, Situational, and Home-Environment Variables

Psychosocial variables. The Métis/First Nations mothers were significantly younger ($M = 16.27$ years, $SD = 1.13$) than the Caucasian mothers ($M = 17.4$ years, $SD = 1.22$), $t = 4.10$, $p = .00$ (see Table 1). Although the difference was not significant, the Métis/First Nations mothers had higher self-esteem ($M = 31.21$, $SD = 3.91$) than the Caucasian mothers ($M = 29.68$, $SD = 4.74$). No significant differences were noted in prenatal Emotionality and Mom&Baby scores or 4th-week postnatal Mom&Baby scores. However, the Métis/First Nations mothers had a significantly higher Emotionality score ($M = 4.61$, $SD = .32$) than the Caucasian mothers ($M = 4.35$, $SD = .51$) ($t(57) = -2.23$, $p = .03$) at 4 weeks postnatal. This finding suggests that the Métis/First

Nations mothers experienced greater satisfaction with infant-care provision and less frustration with negative infant responses, fussiness, and crying.

Situational variables. Grandmother education level was higher for Caucasian ($M = 2.70$, $SD = 1.04$) than Métis/First Nations ($M = 2.24$, $SD = 1.09$) mothers, although the difference was not significant: $t(64) = 1.71$, $p = .09$. The Métis/First Nations mothers reported greater family and enacted social support and lower friend social support, but these differences were not significant.

Quality of home environment. The quality of the home environment at 12 to 18 months was significantly higher for the Caucasian mothers ($M = 34.7$, $SD = 4.51$) than the Métis/First Nations mothers ($M = 30.4$, $SD = 5.63$): $t(40) = 2.67$, $p = .01$.

Maternal Psychosocial and Situational Predictors of Home-Environment Quality

Psychosocial variables. A stage I multiple regression model was run, with all psychosocial variables (age, self-esteem, Emotionality, Mom&Baby, and ethnicity) entered simultaneously to examine whether they explained the quality of the home environment when the infant was 12 to 18 months old (Table 3). The psychosocial model explained a significant amount of variance in home-environment quality: $R^2(40) = .28$, $p = .04$; adjusted $R^2 = .17$. Within the stage I psychosocial model, maternal ethnicity (*beta coefficient* = $.37$, $p < .05$) and Emotionality (*beta coefficient* = $-.47$, $p < .04$) were significant explanatory variables. A lower Emotionality score and Caucasian ethnicity predicted a more favourable home environment.

Situational variables. A stage I situational variable model was also run, with the variables grandmother level of education, family and friend social support, and enacted social support entered simultaneously. This situational model explained a significant amount of variance in total home-environment quality: $R^2(37) = .30$, $p = .025$; adjusted $R^2 = .20$. Grandmother education significantly explained total home-environment quality (*beta coefficient* = $.42$, $p = .01$). Enacted social support (ISSB score) was not significant as an explanatory variable for the total home-environment quality (*beta coefficient* = $.26$, $p = .10$).

Stage II regression of psychosocial and situational variables. A refined, stage II, multiple regression model was run containing all the stage I psychosocial and situational variables that achieved a p level less than or equal to $.1$. These variables included emotionality, maternal ethnicity, enacted social support, and grandmother education (see Table 3). The stage II model explained a significant amount of variance in total home-environment quality: $R^2(37) = .49$, $p = .001$; adjusted $R^2 = .41$.

Although the direction of influence was negative for emotionality and positive for grandmother education, these two variables had almost equal explanatory strength for total home-environment quality (*beta coefficient* = $-.43, p = .005$ and $.41, p < .01$). Within this refined stage II model, maternal grandmother education, rather than ethnicity, was a significant explanatory variable.

Table 3 Staged Multiple Regression: Situational and Psychosocial Explanations for Home-Environment Quality		
	Stage I Standardized Betas (<i>p</i> value)	Stage II Standardized Betas (<i>p</i> value)
Maternal characteristics (<i>N</i> = 40)		
Age	.22 (.21)	
Self-esteem	.14 (.29)	
Emotionality	-.47 (.04)	-.43 (.005)
Mom&Baby	.26 (.24)	
Ethnicity	.37 (.05)	.23 (.12)
Model R²	.28 (.04)	
Model Adjusted R²	.17	
Situational Characteristics (<i>N</i> = 37)		
Maternal grandmother education	.42 (.01)	.41 (.01)
PSS-Fa	-.05 (.76)	
PSS-Fr	-.14 (.41)	
ISSB	.26 (.10)	.15 (.35)
Model R²	.30 (.025)	.49 (.001)
Model Adjusted R²	.20	.41

Discussion

This study explored ethnicity differences for several situational and psychosocial variables in a convenience sample of Métis/First Nations and Caucasian adolescent mothers. The influence of these variables on the quality of the home environment at 12 to 18 months postnatal was determined using multiple regression techniques. The findings are consistent with Belsky's (1984) parenting model, as both psychosocial (emotionality) and situational (maternal grandmother education) variables significantly explained parenting competence, defined in this study

as the total score for home-environment quality. The Métis/First Nations mothers were found to have less positive home environments than the Caucasian mothers. Multiple regression analysis revealed that emotionality and education level significantly explained 49% of the variance. The significance of ethnicity as an explanatory variable was lost in the stage II multiple regression analysis when a socio-economic variable (grandmother education) was added. Enacted social support was not significant in either the stage I or the stage II multiple regression analysis. This finding suggests that socio-economic factors may have a greater influence than ethnicity on the home-environment quality for the sample. In future modelling research, it would be interesting, and in keeping with Belsky's model of parenting competence, to include a measure of child characteristics or temperament.

These findings highlight several psychosocial, situational, and home-environment differences for Métis/First Nations and Caucasian adolescent mothers. Even though the Métis/First Nations mothers were younger than the Caucasian mothers, age was not a significant explanatory variable. A US study with older mothers reports a similar age difference between ethnic groups, with Black mothers being significantly younger than both Hispanic and Caucasian mothers (Luster & Dubow, 1990). Another ethnic difference found in the present study was significantly higher emotionality among the Métis/First Nations mothers at 4 weeks postnatal. This result may be due to stronger maternal identity or a response-set measurement bias for the Métis/First Nations compared with the Caucasian mothers. Métis/First Nations adolescent mothers may be more reluctant to report negative emotions, such as frustration, surrounding infant care. They may fear repercussions of openly expressing frustration with infant care: one maternal grandmother, in confidence, expressed the fear that her grandchild was at risk of apprehension, as had happened with one of her own newborns some 20 years earlier.

Emotionality and maternal grandmother education level significantly predicted scores for home-environment quality. Maternal grandmother education as a significant explanatory variable is consistent with previous findings (Garcia Coll et al., 1986; Klebanov et al., 1998). For example, Klebanov et al. found family poverty to be associated with lower scores on home-environment quality when the child was 3 years old. In a study with American mothers aged 14 to 27 (Hannon & Luster, 1991), education level failed to significantly predict scores for home-environment quality, but maternal intelligence quotient, a related variable, was significant. The present findings are aligned with a suggestion by Aber et al. (1997) that mothering differences attributed to ethnicity in comparison studies may, in fact, be due to the confounding influence of poverty or

low income. Therefore, it is recommended that future research in this area include a measure of income or socio-economic status.

Previous studies compared influences on mothering practices or home environment for US ethnic groups. The present study compared Canadian Métis/First Nations and Caucasian ethnic groups and included ethnicity in a multiple regression analysis to determine whether it significantly explained variance in the outcome. This method highlighted the stronger influence of socio-economic status — as indicated by education level of the maternal grandmother — as compared with ethnicity, on the home environment. Socio-economic factors, as reflected in grandmother education, explained a greater amount of the variance in the adolescent mother's home environment, as compared with ethnicity.

In the present study, self-esteem did not differ between the ethnic groups and was not significant within either of the multiple regression models. This result is consistent with the findings of a large US study with older mothers (i.e., over 20 years old), in which self-esteem, while significantly and moderately correlated with home-environment quality, was not significant within a multiple regression model (Hannon & Luster, 1991). This suggests that the role of self-esteem may be better tested within a mediating model. The negative relationship between emotionality and home environment suggests that further validation of the ICEQ and ICQ infant-care competence scales may be necessary. Bell and Richard (2000) note that, in the caregiving context, responsibility and empathy are emotional intentions derived from "caring." Therefore, the infant-care emotionality questions may tap the responsibility and empathic perspectives of adolescent mothers. Due to family and ethnic influences, some adolescent mothers may be more empathetic towards and motivated to care for an infant and have greater maternal identity. However, these same adolescent mothers with high emotionality may be those living in the more disadvantaged home situations leading to the negative association between scores for emotionality and home-environment quality in the multiple regression equation.

Future research should concentrate on explaining ethnic differences in the meaning of, and responses to, infant crying and negative infant behaviour. The more favourable emotionality scores among Métis/First Nations mothers may be related to more infant-care experience and/or less concern with infant crying and fussy behaviour. A better understanding of the meaning of emotionality among adolescent mothers may also shed light on the relationship between maternal emotions and negative mothering outcomes such as child abuse (Lutenbacher & Hall, 1998). Infant temperament is also a factor: frequent crying and fussiness will likely erode maternal perceived competence or emotionality and Mom&Baby scores. Maternal depression is another psychosocial variable

to consider, because it has been associated with negative mothering practices and child-development outcomes and is thought to mediate the effects of poverty on child development (Pettersson & Albers, 2001).

While this exploratory study provides insight into differences between two Canadian ethnic groups, the finding of lower home-environment quality among the Métis/First Nations adolescent mothers should be confirmed with a larger sample. Future research with larger samples would allow for more rigorous causal and hierarchical modelling and consideration of interaction variables. The findings of this study are consistent with those of larger US investigations and with Belsky's (1984) parenting determinants model. They show that the home environment of adolescent mothers is influenced by both psychosocial and situational factors. Additionally, maternal grandmother education level has a greater influence than ethnicity on the home-environment quality of adolescent mothers. The findings suggest that improving the educational attainment and social and living conditions of adolescent mothers may be the most effective strategies for raising that quality.

Limitations

Data analysis and generalizability of the findings were limited by the small sample size and an attrition rate of 32% over the 12–18-month follow-up period. The small sample size allowed for the running of separate regression models with a maximum of five variables. A larger sample would have permitted more powerful analysis, stepwise multiple regression, and inclusion of interaction variables. Another limitation is that some of the variables identified as psychosocial or situational could have belonged to another category (e.g., age). Also, the grouping of adolescents into two broad ethnic groups (Caucasian and Métis/First Nations) may have resulted in failure to capture the diversity within each group.

Implications for Nursing

The findings from this study have implications for nurses caring for adolescent mothers and their infants in community, primary-care, and acute-care settings. They demonstrate that economic factors have a greater effect than maternal age or ethnicity on the quality of cognitive stimulation in the home. Nurses can assist adolescent mothers, especially those in low-income groups, to develop mothering practices that promote infant health. Nurses who are aware that poverty is associated with numerous physical, social, cognitive, and emotional problems can refer adolescent mothers to early-intervention programs that focus on health-promotion strategies and training in infant care. Métis/First Nations adolescent mothers may be considered at special risk due to socio-economic conditions and negative home environments. The nurse may also act as

an advocate for health-care and child-care policies (Cohen & Misuraca, 2001) that acknowledge the realities and needs of adolescent mothers. According to Stainton (2001), an appropriate goal for contemporary maternal-infant/child nurses is to develop a model of nursing care that helps mothers of various cultures to promote their infant's health. Further research on mothering influences for different ethnic groups will help nurses to achieve this goal.

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