

# Labor and Birth Care Satisfaction Associated With Medical Interventions and Accompaniment During Labor Among Chilean Women

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**Introduction:** Satisfaction with care during labor and birth has been associated with various obstetric variables. The purpose of this study was to determine which labor and birth procedures are significant predictors of maternal patient satisfaction in a large cross-sectional sample.

**Methods:** An observational, cross-sectional study of 1660 women giving birth in Chilean public hospital facilities was conducted from 2012 to 2013. Data were collected from 9 different hospitals in 8 regions of Chile using 2 instruments, including the American College of Nurse-Midwives Intrapartum Care Data Set and a locally validated measure of maternal well-being. Women were eligible if they arrived at the labor and delivery unit during early labor (2-3 centimeters dilated) and spent at least 4 hours in labor at the facility. In the current analysis, odds ratios were calculated using ordinal logistic regression for association with a less optimal well-being score (possible outcome values were optimal, adequate, and minimal). Odds ratios were adjusted for age, education, single status, and parity (nulliparous vs multiparous). Stepwise regression was used to identify the procedural factors that were significantly associated with labor and birth care satisfaction.

**Results:** Factors significantly associated with lower satisfaction were cesarean birth (odds ratio [OR], 1.4; 95% confidence interval [CI], 1.1-1.7), pharmacologic pain management (OR, 1.3; 95% CI, 1.02-1.7), continuous fetal heart rate monitoring (OR, 1.4; 95% CI, 1.2-1.8), and episiotomy (OR, 1.4; 95% CI, 1.1-1.7). Nulliparity was also associated with minimal maternal satisfaction (OR, 1.3; 95% CI, 1.0-1.5). Greater satisfaction was associated with accompaniment by a companion of choice during labor (OR, 0.49; 95% CI, 0.40-0.60).

**Discussion:** This study is one of the first to provide empirical evidence that maternal patient satisfaction is negatively affected by many common obstetric procedures in the Latin American context. These findings are consistent with World Health Organization recommendations regarding judicious and necessary, rather than routine, use of obstetric interventions.

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## INTRODUCTION

In 2007, the Ministry of Health of Chile implemented the Integrated and Humanized Model of Health Care, whose purpose is to ensure universal access to adequate birth care that is personalized and humane.<sup>1</sup> This was in response to an increasing reliance on a dehumanizing model of care with a focus on technological interventions that often leads to unnecessary and costly medical procedures.<sup>2</sup> In tandem, the Ministry of Health published a clinical manual of Personalized Care in the Reproductive Process, with a section specifically providing recommendations for labor care and physiologic birth.<sup>1</sup> The recommendations were directed to all personnel who attend births including midwives, who attend all normal vaginal births in public hospitals, where 55% of births took place in 2012.<sup>3</sup> The purpose of the current study was to measure procedures related to the clinical manual and to measure patient satisfaction as it relates to the birth care received. This study was conducted by the Department of Newborn and Women's Health Promotion at the University of Chile, a Pan American Health Organization/World Health Organization

(PAHO/WHO) Collaborating Center for the Advancement of Midwifery, and was meant to serve as a baseline assessment for the state of birth care in Chile.

There has been increasing interest in the academic literature in measuring the intrapartum experience for women. In the Chilean context, Uribe and colleagues consider well-being to consist of women feeling that they are treated well, are valued as people, and receive respectful care<sup>4</sup>; components that are consistent with research in satisfaction and midwifery care.<sup>5-10</sup> The maternal well-being scale developed by Uribe and colleagues is said to measure maternal well-being but overlaps considerably with the concept of patient satisfaction and is perhaps better described as a "positive birth experience." Although there is no consensus at this time about what patient satisfaction encompasses, one definition of patient satisfaction in ambulatory nursing care defines patient satisfaction as an attitude that reflects the congruence of what a patient expects and the care received.<sup>11</sup> A childbirth satisfaction scale developed by Hollins et al incorporates 3 principal themes: service provision, personal attributes, and stress experienced during labor.<sup>12</sup> Both service provision and stress experienced during labor are considered in the maternal well-being scale developed by Uribe and colleagues; therefore, it is feasible to assume, for this purpose, that the measurement of well-being with the instrument developed by Uribe et al is

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## Quick Points

- ◆ A national cross-sectional study of Chilean birth care provided by midwives finds that common obstetric procedures are significantly associated with lower maternal patient satisfaction.
- ◆ The substantial improvement of maternal satisfaction associated with the presence of a companion of choice during labor prior to birth is significant in Chile and consistent with evidence that has examined the effect of continuous support for women during childbirth.
- ◆ Findings may be related to women's experience of control and autonomy during childbirth.

a proxy for satisfaction, although these concepts are distinct from one another.

Van Teijlingen et al warn that the results of birth care satisfaction studies should be applied with caution, but they note that there are still gaps in our understanding of what factors are most important for the maternal experience of labor and birth.<sup>13</sup> Nonetheless, previous research has specifically associated excessive birth intervention,<sup>14,15</sup> lack of partner support,<sup>14</sup> prolonged labor,<sup>16,17</sup> and pain perception<sup>18,19</sup> with a negative perception of this experience. Maternal experience of birth is important in itself, but one study found that it was also predictive of postnatal physiologic functioning, where positive experiences were associated with higher functioning.<sup>20</sup>

Importantly, several authors have identified unmet needs in areas relevant to maternal satisfaction and well-being. Specifically, there have been gaps found in maternal information of and involvement in decisions around intrapartum procedures.<sup>21</sup> One study found unmet needs among women who had given birth in the areas of 1) interpersonal and technical quality of care, 2) adequate physical environment, 3) access to information, and 4) participation in decision making.<sup>22</sup> In a qualitative study, Goberna-Tricas and colleagues identified similar themes in the concerns of recent mothers: safety provided by the availability of technology, interaction with care providers beyond simply receiving information, and structural factors that shape the context of birth.<sup>23</sup> Few studies have measured multiple dimensions of the birth experience, including participation in decision making, as well as physical environment and interpersonal care.<sup>14-24</sup> The objective of the present analysis was to identify factors associated with patient satisfaction not measured in previous studies and explore whether previously identified factors are relevant in the Chilean context.

### METHODS

The current study is a secondary analysis of data collected with the purpose of evaluating the implementation of the labor care recommendations in the Chilean Ministry of Health Manual for Personalized Care in the Reproductive Process. The original study employed both quantitative and qualitative methods to measure the birth experience in Chilean public hospitals with a specific focus on routinely implemented medical interventions, accompaniment during birth, and freedom to eat and move around, in accordance with the published manual. Intrapartum data were collected from patient medical records, and patient satisfaction was assessed on the first

or second postpartum day before discharge from the hospital. The target sample size was calculated to measure the implementation of labor care conditions and to be able to detect differences between regions. The sample was composed of 508 women from 2 hospitals in the metropolitan region, captured during the pilot study,<sup>25</sup> as well as 1374 women from the remaining 7 regions.

The objective of the current analysis was to explore which birth procedures were related to postpartum maternal satisfaction with care received during labor and birth. Participants were recruited from 9 participating public hospitals in 8 regions of Chile, including Tarapacá and Coquimbo from the Northern zone; Valparaíso, Libertador General Bernardo O'Higgins, and the Región Metropolitana from the Central zone; and Biobío, Aysen, and Los Lagos from the Southern zone. All spontaneous vaginal births in public hospitals in Chile are attended by midwives. The protocols for this study were reviewed and approved by the Ethical Committee for Research on Human Beings at the University of Chile Facultad de Medicina (Health Sciences Center) as well as by the ethical committee at each maternity unit participating in the study. Written informed consent was obtained from all women upon entry to the study.

All women at the participating hospitals who met the following criteria were eligible for participation in the study: arrived to the labor and delivery unit during early labor, defined as between 2 and 3 cm of cervical dilatation, and spent at least 4 hours of labor in the hospital before the birth of her child. Women with a history of mental illness or who had taken psychotropic drugs in the past year were ineligible. Women who were regular users of alcohol or illicit drugs were also ineligible. Data collection was conducted between 2012 and 2013.

The primary outcome of interest was patient satisfaction as measured by a validated maternal 42-question self-report well-being scale measuring 8 subscales, developed by Uribe et al.<sup>4</sup> The instrument measures maternal well-being, defined as a "multidimensional complex phenomenon, dynamic and interdependent with satisfaction of the women during her birth process; result of a series of situations that are interrelated and organized around 'good treatment.'"<sup>4</sup> This instrument was developed using a qualitative study of women's birth experiences in Chile and was piloted in 2007 with 299 postpartum women and found to be internally reliable (Cronbach's alpha = .90). The maximum possible score is 210, the possible outcomes being optimal (score > 172), adequate (score of 152-172), and minimal (score < 152), as defined by the developers of the instrument.<sup>4</sup> The scale includes questions

about freedom of movement, the physical environment, and the treatment received—for example, “I was informed every time a medication was administered”; “For my comfort during labor, I was offered various different alternatives to rest, apart from lying down in a bed”; and “During the whole birth process, the staff oriented me, told me what to do, and encouraged me.”

Independent variables of interest were adapted from the American College of Nurse-Midwives (ACNM) Intrapartum Care Data Set,<sup>26</sup> a standardized tool to measure intrapartum care. This tool was used to capture procedural variables of the peripartum period in a replicable way, including such variables of interest as pharmacologic pain management (nitrous oxide or epidural analgesia), artificial rupture of membranes, administration of oxytocin, receipt of episiotomy, continuous fetal heart rate monitoring, and number of vaginal examinations during labor. Number of vaginal examinations during labor was made into a dichotomous variable based on the median number (4). Therefore, number of vaginal examinations was considered “high” if more than 4, compared to equal to, or less than, 4. Also included was the mode of birth, operationalized as cesarean birth, instrumental vaginal birth, or spontaneous vaginal birth. Finally, whether or not a woman was accompanied by a companion of choice during labor (yes/no) was considered. The final model adjusted for the following demographic variables: maternal age in years, education level (less than elementary, completed elementary, less than high school, completed high school, more than high school), single status (not married or cohabiting), and parity (nulliparous vs multiparous).

All independent variables of interest were categorical. Ordinal logistic regression analysis was performed for the outcome with each independent variable to determine the most relevant univariate associations. Ordinal logistic regression analysis was then performed with all independent variables, adjusting for demographic variables. All independent variables were checked for collinearity. Finally, stepwise procedure ordinal logistic regression was used to identify the best explanatory model given the variables of interest. Variables that were considered significant at  $P > .05$  were retained in the model. The assumption of proportional odds was tested and confirmed with the Brant test ( $P = .235$ ), and the model goodness of fit was checked with approximate log likelihood for ordinal logistic regression ( $P = .2929$ .) All analyses were performed with Stata 14.0 (College Station, TX).

## RESULTS

Of the 1729 women eligible for the study, no one declined to participate, and 1660 (96.0%) women were included in the final analysis. Seventy women were excluded secondary to missing outcome data ( $n = 6$ ) and not carrying the pregnancy to term ( $n = 64$ ). The majority of women in the study were aged between 18 and 32 years (Table 1). With regard to parity, 47.3% of respondents were nulliparous, and 40.9% were multiparous. The remaining 11.3% were missing data on parity. The majority of women were either married or cohabitating with a partner, and 12.2% of women in the sample were single. One woman in the sample was widowed. The educational

**Table 1. Demographic Characteristics and Frequency of Independent Variables**

	Total (N = 1660)
<b>Age, n (%), y</b>	
13-19	465 (28.0)
20-29	891 (53.7)
30-39	357 (21.5)
40+	62 (3.7)
Missing data	1 (< 1)
<b>Marital status, n (%)</b>	
Single	203 (12.2)
Married	711 (42.8)
Cohabiting	740 (44.6)
Widowed	1 (< 1)
Missing data	1 (< 1)
<b>Education, n (%)</b>	
Less than elementary school	72 (4.3)
Completed elementary school	175 (10.5)
Less than high school	430 (25.9)
Completed high school	720 (43.4)
More than high school	262 (15.8)
Missing data	1 (< 1)
<b>Parity, n (%)</b>	
Nulliparous	790 (47.3)
Multiparous	683 (40.9)
Missing data	187 (11.3)
<b>Mode of birth, n (%)</b>	
Spontaneous vaginal	1258 (75.87)
Cesarean	313 (18.9)
Forceps	70 (4.2)
Missing data	19 (1.1)
<b>Accompanied during labor, n (%)</b>	
No	417 (25.1)
Yes	1234 (74.3)
Missing data	9 (< 1)
<b>Number of vaginal examinations during labor, n (%)</b>	
≤4	843 (50.8)
>4	817 (49.2)
Missing data	na
<b>Fetal heart rate monitoring, n (%)</b>	
Intermittent or only at admission	1157 (69.7)
Continuous	481 (29.0)
Missing data	22 (1.3)
<b>Episiotomy, n (%)</b>	
No	654 (39.4)
Yes	747 (45.0)
Missing data	256 (15.6)

(Continued)

	Total (N = 1660)
<b>Received oxytocin, n (%)</b>	
No	536 (32.3)
Yes	1119 (67.4)
Missing data	5 (< 1)
<b>Artificial rupture of membranes, n (%)</b>	
Did not receive	826 (49.8)
Received	829 (49.9)
Missing data	5 (< 1)
<b>Pharmacologic pain management, n (%)</b>	
Did not receive	312 (18.8)
Received	1226 (73.9)
Missing data	122 (7.3)

level of participants was rather heterogeneous, and 40.8% of participants had not finished high school.

The range of satisfaction scores in this sample was 66 to 210. Almost half (49.4%) of the women in the sample had optimal patient satisfaction scores, 28.6% of the women had adequate satisfaction scores, and 22.0% of the women had minimal satisfaction scores. Women with optimal satisfaction were more likely than women with either adequate or minimal satisfaction to be multiparous (44.8% compared to 38.7% and 36.2%, respectively). Women who reported minimal satisfaction were more likely than women in the other outcome groups to have completed more than a high school education (20.3% compared to 14.3% and 14.6%). The *P* values for both of these noted differences were less than .05.

Proportional odds for all independent variables in the univariate and adjusted models are reported in Table 2. Seven variables had significant odds ratios when optimal satisfaction was compared to combined adequate and minimal satisfaction and when combined optimal and adequate satisfaction were compared to minimal satisfaction: cesarean birth, pharmacologic pain management, episiotomy, continuous fetal heart rate monitoring, oxytocin, receiving more than 4 vaginal examinations during labor, and the presence of a companion of choice before pushing. Artificial rupture of membranes and instrumental vaginal birth (with forceps) were not significantly related to the outcome in either univariate or adjusted ordinal logistic regression.

After adjusting for age, single status, education level, and parity, cesarean birth, pharmacologic pain management, continuous fetal monitoring, and episiotomy maintained significant odds ratios, although their *P* values increased (Table 3). Artificial rupture of membranes, administration of oxytocin, forceps use, and more than the median number of vaginal examinations during labor had odds ratios greater than one but were not statistically significant after adjusting for these demographic variables. Being accompanied by a companion of choice during labor was significantly associated with maternal satisfaction for both the univariate and adjusted regression.

The same variables that were significantly associated with maternal satisfaction after adjustment for demographic

	Optimal (n = 820)	Adequate (n = 475)	Minimal (n = 365)
<b>Age, n (%), y</b>			
13-19	238 (29.0)	136 (28.6)	91 (24.9)
20-29	417 (50.8)	260 (54.7)	214 (58.6)
30-39	147 (17.9)	156 (32.8)	54 (14.8)
40+	17 (2.1)	4 (< 1)	5 (1.4)
Missing data	1 (< 1)	0 (0)	0(0)
<b>Marital status, n (%)</b>			
Single	103 (12.6)	59 (12.4)	41 (11.2)
Married	358 (43.7)	194 (40.8)	159 (43.6)
Cohabiting	356 (43.4)	221 (46.5)	163 (44.7)
Widowed	1 (< 1)	na	na
Missing data	1 (< 1)	na	na
<b>Education, n (%)</b>			
Less than elementary school	30 (3.7)	24 (5.1)	18 (4.9)
Completed elementary school	99 (12.1)	44 (9.3)	32 (8.8)
Less than high school	212 (25.9)	132 (27.8)	86 (23.6)
Completed high school	358 (43.7)	207 (43.6)	155 (42.5)
More than high school	120 (14.6)	68 (14.3)	74 (20.3)
Missing data	1 (<1)	0 (0)	0 (0)
<b>Parity, n (%)</b>			
Nulliparous	352 (42.9)	244 (51.4)	194 (53.2)
Multiparous	367 (44.8)	184 (38.7)	132 (36.2)
Missing data	101 (23.3)	47 (9.9)	39 (10.7)
<b>Mode of birth, n (%)</b>			
Spontaneous vaginal	644 (78.5)	360 (75.8)	251 (68.8)
Cesarean	135 (16.5)	88 (18.5)	90 (24.7)
Forceps	30 (3.7)	23 (4.8)	17 (4.7)
Missing data	11 (1.3)	4 (< 1)	7 (1.9)
<b>Accompanied during labor, n (%)</b>			
No	157 (19.1)	124 (26.1)	135 (37.0)
Yes	656 (80.0)	348 (73.3)	227 (62.2)
Missing data	7 (< 1)	3 (< 1)	3 (< 1)
<b>Number of vaginal examinations during labor, n (%)</b>			
≤ 4	434 (52.9)	242 (50.9)	167 (45.8)
> 4	386 (47.1)	233 (49.1)	198 (54.2)
Missing data	na	na	na
<b>Fetal heart rate monitoring, n (%)</b>			
Intermittent or only at admission	611 (74.5)	306 (64.4)	240 (65.8)
Continuous	193 (23.5)	163 (34.3)	124 (34.0)
Missing data	16 (2.0)	6 (1.3)	1 (< 1)

(Continued)

**Table 2. Demographic Distribution by Response Category**

	Optimal (n = 820)	Adequate (n = 475)	Minimal (n = 365)
<b>Episiotomy, n (%)</b>			
No	365 (44.5)	167 (35.2)	120 (32.9)
Yes	342 (41.7)	238 (50.1)	166 (45.5)
Missing data	113 (13.8)	60 (12.9)	79 (21.6)
<b>Received oxytocin, n (%)</b>			
No	292 (35.6)	137 (28.8)	105 (28.8)
Yes	522 (63.7)	336 (70.7)	259 (71.0)
Missing data	6 (< 1)	2 (< 1)	1 (< 1)
<b>Artificial rupture of membranes, n (%)</b>			
Did not receive	427 (52.1)	232 (48.8)	164 (44.9)
Received	387 (47.2)	241 (50.7)	200 (54.8)
Missing data	6 (< 1)	2 (< 1)	1 (< 1)
<b>Pharmacologic pain management, n (%)</b>			
Did not receive	186 (22.7)	83 (17.5)	41 (11.2)
Received	583 (71.1)	350 (75.3)	291 (79.7)
Missing data	51 (6.2)	42 (8.8)	33 (9.0)

variables appeared in the full explanatory model that was identified using stepwise analysis and included type of birth, accompaniment, pharmacologic pain management, episiotomy, and continuous fetal monitoring. Nulliparity was the only pre-existing variable that was significantly associated with odds of minimal maternal well-being (Table 4).

## DISCUSSION

Cesarean birth, pharmacologic pain management, episiotomy, and continuous fetal heart rate monitoring were all associated with lower patient satisfaction. This finding is largely consistent with previous studies that found cesarean birth was associated with negative birth experiences.<sup>18,27,28</sup> Previous studies have also identified awareness of and perceived control over procedures as important predictors of a positive birth experience and satisfaction.<sup>17-19,29-32</sup> The significant procedural factors identified by the current study may in fact be indicators of these underlying processes of decision participation. For example, continuous fetal heart rate monitoring and epidural analgesia severely limit a laboring woman's freedom of movement and positioning, limiting the options available to her for coping with her labor. Results from Morgan et al may support this hypothesis.<sup>16</sup> They found that epidural analgesia was the most effective method of pain reduction, but that epidural use was also associated with a negative experience of childbirth, highlighting that experience of pain is not the only, nor necessarily the most important, aspect of satisfaction with labor.<sup>16</sup>

Moreover, effective management of pain can be achieved through various avenues, including interpersonal support. Leap et al found in a qualitative analysis that relational continuous support for laboring women facilitated coping with labor pains as well as empowerment of women.<sup>33</sup> In fact, in a systematic review of the relationship between pain and

**Table 3. Unadjusted and Adjusted Proportional Odds of Lower Category of Maternal Satisfaction**

	Unadjusted OR (95% CI)	Adjusted <sup>a</sup> OR (95% CI)
<b>Mode of birth</b>		
Spontaneous vaginal	Ref	Ref
Cesarean	1.4 (1.1-1.8) <sup>b</sup>	1.4 <sup>b</sup> (1.1-1.8)
Forceps	1.2 (.8-1.9)	1.2 (.78-1.9)
<b>Accompanied during labor</b>		
No	Ref	Ref
Yes	0.51 <sup>c</sup> (0.41-0.62)	0.50 <sup>c</sup> (0.41-0.62)
<b>Number of vaginal examinations during labor</b>		
≤ 4	Ref	Ref
> 4	1.2 <sup>d</sup> (1.0-1.4)	1.2 (0.98-1.4)
<b>Fetal heart rate monitoring</b>		
Intermittent or only at admission	Ref	Ref
Continuous	1.6 <sup>c</sup> (1.3-1.9)	1.6 <sup>c</sup> (1.3-2.0)
<b>Episiotomy</b>		
No	Ref	Ref
Yes	1.5 <sup>c</sup> (1.3-1.8)	1.4 <sup>c</sup> (1.2-1.8)
<b>Received oxytocin</b>		
No	Ref	Ref
Yes	1.3 <sup>d</sup> (1.0-1.6)	1.2 (.98-1.6)
<b>Artificial rupture of membranes</b>		
Did not receive	Ref	Ref
Received	1.1 (0.93-1.4)	1.2 (0.98-1.6)
<b>Pharmacologic pain management</b>		
Did not receive	Ref	Ref
Received	1.8 <sup>c</sup> (1.4-2.3)	1.7 <sup>c</sup> (1.3-2.2)

<sup>a</sup> Adjusted model includes age, single status, education, and parity.

<sup>b</sup>  $P \leq .01$ .

<sup>c</sup>  $P \leq .001$ .

<sup>d</sup>  $P \leq .05$ .

childbirth satisfaction, Hodnett found that personal expectations, the support and the quality of the relationship between the laboring woman and her caregiver, and meaningful involvement in decision making outweighed experiences of pain and pain relief in the reported satisfaction with childbirth.<sup>34</sup> These findings are consistent with another finding of the current study, namely, the influence of accompaniment during labor.

The most compelling finding of this analysis is that the presence of a companion reduced the odds of lower maternal satisfaction by half. This association remained after controlling for the woman's being single, as well as for age, education, and parity. There are many possible mechanisms by which maternal accompaniment could improve maternal satisfaction, including increased perception of control, access to information, and participation in decision making; all evidence indicates these are central to the experience of childbirth.<sup>17-19,27,35-37</sup> The companion may serve as a mediator between the provider and the birthing woman by requesting more information and engaging the woman in

**Table 4. Full Explanatory Model of Lower Category of Maternal Satisfaction**

	OR (95% CI)
<b>Mode of birth</b>	
Spontaneous vaginal	Ref
Cesarean	1.4 <sup>a</sup> (1.1-1.7)
Forceps	1.0 (0.70-1.6)
<b>Accompanied during labor</b>	
No	Ref
Yes	0.50 <sup>b</sup> (0.41-0.62)
<b>Parity</b>	
Multiparous	Ref
Nulliparous	1.3 <sup>a</sup> (1.0-1.5)
<b>Fetal heart rate monitoring</b>	
Intermittent or only at admission	Ref
Continuous	1.4 <sup>b</sup> (1.0-1.5)
<b>Episiotomy</b>	
No	Ref
Yes	1.4 <sup>c</sup> (1.3-1.7)
<b>Pharmacologic pain management</b>	
Did not receive	Ref
Received	1.4 <sup>c</sup> (1.1-1.8)

<sup>a</sup>*P* ≤ .05.<sup>b</sup>*P* ≤ .001.<sup>c</sup>*P* ≤ .01.

meaningful decision-making conversations. Moreover, social support in itself has been consistently associated with positive maternal well-being,<sup>18,27,28</sup> as well as with positive birth outcomes.<sup>33</sup> In the Cochrane review of 22 studies examining the effects of continuous support during childbirth, Hodnett et al report significant associations between such accompaniment and shortened labor; greater proportions of spontaneous vaginal birth; and lower proportions of cesarean, use of pharmacologic anesthesia, and postpartum depression.<sup>38</sup> Some previous research identified time and interaction with health care providers as predictive of birth satisfaction; however, they did not consider the support of a non-health care provider.<sup>14,23</sup> The support of a significant individual may interact with the care received from a provider and mediate potential mistreatment by providers, but it is also likely to have independent effects on maternal well-being during the intrapartum period.

Based on a comprehensive review of the literature, the World Health Organization currently recommends the presence of continuous support for all laboring women provided by a person of the woman's choosing.<sup>29</sup> While the presence of a significant other is current practice in many places, there remain large areas in Latin America and the Caribbean where it is not, especially on labor wards before women are transferred to delivery rooms. The Collaborating Center for Midwifery in the Americas is currently in the process of surveying countries in the region to understand where it is not practiced and why.

Notably, labor management in the form of artificial rupture of membranes and administration of artificial oxytocin

were associated with higher odds of low maternal satisfaction, although these associations were not significant at  $\alpha$  equals .05 in the current sample. One study found that labor augmentation decreases satisfaction with childbirth<sup>18</sup> while another found no relationship between labor induction and patient satisfaction.<sup>39</sup> There was an association in the current study, but this relationship did not reach statistical significance.

The current study found that the factors associated with birth care satisfaction are also related to a positive birth experience as measured in the postpartum period. Using a validated measure of maternal well-being specific to the social context in which the data were collected (Chile), the results of this study are consistent with previous studies of satisfaction with birth care. Another strength is its inclusion of a wide range of covariates and its adjustment for important demographic variables.

A limitation of the current study is a lack of data about the long- or medium-term implications of satisfaction with birth and labor care and specifically well-being as measured by the instrument of Uribe et al. Future research might explore the relationship between positive birth experience and such factors as postpartum depression or exclusive breastfeeding at one month postpartum. The association of important intrapartum medical procedures with lower maternal satisfaction is consistent with previous research<sup>14,15,23</sup> and should be considered when establishing recommendations for best practices, although future research could further explore the mechanisms of this relationship. While the present study considered a global intrapartum well-being score, future research might explore the different dimensions of maternal well-being to better focus training and facility improvements.

While the instrument used to measure satisfaction with labor and birth care has been demonstrated to be internally reliable, it has not been rigorously tested for construct validity nor has it been tested against other instruments. This is a limitation to the interpretation of the findings using this instrument. The cross-sectional nature of the study also limits its ability to establish temporal relationships among variables. Moreover, the current study was completed in only public hospitals, with a nonprobability sample, so the results may not be applicable to all of Chile.

## CLINICAL AND POLICY IMPLICATIONS

The substantial improvement of maternal well-being associated with the presence of an important person during labor prior to birth is significant and consistent with evidence that has examined the effect of continuous support for women during childbirth.<sup>18,27,28</sup> Moreover, this finding can be applied with little disruption to the standard of care to improve maternal well-being by encouraging the presence of a significant person chosen by a woman during labor. Qualitative reports indicate that midwifery personnel in Chile often cite a lack of space in hospital facilities for companions,<sup>30</sup> although it is as of yet unknown to what degree such comments reflect attitudes of resistance by personnel, rather than actual physical space limitations.

Recent publications on the state of maternal care in Chile<sup>25</sup> suggest that maternal agency is low in the intrapartum period. The study further underscores the need to study

maternal agency and social support throughout the birth process for the Chilean context, which has not been specifically examined, but may have influenced the results of the current study. Interestingly in this study, women with a relatively high level of education (greater than a high school diploma) were overrepresented in the low satisfaction group, which may be due to differential levels of empowerment in the birth process, where women with higher levels of education were more aware of their rights and therefore more frustrated with the care they received. As satisfaction is conceptualized as a congruence between expectations and experiences,<sup>33</sup> the lower well-being in this group may relate to differential expectations rather than differential experiences; however, this pattern should be studied further before any conclusions are drawn.

This study further emphasizes the need for and potential benefits of reform in quality of birth care, not only in Chile, but also in other countries in Latin America and the Caribbean. The WHO definition of quality of care in the perinatal period has evolved to include not only technical quality (ie, evidence-based care guided by protocol) but also the experience of the laboring woman.<sup>31</sup> This study indicates that Chile has room to improve in this latter component of care quality.

## CONCLUSION

A high level of medical intervention in low-risk birth has been documented in Chilean public hospitals.<sup>30</sup> The current association found between various medical interventions and more negative birth experience suggests that an important reform to optimize maternal and infant well-being could include minimizing unnecessary intervention during childbirth. Therefore, improving women's birth experience in Chile calls for changes in the undergraduate and postgraduate training of Chilean midwives, as well as physicians, to focus on interpersonal interaction and the birth experience and to consider carefully the use of interventions. Previous studies have documented the association between a woman's experience of control during childbirth and her satisfaction with the experience.<sup>32,35,40</sup> In tandem with changes to professional formation, empowerment of women around their reproductive rights and improved prenatal education could also contribute to more positive experiences of birth among women in Chile.

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## CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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