Differences Between Patient and Provider Perceptions of Informed Decision Making About Epidural Analgesia Use During Childbirth

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ABSTRACT

The objective of this study was to determine whether differences exist between patient and provider perceptions regarding the decision-making process around use of epidural analgesia during childbirth. The dyadic patient–provider Decisional Conflict Scale was modified to measure first-time mother ($n = 35$) and maternity care provider ($n = 52$) perceptions. Providers perceived a greater degree of informed decision making than patients (84.97 vs. 79.41, $p = .04$) and were more likely to recall they upheld patients' rights to make informed choices than patients were to perceive their rights had been upheld (85.95 vs. 71.73, $p < .01$). This incongruity highlights the need to align legal principles with practice to create mutual agreement between stakeholder perceptions of informed decision making.

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National obstetric intervention rates in the United States remain high with more than 1.3 million women giving birth via cesarean surgery each year (31.8% of all births; Martin et al., 2010). However, the recent increase in interventions has not been coupled with a reduction in perinatal mortality and morbidity (MacDorman, Declercq, Menacker, & Malloy, 2006; Sakala & Corry, 2008). In contrast, higher rates of premature and low-birth-weight newborns, greater prevalence of maternal postpartum depression, and

longer postnatal recovery periods have each been correlated with the rise in childbirth intervention rates (MacDorman et al., 2006; March of Dimes, 2006; Sakala & Corry, 2008). Because obstetric interventions carry both risks and benefits, women are precariously placed at the center of numerous decision dilemmas at a time when they are vulnerable and in need of information to support their choices. There is a growing emphasis on the importance of the decision-making process associated with childbirth

and the potential that patient access to informed decision making has to improve perinatal health outcomes (Sakala & Corry, 2008).

The objective of this study was to gain insight into the current state of informed decision making during childbirth by determining whether differences exist between patient and provider perceptions of the decision-making process regarding one of the most common obstetric interventions—epidural analgesia. According to a national U.S. study of mothers' childbirth experiences, 67% of women report receipt of epidural analgesia for pain management (Declercq, Sakala, Corry, Applebaum, & Herrlich, 2013), a procedure known to increase the likelihood of an intervention cascade, in itself leading to higher rates of operative birth (Shorten & Shorten, 2007). Balancing the risks and benefits associated with epidural analgesia during labor requires informed and shared decision making so that women's individual needs and values are acknowledged.

Theories of informed and shared decision making emphasize that informed choice requires much more than a patient's signature on a legal document. Rather, it is an individual health-care decision resulting from a process of information exchange between patient and provider (Entwistle & Watt, 2006; Gravel, Legare, & Graham, 2006; Wirtz, Cribb, & Barber, 2006) based on patient receipt and comprehension of the benefits, risks, and alternatives of care; provider understanding and support of the patients' autonomous values and preferences; patient and provider certainty that the decision made aligns with the patients' needs, preferences, and values; and compliance with patients' rights.

LITERATURE REVIEW

Studies indicate that provider support is a primary factor in patients' abilities to make informed choices and is even more influential than the provision of information pamphlets and decision aids (Kirkham & Stapleton, 2004; O'Cathain, 2004; O'Cathain, Thomas, Walters, Nicholl, & Kirkham, 2002; Shorten, Shorten, Keogh, West, & Morris, 2005; Stapleton, 2004). However, physicians from various specialties report they are not trained in how to involve patients in health-care decisions (Elwyn, Edwards, Gwyn, & Grol, 1999) and consequently do not integrate informed decision-making principles into their practice despite professional guidelines (Elwyn et al., 1999; Hindley & Thomson, 2005; Levy, 1999b). In turn, patients indicate they do not have the oppor-

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tunity to participate in health-care choices (Declercq et al., 2013; Levy, 1999a; O'Cathain, Thomas, et al., 2002; Rosen, Anell, & Hjortsberg, 2001).

Although informed decision making necessitates a shared process between patient and provider, little research has compared both parties' perceptions of informed decision making (Bekker et al., 1999). Studies that have examined stakeholder perceptions of actual decision making (vs. hypothetical, preferred, or expected decision making) are sparse and have rarely addressed choices that occur during childbirth in particular. Most decision-making research related to childbirth has exclusively examined patient perceptions.

This study addresses an important gap in decision-making literature regarding what, if any, differences exist between patient and provider perceptions of informed decision making during the increasingly common childbirth choice regarding epidural analgesia use. Because labor and delivery nurses (licensed registered nurses who provide labor care) and obstetrician-gynecologists (OB-GYNs) play a key role in childbirth decision making, both provider parties were investigated.

The selected childbirth choice is an opportune environment for communication and information exchange between patients and providers. Abundant research details the associated risks, benefits, and alternatives related to epidural analgesia use, all of which providers can share with patients (American College of Obstetricians and Gynecologists, 2002, 2004, 2007). Moreover, because epidural analgesia use typically is not medically necessary or recommended for low-risk women (American College of Obstetricians and Gynecologists, 2002), patient values, beliefs, and preferences are likely to play a key role in this specific decision-making process, whereas provider beliefs and preferences regarding the use of epidural analgesia (or any other medical intervention, treatment, or procedure) should not interfere with the process of informed decision making based on bioethical regulations. Finally, the widespread use of epidural analgesia in the United States (Hamilton, Martin, & Ventura, 2009) enhanced the likelihood of finding a sufficiently large sample of health-care providers and patients to participate in

this study and supported the relevance of this study to a greater population.

There are five major assumptions guiding this research. The first assumption is that patient decision participation is predicated on the awareness that a decision about epidural analgesia pain relief is available and needs to be made within a finite period of time (pregnancy to birth). The second is that providers have access to, and are knowledgeable of, evidence-based research related to childbirth. The third is that patients have the right and responsibility to make decisions related to their care (“A Patient’s Bill of Rights: The American Hospital Association,” 1978; Health Insurance Portability and Accountability Act, 1996; Meng, 2008). The fourth is that choices made during childbirth are important and can have serious short- and long-term health implications for mother and child because of the permeable nature of the maternal–fetal dyadic relationship in combination with the vulnerable nature of fetal brain development (Schore, 2003; Siegel, 1999; Van den Bergh, Mulder, Mennes, & Glover, 2005). The final assumption is that patient involvement in informed decision making is a negotiated event that occurs between patient and provider (Elwyn et al., 2001), thus requiring assessment of perceptions from those who are most likely involved in the decision-making process.

RESEARCH QUESTION

Are there differences between patient and provider perceptions of the degree to which informed decision making has occurred regarding epidural analgesia use during childbirth?

METHODS

Research Design

An exploratory comparative design was used to examine the differences between patient and provider perceptions of informed decision making regarding epidural analgesia use during childbirth. Although a triadic design in which a patient is paired with her nurse and OB-GYN would have been an ideal way to examine the research question, it was not a feasible option to implement within the scope of this study because of Health Insurance Portability and Accountability Act (HIPAA) regulations and the litigious environment of maternity care. Therefore, patients were surveyed about their perceptions of informed decision making during their own childbirth experience and providers were surveyed about their perceptions of informed decision making

based on the last patient they saw who matched the characteristics of the patient sample.

Ethics

Approval for this research was granted by the institutional review board from participating hospitals and the Santa Barbara Graduate Institute of the Chicago School of Professional Psychology. All participants gave their informed written consent. A raffle consisting of a \$100 gift card to Amazon.com was offered to each group as a recruitment incentive.

Participants and Recruitment

Sample size: Sixty-six participants were needed (22 per group) using a three group, one-way analysis of variance (ANOVA) design with $p < .05$, a power of .80, and effect size of .40 (typical for social science research; Cohen, 1988).

Patients: One hundred questionnaires were distributed to English-literate, first-time, low-risk mothers (singleton, vertex, ≥ 37 weeks) who had vaginally birthed a live newborn within a 4-month period at a hospital attended by an OB-GYN. Of these, 35 surveys were completed, yielding a 35% response rate. Patient ages ranged from younger than 20 years to 45 years (mean age 30.2 years, standard deviation [SD] = 5.6). Table 1 illustrates that most of patient participants were White ($n = 25$ or 71.4%), educated at the tertiary level (college or university degree = 27 or 77.1%), and married ($n = 28$ or 80%).

Providers: Forty-nine surveys were distributed to nurses and 43 to OB-GYNs who had hospital privileges in the local region being studied. Of these, 28 nurses and 24 OB-GYNs completed the survey,

TABLE 1
Summary of Patient Characteristics ($n = 35$)

Category	Frequency	%
Ethnicity		
White	25	71.4
Hispanic	6	17.1
Other ^a	4	11.4
Partnership status		
Unmarried with a partner	6	17.1
Married	28	80.0
Missing	1	2.9
Highest level of education		
Less than high school	—	—
High school or equivalent	8	22.9
College or university degree	27	77.1

^aAmerican Indian, Alaskan Native, Native Hawaiian, and other Pacific Islander.

TABLE 2
Summary of Provider Characteristics (*n* = 52)

Category	Nurses ^a	OB-GYNs ^b
	Frequency (%)	Frequency (%)
Sex		
Male	—	14 (58.3)
Female	28 (100.0)	10 (41.7)
Number of years in obstetrics		
1–5	4 (14.3)	2 (8.3)
6–10	6 (21.4)	3 (12.5)
11–15	8 (28.6)	4 (16.7)
16–20	4 (14.3)	3 (12.5)
21–25	3 (10.7)	4 (16.7)
26–30	1 (3.6)	2 (8.3)
>31	2 (7.1)	6 (25.0)

^a*n* = 28.

^b*n* = 24.

yielding response rates of 57% and 56%, respectively. All of the nurses and 10 of the 24 OB-GYNs were female (Table 2). The age of the nurses ranged from 21 to 65 years (mean age 42.6 years, *SD* = 9.5) with OB-GYNs aged from 31 to older than 66 years (mean age of 49.3 years, *SD* = 9.3). Mean years of experience working in obstetrics were approximately 14.3 for nurses and 20.1 for OB-GYNs, using class midpoints for experience from Table 2 and assuming 33 years average experience for those in the more than 31 years category.

Materials and Procedure

All participants were sampled from the same region and within a controlled time frame in an effort to hold constant geographic and historical event differences that could confound group perceptions. The data collection region was primarily composed of medium-sized public hospitals that provide care for 2,400–2,800 births a year, with the exception of one small public hospital. According to public health records, the women who gave birth within these facilities at the time of data collection were as follows: 32%–42% first-time mothers, 96%–98% singleton births, and 25%–32% cesarean surgeries (State of California Department of Public Health, 2009, 2010).

Patients who met study criteria were identified and accessed through the home visitation program available to all families within the local region. Program staff distributed the informed consent form and survey to all eligible mothers during the scheduled visits in a 5-month period (October 2009–February 2010). Consent forms and surveys were

collected in separate designated envelopes to ensure anonymity.

During the same time period, providers (nurses and OB-GYNs who had hospital privileges) were recruited during a designated staff meeting as approved by the hospital, at which time they were asked to complete an anonymous survey about the last patient they attended during labor and child-birth who was an English-literate, low-risk, first-time mother who vaginally birthed a live, singleton baby and faced the decision regarding epidural analgesia use for pain relief, regardless of whether or not epidural analgesia was administered. Providers were instructed to base their responses on this specific patient in an effort to avoid the tendency of generalized answers. Permission to distribute the survey to providers was gained from all but one hospital within the designated region. A direct mailing was sent to the OB-GYNs who did not receive the study presentation.

Measurement tools: Because there were no available assessment tools designed specifically to examine patient and provider perceptions of informed decision making related to epidural analgesia use, the dyadic patient–provider Decisional Conflict Scale (DCS; LeBlanc, Kenny, O'Connor, & Legare, 2009; Legare, Leblanc, Robitaille, & Turcotte, 2012) was modified for the purpose.

The patient version of the modified DCS contains 27 items and 6 subscales and aims to measure the degree to which patients perceived they (a) were *informed* about the risks, benefits, and alternatives of care; (b) were clear about their *values* regarding the risks and benefits related to the pain relief options; (c) felt their providers *supported* their autonomous choice without pressure or coercion; (d) were *certain* about whether or not to receive epidural analgesia; (e) were able to make an *effective decision* that resulted in a behaviorally applied outcome that aligned with their needs, preferences, and values; and (f) perceived that their legal and ethical *rights* related to informed decision making were honored.

The matching provider version of the modified DCS contains the same number of items and subscales as the patient version. It measures providers' perceptions of their patient's experience of informed decision making and their professional role related to the decision-making process by assessing the degree to which they (a) perceived the patient was *informed* about the risks, benefits, and alternatives

of care; (b) were clear about the patient's *values* regarding the risks and benefits related to the pain relief options; (c) *supported* the patient's ability to make an autonomous choice without pressure or coercion from self or other providers; (d) perceived the patient felt *certainty* about deciding whether or not to receive epidural analgesia; (e) perceived the patient made an *effective decision* that resulted in a behaviorally applied outcome that aligned with her needs, preferences, and values; and (f) honored the patient's legal and ethical *rights* related to informed decision making.

The modified DCS was scored using the same formula as the original DCS, however with six rather than five subscales. Participants had the option to select their degree of agreement or disagreement on a 5-point Likert scale. Each subscale item was summed, divided by the number of items within the subscale, and then multiplied by 25 to produce a score ranging from 0 to 100 (100 equals the highest subscale value). All of the items within the scale were also summed, divided by the total number of items, and then multiplied by 25 to determine the overall informed decision making (IDM) score (ranging from 0 to 100). The higher the score, the greater the degree of informed decision making. The Cronbach's alpha coefficient was 0.88 for the nine statement items added to the modified DCS (the sixth subscale) and 0.91 for all items within the questionnaire, indicating high internal consistency.

RESULTS

Epidural analgesia was administered to most women according to patient self-reports (71.4%) and provider recollection (78.9%). There were no statistically

significant differences between patients and providers in terms of the type of pain relief used or administered by the provider. A fraction of patients and providers reported use of other pain relief medications; however, the sample size was too small to determine if different pain relief options, including nonmedical methods, influenced perceptions of informed decision making.

A two independent samples comparison of means was conducted on patient and provider (nurses and OB-GYNs combined) mean IDM scores to analyze potential differences in perceptions of informed decision making. The patient mean total IDM score was 79.41 ($SD = 10.94$), significantly lower than the provider mean IDM score of 84.97 ($SD = 12.74$), $t(85) = 2.11, p = .04$, two-tailed. However, within the six subscales, only that regarding patient's rights was statistically significant (mean score for patients = 71.73 [$SD = 17.57$], mean score for providers = 85.95 [$SD = 16.21$], $t[85] = 3.88, p < .01$).

This issue was further explored by the use of a one-way ANOVA to determine whether there was evidence of differences among the three groups—patients, nurses, and OB-GYNs—in their perceptions of the extent of informed decision making. Results are shown in Table 3. IDM scores approached statistical significance, $F(2, 84) = 2.51, p = .09$. Significant differences were found among the subscale scores of support $F(2, 84) = 4.74, p = .01$ and patients' rights $F(2, 84) = 7.49, p < .01$.

Because of the inclusion of three groups, additional post hoc analyses (Tukey tests) were possible. The significant difference in support subscale scores was found to indicate that OB-GYNs ($M = 93.40, SD = 9.51$) perceived that patients were provided

TABLE 3
Univariate Analyses of Variance of Patient, Nurse, and OB-GYN Subscale Scores

Subscale	Patients ^a	Nurses ^b	OB-GYNs ^c	<i>F</i>	<i>p</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
Informed	85.00 (14.82)	87.80 (15.30)	90.63 (13.30)	1.07	.35
Values	86.43 (11.49)	83.26 (15.50)	81.51 (18.75)	0.82	.45
Support	80.95 (18.25)	80.36 (20.69)	93.40 (9.51)	4.74	.01
Certainty	79.11 (18.69)	79.24 (18.00)	82.82 (14.31)	0.38	.68
Effective	84.64 (12.16)	81.92 (17.38)	89.06 (11.84)	1.71	.19
Patients' rights	71.73 (17.57)	86.61 (14.99)	85.19 (17.83)	7.49	.00
Total IDM score	79.41 (10.94)	83.76 (13.88)	86.36 (11.40)	2.51	.09

Note. OB-GYNs = obstetrician-gynecologists; IDM = informed decision making.

^a*n* = 35.

^b*n* = 28.

^c*n* = 24.

with a greater degree of support than patients perceived ($M = 80.95$, $SD = 18.25$), ($p = .02$). Statistically significant differences also were found in the patients' rights scores between patients ($M = 71.73$, $SD = 17.57$) and OB-GYNs ($M = 85.19$, $SD = 17.83$), ($p = .01$) and between patients ($M = 71.73$, $SD = 17.57$) and nurses ($M = 86.61$, $SD = 14.99$), ($p < .01$). These results suggest that both professional groups independently perceived that patients' rights were upheld more than patients perceived their rights were upheld.

DISCUSSION AND CONCLUSION

Discussion

Patient perceptions of the degree to which they experienced informed decision making regarding their use of epidural analgesia for pain relief during labor were different than provider perceptions. Providers were more likely to recall they upheld the rights of women to make informed decisions than women were to perceive their rights had been upheld. The domain associated with patients' rights in the modified DCS showed the greatest difference when providers were considered collectively rather than separated by provider type (OB-GYN or nurse).

Although patients and providers alike perceived a rather high degree of informed decision making, the incongruity found between the parties' perceptions echoes similar findings of divergence in stakeholder preferences and expectations (Bruera, Sweeney, Calder, Palmer, & Benisch-Tolley, 2001; Declercq et al., 2013; Jung et al., 1997; Levy, 1999b; O'Cathain, Walters, Nicholl, Thomas, & Kirkham, 2002; Rothenbacher, Lutz, & Porzsolt, 1997), thus suggesting an overarching trend of difference between patients and providers regarding health-care decision making.

The findings are limited to one region, and the difference in patient and provider perceptions of informed decision making is based on a patient sample in which most women were White, English-literate, highly educated, and in a marital relationship. This may have actually resulted in an understated difference between patients and providers in perceptions of informed decision-making experiences. It is possible that patients who are disadvantaged through lower levels of education and from non-English-speaking backgrounds would encounter greater challenges regarding informed decision making. Therefore, a more pronounced gap may exist between stakeholders' perceptions in other areas and

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populations within the United States and should be explored in future research.

The ability to match providers with their patients would also provide stronger evidence of the degree of perception imbalance about informed decision making. Despite the limitation in this pragmatic design, the decision-making encounters examined in this study are still representative of each individual reflection on an experience of decision making regarding epidural analgesia use and provide insight into where improvements in the process of decision support can be made. Qualitative research focused on stakeholder perceptions regarding the barriers related to informed decision making during maternity care, as well as successful strategies to mitigate these challenges are suggested, to generate a broader and contextual understanding of the differences found between patient and provider perceptions.

Evidence from recent research indicates that providers do not implement informed choice principles into practice because of various nonclinical factors. For example, a study investigating the choices related to epidural analgesia use found that a woman's decision was correlated with the place of care (e.g., public, private, teaching hospital, and maternity unit size; Le Ray, Goffinet, Palot, Garel, & Blondel, 2008). Only when a woman shared her provider's preferences or the facility's policies did her preferences regarding the use of epidural analgesia come to fruition. Similar outcomes have been identified in other research about pregnancy decision making related to mode of delivery (Shorten et al., 2005). These findings underscore the influential role of the climate and culture of choice within models of maternity care on the process of informed decision making.

Contrary to suggestions that providers have inadequate educational support for developing skills that foster patient decision making, a recent study of decision making and fetal heart monitoring in the United Kingdom found that midwives sufficiently understood informed choice but did not implement informed decision-making principles into their practice (Hindley & Thomson, 2005). Providers will have personal preferences for use of epidural analgesia and may direct women along a decision path

that suits their preferences rather than the needs of individual women.

Differences regarding perceptions of informed decision making may also be a result of the high usage rates of epidural analgesia in the United States (67%; Declercq et al., 2013) and in this study (71%–79%). It would be easy for providers to identify commonly used interventions such as epidural analgesia for labor pain as “routine care,” and assume widespread knowledge and acceptance by women, rather than seeing its use as a situation for an explicit informed decision-making process.

Conclusion

The primary aim of this study was to determine whether there was a difference between patient and provider perceptions of informed decision making regarding use of epidural analgesia for pain relief in labor. Despite the fact that patients and providers were not matched, there was indeed a difference between the degree to which patients and providers perceived informed decision making occurred.

PRACTICE IMPLICATIONS

The differences found between patient and provider perceptions of informed decision making regarding the use of epidural analgesia suggest reason to question the process supporting informed choice during childbirth and the mechanisms that are in place to safeguard patients’ rights. The practice implications associated with these findings are worth considering in light of the mounting public and professional concern surrounding current obstetric care and perinatal outcomes within the United States.

Childbirth educators (CBEs) play a key role in reducing disparities in informed decision making by preemptively supporting patients’ understanding of their pain relief options as well as the process of informed decision making. The delivery of information and decision-making support by CBEs is recommended as a way to fill the gap in what nurses and OB-GYNs can offer given the constraints of their roles. CBEs are ideally positioned to empower

mothers to make informed decisions by facilitating patient comprehension of the risks, benefits, and alternatives of epidural analgesia use (as well as other care options) during pregnancy, prior to when women need such relief. It is in this environment—absent from the potential stress of labor pain, fatigue, and varying emotions—that CBEs can help women dissect their individual beliefs, values, and preferences and adequately prepare for the pain relief decisions they will face. In addition to delivering information about epidural analgesia use, CBEs are encouraged to impart information about how to engage in a constructive decision-making dialogue with providers to maximize the experience of making informed childbirth choices. Unfortunately, participation in childbirth education classes by new mothers has decreased over the past decade by 11% (Declercq et al., 2013), therefore necessitating added support from providers to help patients access prenatal education programs and to identify reliable information resources that supplement provider consultations.

Providers are encouraged to reflect on their approach to supporting women who face decisions about epidural analgesia and perhaps other labor interventions. It is important for health-care professionals to explore decision support methods that ensure patient access to, awareness, and comprehension of the benefits, risks, and alternatives of labor care and to confirm that decisions are consistent with patient needs. Assessment of patients’ knowledge and understanding of information is recommended in place of assumptions related to retention and comprehension, even though epidural analgesia is commonly used in the United States. Lastly, it is suggested that providers are sensitive to their roles and responsibilities around informed consent and their influence on women’s childbirth choices and experiences.

Likewise, patients are encouraged to take responsibility for their labor plans; know their decision-making rights; seek information; understand the risks, benefits, and alternatives of care; ask questions; and communicate their preferences and values. It is equally important for patients to purposefully choose trusted health-care providers who will advocate to support informed choices (even if that choice is to not make a decision or to not be involved in the decision-making process). In addition, selecting providers who offer continuity of care throughout pregnancy and the postpartum period is suggested. Given the climate of care and underuse of childbirth

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classes, it is also recommended that patients consider the benefits of hiring a doula to provide additional information and support during their prenatal, childbirth, and postpartum experiences.

Improving conditions for patients to make autonomous, informed choices on behalf of themselves and their children based on complete, objective, and comprehensible evidence-based information regarding the risks, benefits, and alternatives of care could impact the pain relief choices that are being made as well as maternal and child outcomes (Green & Baston, 2003; Green, Coupland, & Kitzinger, 1990; Harrison, Kushner, Benzies, Rempel, & Kimak, 2003; Jomeen & Martin, 2008). Models of care that provide continuity of care present an opportunity to ensure consistency between prenatal choices and labor outcomes.

The study results highlight the need to align legal and ethical principles regarding informed decision making with practice protocols to create mutual agreement between stakeholder perceptions of informed decision making within a specific, real-life maternity care choice. Improving the process of informed decision making during childbirth so patient and provider perceptions align with bio-ethical regulations is a complex yet critical endeavor. Congruency between patient and provider perceptions would be an important future quality indicator that patients' rights regarding informed decision making are effectively in place.

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