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# *Childbirth Education Outcomes: An Integrative Review of the Literature*

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## **Abstract**

The purpose of this literature review was to identify and describe recent empirical studies of childbirth education outcomes and to identify areas for further study. The search produced 63 studies; only 12 met the inclusion criteria. The literature demonstrated inconclusive evidence regarding the effectiveness of childbirth education. None of the studies used a theoretical framework that proposed multiple factors, as opposed to childbirth education alone, that impact the outcomes. Health-focused versus illness-focused outcomes were also addressed.

*Journal of Perinatal Education, 11(3), 10–19; outcomes, quality of care, evaluation, childbirth education.*

Childbirth education has existed as a formal structure in this country since the 1960s and has provided preparation for childbirth with a focus on “natural” birth. Over time, the classes have continued to evolve but the underlying purpose remains the same: to provide prenatal preparation for pregnancy, labor, and birth. Recent literature suggests that childbirth education has been historically evaluated in terms of outcomes that do not necessarily demonstrate the value of such programs (Humenick, 2000; Sims-Jones, Graham, Crowe, Nigro, & McLean, 1998; Thassri et al., 2000). As O’Meara (1993) pointed out, a basic requirement of childbirth education evaluation is the ability to measure its contribution to health and well-being, and to generate information that will guide current methods. Therefore, the purpose of this review is to identify and describe the recent empirical studies of childbirth education outcomes and to identify the gaps that need further study.

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## Methods

### Conceptual Framework

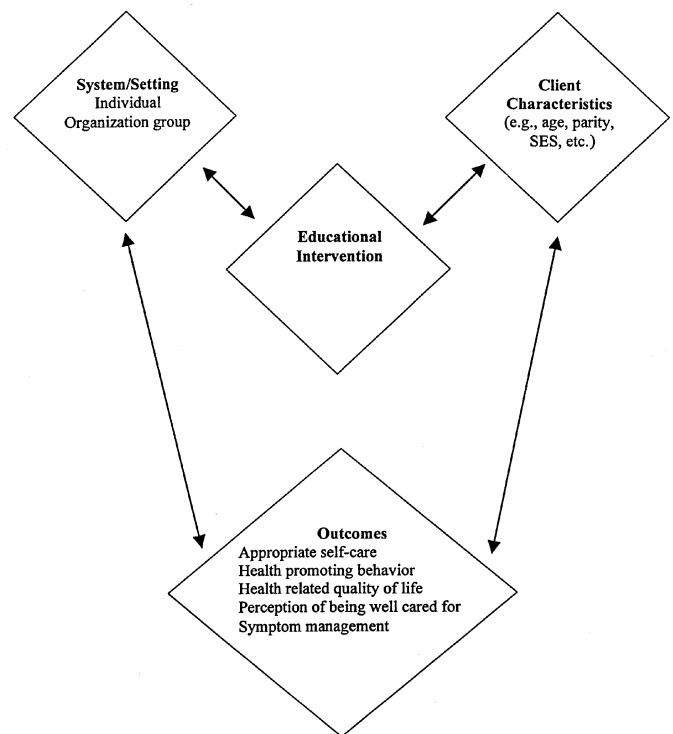
According to Humenick (2000), three decades of childbirth education outcomes research have been guided by Donabedian's (1988/1997) model: structure, process, and outcomes. The outcomes of childbirth education have often been reported in terms of "whether it produced less death (infant mortality), less disability (pre-term birth), and less discomfort (labor pain)" (Humenick, 2000, p. 595). Humenick has recommended outcomes research guided by the Interactive Quality Health Education Outcomes Model (IQHEOM), a model based on the work of Mitchell, Ferketich, and Jennings (1998) (see Figure). This model proposes that any educational intervention affects and is affected by participants and the settings or agencies. That is, no single intervention (i.e., childbirth education) will produce the outcome independently. The influence of the labor care providers and their philosophy are a critical variable in how couples apply aspects of their childbirth education. These important variables have generally not been addressed in research of childbirth education outcomes. Nolan (2000) concurred that nearly all empirical studies have treated attendance at childbirth education classes as a "single, uniform intervention" (p. 25). The IQHEOM suggested by Humenick (2000) addresses the above variables and proposes additional health-focused outcomes beyond birth experiences (e.g., influences on self-care and health-promoting behaviors, health related quality of life, the perception of being well cared for, and symptom management), which would potentially demonstrate a strength of childbirth education. In part, this model guided this review in that, as the model suggests, the outcomes considered were broad and included those that were wellness oriented in scope, where they existed. However, no type of outcome literature was excluded. Thus, the analysis was based on characteristics

of existing literature rather than being limited to the categories of the IQHEOM.

### Search and Review

This review was conducted via electronic search through MEDLINE, CINAHL, PSYC INFO, and Sociological Abstracts. The search period was restricted to 1995–2001 studies in English. Keywords for the search included *outcomes*, *quality of care*, *evaluation*, and *childbirth education*.

The electronic search produced 54 articles. A manual search of references produced an additional nine articles. Relevance criteria of the search included the following: (a) studies using either quantitative or qualitative methodology, (b) studies with childbirth education classes as an intervention, (c) studies that aimed to demonstrate the effectiveness of childbirth education, and (d) studies



**Figure** Interactive Quality Health Education Outcomes Model

This figure is based on concepts from P. Mitchell, S. Ferketich, and B. Jennings, (1998). *Quality health outcomes model*. IMAGE: Journal of Nursing Scholarship, 30, 43–46. (Nichols & Humenick, 2000, p. 596.)

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## Childbirth Education Outcomes: An Integrative Review of the Literature

**Table 1** Overview of Childbirth Education Evaluation Studies

Study	Method/Framework	Sample Characteristics & Data Collection	Outcomes/Findings
Bechelmayr (1995)	Pre-post quasi-experimental Dick-Read, Lamaze, Bradley, and "Support = Less Anxiety"	N = 35; 3rd trimester; attended at least 4 classes; 29-40 weeks Spielberger's State-Trait Anxiety Inventory	<b>Anxiety.</b> Significant difference
Beger & Beaman (1996)	Descriptive None stated	N = 134, "Childbirth classes"—hospital, survey, Likert-type scale	<b>Educational Needs.</b> Parents: Info regarding pregnancy/fetus; nutrition; infant; Preferred lecture. Educators: Tour; Preferred role play
Hallgren et al. (1995)	Qualitative Antonovsky: Concept of Sense of Coherence	N = 7 "Antenatal classes" with midwives Three interviews with each participant	<b>Perceptions of childbirth before and after education.</b> More positive at end of class; need more content on parenting; did not meet the needs of all the women; Fear blocked acquisition of new knowledge
Handfield & Bell (1995)	Descriptive None stated	N = 59 1 session early pregnancy; 4 sessions third trimester Original questionnaire	<b>Decision-making.</b> Classes influence pain medication (52.5%); Breastfeeding (10.2%); Length of stay (52.5%)—but classes not helpful for this variable
Hart (1995)	Descriptive None stated	N = 119 6 weeks "Childbirth Ed" classes Labor Delivery Evaluation Scale; Labor Agency Scale; Delivery Agency Scale	<b>Couples' perceptions of labor and delivery.</b> Mothers scored lower than fathers; only significant difference Labor Agency Scale
Jackson (1995)	Ex-post-facto Pender's Health Promotion Model	N = 60 "Childbirth Ed classes"—Unequal groups (16 in CB Ed; 44 no classes). Health Promotion Lifestyle Profile (Pender); Birth weight	<b>Birth weight; health promotion behaviors.</b> NS difference in birth weight; CB Ed group scored higher on Total score, self-actualization, Health responsibility, Exercise, Nutrition, Interpersonal support. No control for previous healthy behaviors
Johnston-Robledo (1998)	Descriptive None stated	N = 45, "Childbirth Ed classes," Convenience, L/D Information Measure, Childbirth Prep Measure, L/D Evaluation Scale, Labor Agency Scale	<b>Pain perception, Level of preparedness, Satisfaction, Perceived control.</b> Compared higher and lower income women; CB prep NS, Lower income less likely to attend; Control & Satisfaction NS; Preparation not associated with outcomes
Sims-Jones et al. (1998)	Descriptive None stated	N = 291, Canada, "Early pregnancy classes," Self-completed questionnaires	<b>Change in lifestyle behavior, Feelings of confidence, Interest in content area, Interest in content by partner.</b> Some behavioral change, most no change; 75% increased confidence; Interested in all topics; Significant difference between woman and partner
Smedley (1999)	Descriptive None stated	N = 127, Australia, 9 classes (8 pre-, 1 post-), Nonrandom, Questionnaires	<b>Attitudes, Course Content.</b> More positive at end of class (NS); 75% positive regarding labor postnatal; need more content on parenting
Spiby et al. (1999)	Exploratory/ Convenience None stated	N = 121, United Kingdom, 5 "antenatal sessions," Questionnaires, Narrative	<b>Use of coping strategies, Confidence, Amount of Practice.</b> 88% "sighing out" breathing, 51% postural change, 40% relaxation, 4%–5% extremely confident, 62%–76% fairly confident, 46% insufficient practice in class, 84% practiced outside of class
Stamler (1998)	Qualitative Knowles, adult education; Stamler, enablement	N = 7, Canada, 6- or 8-week classes, Semi-structured interviews	<b>Goals for attending, satisfaction with completing the birth process.</b> Info/prep; Anxiety/relaxation; Control; husband participation; Socialization; Well prepared for normal birth; Not prepared for unexpected

Table 1 Continued

Study	Method/Framework	Sample Characteristics & Data Collection	Outcomes/Findings
Thassri et al. (2000)	Qualitative Participation Action Research	N = 214, Thailand, "Health Ed Program," In-depth Interviews	<i>Behavior change, Satisfaction with topics.</i> Significant change in prenatal behaviors (preparation for pregnancy, breastfeeding, postpartum). Moderate to high satisfaction with topics (preparation for pregnancy, nutrition, breastfeeding, delivery), except low satisfaction with preparation for postpartum topic

congruent with the breadth of the IQHEOM. Studies were excluded from the review if a specific coping strategy was the intervention, as opposed to education classes as a whole. As a result, 12 studies were identified that met the inclusion/exclusion criteria for review.

### Critique Format

The critique format used Petersen and White's (1989) and Ganong's (1987) guidelines for reviewing literature. Refer to Table 1 for an overview of the studies included.

## Review of Studies

### Hypotheses, Objectives, and Questions

All but one of the 12 studies were nonexperimental in design; therefore, most had research questions, objectives/aims, or implied research questions instead of hypotheses. Five outcomes categories were identified:

1. *Health promotion behaviors.* Three of the 12 studies specified health promotion behaviors as the focus. Jackson (1995) addressed differences in infant birth weight and maternal health promotion behaviors. Sims-Jones et al. (1998) also focused on the impact of classes to prevent low birth weight, including smoking cessation, nutrition, physical activity, and stress reduction. The third study, Thassri et al. (2000) hypothesized that health education could help prevent complications.
2. *Influences on self-care.* Two of the 12 studies investigated the influence of childbirth education on self-care issues. Handfield and Bell (1995) investigated whether or not childbirth education influ-

enced decision-making, while Stamler (1998) asked if childbirth education classes were enabling or nonenabling.

3. *Perceptions related to birth.* Four of the 12 studies (Hallgren, Kihlgren, Norberg, & Forslin, 1995; Hart, 1995; Johnston-Robledo, 1998; Spiby, Henderson, Slade, Escott, & Fraser, 1999) investigated aspects of the birth experience: satisfaction with the birth experience, impact on pain perception, and implementation of coping strategies. Additionally, they studied perception of classes.
4. *Class curriculum.* In two of the 12 studies (Beger & Beaman, 1996; Smedley, 1999), the primary focus was a survey of participants for their input on what is needed in classes. In addition, Beger and Beaman (1996) addressed the differences between parent and educator perceptions of needed course content and teaching/learning methods.
5. *Impact on coping.* The final study, Bechelmayer (1995) specifically investigated the impact of childbirth preparation on anxiety levels of the participants. This was the only study that was quasi-experimental in design.

### Theoretical Frameworks

Only five of the 12 studies identified a specific theoretical framework that guided the study. The following were used: (a) Participatory Action Research (Thassri et al., 2000), (b) Knowles' Adult Education Model (Stamler, 1998), Antonovsky's Concept Sense of Coherence (Hallgren et al., 1995), Pender's Health Promotion Model (Jackson, 1995), and Education and Support equals Less Anxiety (Bechelmayer, 1995). Although it was implied

that childbirth education should produce an outcome, none of the studies identified any additional influencing factors on the classes or other influencing factors on the participants. Thus, although not stated, it appeared that all of these studies were guided by the traditional structure, process, outcomes model (Donabedian, 1988/1997).

### *Samples and Settings*

All of the studies used convenience sampling except for the three qualitative studies (Hallgren et al., 1995; Stamler, 1998; Thassri et al., 2000) that used purposive sampling, appropriate for this methodology. The number of subjects in these three qualitative studies ranged from 7 (Hallgren et al., 1995) to 214 (Thassri et al., 2000). Excluding these qualitative studies, the number of subjects in each of the studies ranged from 35 (Bechelmayer, 1995) to 291 (Sims-Jones et al., 1998).

The IQHEOM proposes that both class settings and class participants are influential on the education process and on outcomes; therefore, they are important to consider in health education evaluations. Overall, only minimal descriptive information existed regarding the structure and content of the classes. Bechelmayer (1995) was the most descriptive, stating that the sample included couples who had attended at least four childbirth education classes during the 29th–40th week of pregnancy. The content of these classes was structured according to Lamaze International guidelines and all instructors of the classes were certified as Lamaze Certified Childbirth Educators or LCCEs. Only four other studies stated the number of class sessions: (a) Hart (1995), six weeks; (b) Handfield and Bell (1995), one session early pregnancy and four sessions in the third trimester; (c) Smedley (1999), eight sessions prenatal with one session postnatal; and (d) Stamler (1998), six or eight weeks. Sims-Jones et al. (1998) described the setting only as early

pregnancy classes. The classes in the remainder of the studies were referred to as a health education program (Thassri et al., 2000), antenatal sessions (Hallgren et al., 1995; Spiby et al., 1999), and childbirth education classes (Beger & Beaman, 1996; Jackson, 1995; Johnston-Robledo, 1998).

Bechelmayer (1995) was the only study that was specific regarding consistency with instructor qualifications, all being LCCEs. Beger and Beaman (1996) stated that six of the seven instructors in the study were RNs and that four of these were LCCEs. Midwives taught the classes in Hallgren et al.'s (1995) study, while Smedley (1999) stated that the instructors came from "a range of backgrounds" (p. 19) as health professionals. The remaining studies did not clearly identify the instructors.

Six of the 12 studies cited hospital-based programs as the setting for classes (Beger & Beaman, 1996; Handfield & Bell, 1995; Hart, 1995; Jackson, 1995; Spiby, et al., 1999; Thassri et al., 2000). Johnston-Robledo (1998), Sims-Jones et al. (1998), and Stamler (1998) described community-based programs, while the remaining studies did not state the setting for the study. In summary, the contribution that settings and samples make to program outcomes is not discernable across studies.

### *Methodologies*

Three studies used qualitative methodologies: Hallgren et al. (1995), Stamler (1998), and Thassri et al. (2000). Bechelmayer's (1995) study, quasi-experimental in design, used a pre-test, post-test method. The remaining studies were all descriptive. A mixture of qualitative and quantitative studies adds richness and understanding. In this field, however, no evidence exists that, to date, their findings have been integrated to build upon each other in the development of systematic knowledge.

### *Measurement*

Hart (1995) and Johnston-Robledo (1998) both used Humenick and Bugen's (1981) Labor and Delivery Evaluation Scale. Hart also used Humenick and Bugen's (1981) Labor Agency Scale and Delivery Agency Scale. On the other hand, Johnston-Robledo used Hodnett and Simmons-Tropea's Labor Agency Scale. Although Johnston-Robledo reported previous Cronbach's alphas as

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well as reliability estimates for this study, Hart only reported alpha coefficients for the current study. Bechelmayer (1995) and Jackson (1995) used Spielberger's State-Trait Anxiety Inventory and Pender's Health Promotion Lifestyle Profile, respectively. These researchers also provided previous reliability estimates for each of these instruments. The remaining studies reported researcher-developed questionnaires or interview questions. Beger and Beaman (1996) indicated that the instrument's author gave permission to use the instrument, but the report lacked clarity as to the instrument's original development. Four quantitative studies used previously developed instruments while the remaining relied on instruments that had not been previously tested. Thus, no evidence exists that tools have been developed and widely used in the evaluation of childbirth education outcomes.

### *Analyses*

The quantitative descriptive studies mostly relied on (a) percentages, means, and/or standard deviations (Sims-Jones, 1998; Smedley, 1999; Spiby et al., 1999), (b) descriptive statistics indicating group differences such as the t-test (Bechelmayer, 1995; Beger & Beaman, 1996; Jackson, 1995), ANOVA (Hart, 1995), chi-square (Handfield & Bell, 1995), Wilks' Lambda (Johnston-Robledo, 1998), or (c) correlation (Johnston-Robledo, 1998). These analyses are important for the research design; however, small studies with convenience sampling limit generalizations of the findings.

All three qualitative studies included specific quotations from the participants that exemplified the themes that had been determined. All three also addressed reliability and validity issues associated with the methodology. For example, Stamler (1998) reported, "In addition to the validation of data with each patient during subsequent interviews, rigour was addressed by the use of content experts for confirmation of analysis" (p. 942). Thassri et al. (2000) provided considerable explanatory information regarding the methods, including analysis techniques, associated with Participatory Action Research. Similarly, Hallgren et al. (1995) included an analysis section describing the techniques used to arrive at their findings. Thus, the qualitative studies reviewed showed consistency in reporting the analysis techniques used.

### *Findings*

Overall, the findings of these 12 studies were diverse. The findings are presented according to the categories suggested by the research questions/objectives.

1. *Health promotion behaviors.* The three studies that investigated health promotion outcomes all suggested a positive change in some health behaviors. In Jackson's (1995) study, the women who had attended classes scored significantly higher than the women who had not attended classes in the areas of self-actualization, health responsibility, exercise, nutrition, and interpersonal support. It is important to note that, in this study, the two groups were considerably different in size: 16 women had attended childbirth education classes whereas 44 women had not attended. The study design did not control for previous use of healthy lifestyle behaviors. Sims-Jones et al. (1998) also found some changes in lifestyle behavior. The participants reported the behaviors that indicated the greatest amount of change were communication with partner (51.2%) and relaxation (47.4%). Additional findings demonstrated that 75.9% felt their confidence for labor and birth had increased and that 91.4% would recommend the prenatal classes to a friend. The third study, Thassri et al. (2000), reported a significant change in behaviors related to preparation for labor and birth, breastfeeding, and postpartum period, but not in nutritional habits. The researchers suggested that the explanation for this was the traditional beliefs and food habits of this particular population (i.e., eating meat causes difficulties in the birth process due to large babies). In summary, there is some evidence of health promotion outcomes associated with childbirth education; however, there is no

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evidence that these are being studied in a systematic or comprehensive way across studies.

2. *Influences on self-care.* Handfield and Bell (1995) found that classes had minimal effect on opinions about breastfeeding: 10.2% of the subjects changed their opinion because of the classes and length of hospital stay, and 52.5% changed their opinion but stated that classes were not helpful in doing so. On the other hand, 52.5% reported that the information on pain medication had influenced their decisions about pain relief. Important to this review, Handfield and Bell (1995)—consistent with the IQHEOM—concluded that evaluation of childbirth education is complicated because it is difficult for the participants or researchers to separate out influences of other interactions or services. Stamler's qualitative study (1998) found diversity in terms of enabling or nonenabling for birth. That is, three women believed themselves as enabled for the birth experience, one was ambivalent, and three were not satisfied with the birth experience. More specifically, the women all believed they were prepared for a normal vaginal birth but not for the unexpected. Thus, although there is potential to study many aspects of self-care as a childbirth education outcome, there is no evidence that the potential categories have been identified or used in any systematic way.
3. *Perceptions related to birth.* Studies in this category measured various outcomes and used various methods of analyses, thus once again making it difficult to compare the results. Johnston-Robledo (1998) investigated the difference between lower and higher income women and found no significant differences on perceived control, satisfaction with the birth experience, pain perception, and use of pain medication. No significant correlation was found between childbirth preparation and these outcomes. On the other hand, Hart (1995) investigated differences between women and their partners. The only significant difference was on Humenick and Bugen's (1981) Labor Agency Scale that measured the couples' perceptions of the first stage of labor, with fathers having a more positive viewpoint. Hallgren et al.'s (1995) qualitative study found that participants were more positive

at the end of classes about the birth experience. Finally, Spiby et al. (1999) similarly found that, after classes, 4%–5% of the women felt extremely confident while 62%–76% felt fairly confident. This study also addressed how many women used one of three coping strategies in labor: “sighing out” breathing, 88%; postural change, 51%; and relaxation, 40%. This study differed from Hallgren et al. in that it was conducted after the birth. In summary, although preparing to confidently cope with the rigors of childbirth is a primary purpose of such classes, again one finds that the agency tools developed to measure this purpose were only rarely used in recent studies. Additionally, the evaluation of the specific tools women found to be helpful are rarely evaluated.

4. *Class curriculum.* Smedley (1999) reported percentages and concluded that the class participants were positive towards the classes, but more content on parenting was needed. Beger and Beaman (1996) found a significant difference between parents and educators' priorities in terms of educational topics. The parents rated information regarding pregnancy/fetus, nutrition, and infant care the highest while the educators rated the tour as the highest priority. Thus, evidence rarely exists that, in the recent evaluation studies of childbirth education as an intervention, attention is on evaluating the specific content of that intervention.
5. *Impact on coping.* Bechelmayr (1995) specifically measured anxiety as the dependent variable. The study of 35 subjects demonstrated significant differences between pre- and post-class tests of anxiety. There was no evidence that outcomes such as anxiety are linked to measurements of confidence.

## Discussion

The health care community and public have accepted childbirth education for some time, yet the recent childbirth education outcome literature continues to demonstrate mixed results regarding its effectiveness. As a group, these recent studies are so different and flawed that they really cannot be used to draw any conclusions about childbirth education. Not only do methodologies differ, but also considerable diversity exists in the out-

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comes that are measured. This review verifies what both Humenick (2000) and Nolan (2000) stated in that studies have treated attendance at classes as a single intervention. None of these 12 studies addressed other variables that may impact the effectiveness of childbirth education.

Methodological issues were clearly evident. One was with sampling/setting issues, including lack of information on the timing and content of the classes as well as the instructor qualifications. Thus, implications exist for internal validity (Petersen & White, 1989).

Furthermore, these studies were conducted in seven different countries: Australia (Smedley, 1999); Canada (Sims-Jones et al., 1998; Stamler, 1998); Thailand (Thassri et al., 2000); United Kingdom (Spiby et al., 1999); and the United States (Bechelmayer, 1995; Beger & Beaman, 1996; Hallgren et al., 1995; Handfield & Bell, 1995; Hart, 1995; Jackson, 1995; Johnston-Robledo, 1998). Due to differing health care systems across countries and continents, the characteristics of class structure, instructors, and childbirth philosophies add to setting variability.

A second issue is that of sampling. All of the reviewed descriptive studies used convenience sampling and, therefore, threaten the ability to generalize. It should be questioned whether or not it is ethically appropriate to randomly assign subjects to a childbirth education class. Furthermore, it may be difficult to locate a population where persons are willing to participate in random assignments. Thus, it is important to examine strategies that can address this sampling issue.

Another methodological issue across these studies was measurement. The qualitative studies did address reliability issues according to appropriate qualitative research methods (Hallgren et al., 1995; Stamler, 1998; Thassri et al., 2000). Among the quantitative research, numerous studies used researcher-developed questionnaires, some of which had minimal or no pretesting for reliability and validity. Only three studies met Peterson and White's (1989) criteria of "fully adequate" for adequacy of measures/instruments (Hart, 1995; Jackson, 1995; Johnston-

Robledo, 1998). These criteria should be more widely recognized and used (see Table 2).

Only five studies identified a theoretical framework (Bechelmayer, 1995; Hallgren et al., 1995; Jackson, 1995; Stamler, 1998; Thassri et al., 2000). The use of such frameworks guides researchers in selection of variables to be measured. As attention is paid to which frameworks operate well in studying outcomes of childbirth education, studies can become more consistent and collectively can better advance knowledge about the field. In turn, childbirth education can become increasingly evidence-based.

Finally, five studies did identify influences on health behaviors or self-care. Although the reviewed studies did not consider other factors impacting on childbirth education, it was encouraging that researchers have identified the need to study variables other than those associated with an illness/disease orientation.

## Recommendations and Implications

Findings of this review suggest important weaknesses in the recent literature on the study of childbirth education outcomes; thus, continued advancement of knowledge about the field is not occurring in an effective manner. Recommendations for future research that addresses these weaknesses are presented below.

### *First Recommendation*

Conduct studies guided by a model that expects and accounts for input differences in client motivation, birth

**Table 2** Criteria for Adequacy of Measures/Instruments\*

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Definition of "Fully Adequate" Rating
Measures/measurement instruments are sufficiently valid and reliable (e.g., interrater agreement, test-retest reliability):
• Standard instruments with previously reported validity and reliability
or
• New instruments with accompanying documentation of validity and reliability

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\* Petersen, M. D., & White, D. L. (1989). An information synthesis approach to reviewing the literature. In M. D. Petersen & D. L. White (Eds.), *Health care and the elderly: An information sourcebook* (pp. 557). Newbury Park, CA: Sage.



attendant philosophies, attitudes and practices of obstetrical caregivers, and other factors that influence a woman's perception of childbirth (Humenick, 2000; Nichols, 1996; Shearer, 1990). Although these variables will continue to vary widely across settings, it is critical to categorize and/or level each of these variables with operational definitions so they can be compared across studies.

### ***Second Recommendation***

Conduct studies that include health-focused outcomes, as called for in the IQHEOM, as opposed to being limited to illness-focused outcomes (Humenick, 2000; Nichols & Gennaro, 2000). This is important because, in former decades of research, birth satisfaction and perception in control or mastery were frequently found to be an outcome of childbirth education evaluation studies (Gennaro, 1988). Yet, in the absence of biological advantages, the outcomes of satisfaction and mastery have not always been valued as important variables in and of themselves.

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### ***Third Recommendation***

Conduct studies that operationally define the measures of health-focused outcomes and the continued development and use of tools that measure these outcomes.

### ***Fourth Recommendation***

Establish standardization/categorization of the intervention of childbirth education. Variations will always appear in education and content. It is important to our knowledge development in the field to have an operationally defined set of terms for defining variables.

### ***Fifth Recommendation***

Jones (1983) conducted a statistical meta-analysis of 58 studies that examined the effects of childbirth education

and were published between 1960–1981. (Effect size is a measure of treatment effectiveness based on the statistical difference between a treatment group and a comparison group. It is calculated across studies.) The highest positive effect sizes that Jones found were the following: .40 on maternal fear and anxiety, .48 on women's self-esteem, .39 on the mother's relationship with her infant, and .37 on marital relationships. These are clinically significant effect sizes. The positive effect size associated with medical measures was .30. Generally, much of childbirth education research has been unfunded; thus, small studies predominate. A meta-analysis of studies in the last 20 years is needed so that future knowledge from research can be built upon facts learned from past studies.

### ***Implications***

Using studies such as those described above may demonstrate the current value of childbirth education and, thus, elevate the professional status of childbirth educators (Zwelling, 1996). Furthermore, such studies will help provide research-based direction for future childbirth education. An updated review is an important area: As Zwelling pointed out "the goals of expectant parents today are different from those of parents in the past" (1996, p. 428).

Finally, research in this area has implications for health services research in general. It is an opportunity to test a model that accounts for influences on the process, as well as to test outcomes that are health- and wellness-focused. If the goal of childbirth education is health, then this is an important area of research for promoting not only the value of childbirth education but also that of childbirth educators as health professionals.

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## Meaningful Tasks

*Our love and passion for something makes other people feel love and passion for it. It takes one person who's awake to the possibilities, and everyone they touch will awaken to those possibilities.*

—Jane Hirshfield

Author of *Women in Praise of the Sacred*

*Too much time cannot be spent in a task that is to endure for centuries.*

—Augustus Saint-Gaudens