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## A Systematic Review of Quality of Life Measures in Pregnant and Postpartum Mothers

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### Abstract

Quality of life has emerged as an essential health component that broadens the traditionally narrow concerns focused on only morbidity and life expectancy. Although a growing number of tools to measure quality of life are in circulation, there is a lack of guidelines as well as rigorous assessment for their use with pregnant and postpartum populations. It is also unclear whether these instruments could validly be employed to measure patient-reported outcomes in comparative effectiveness research of maternal care interventions. This paper reviews articles cited in CINAHL, COCHRANE, EMBASE, PSYCINFO, and PUBMED that addressed quality of life in pregnant and postpartum populations. Instruments used to measure quality of life in selected articles were assessed for their adherence to international guidelines for health outcomes instrument development and validation. The authors identified 129 articles that addressed quality of life in pregnant and/or postpartum women. Out of these, only 64 quality (generic and specific) scales were judged relevant to be included in this study. Analysis of measurement scales used in the pregnant and/or postpartum populations revealed important validity, reliability and psychometric inadequacies that negate their use in comparative effectiveness analysis in pregnant and post-partum populations. Valid, reliable, and responsive instruments to measure patient-

reported outcomes in pregnant and postpartum populations are lacking. To demonstrate the effectiveness of various treatment and prevention programs, future research to develop and validate a robust and responsive quality of life measurement scale in pregnant and postpartum populations is needed.

## Keywords

Quality of life; Health related quality of life; Pregnancy; Postpartum; Measurement

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## Introduction

According to the American Pregnancy Association, there are around 60 million women of child-bearing age (15–44 years) in the United States and approximately six million pregnancies annually, resulting in 4,058,000 live births and 1,995,840 pregnancy losses (APA 2012). Furthermore, each year, about 875,000 women experience one or more pregnancy complications, 467,201 babies are born prematurely, 307,030 babies are born with low birth weight, and 154,051 are born with birth defects (APA 2012). Given these statistics, there is a need for the health care system to adopt effective health care interventions that prevent and/or treat these pregnancy and postpartum-related co-morbidities and complications. Women's subjective perception of their health-related quality of life is an essential measure of the quality and effectiveness of maternal and child health interventions.

Health professionals in the field of maternal and child health strive to satisfy their clients with respect to their experience during preconception, conception, pregnancy, birth, and postpartum periods. Although the traditionally used pregnancy and postpartum period outcome measures, such as pregnancy-related morbidity and mortality rates, remain essential, they are no longer adequate on their own because population health should be assessed, not only on the basis of saving lives, but also in terms of improving quality of life (World development report 1993). In the past few decades, the assessment of quality of life (QoL) in clinical trials to investigate relative effectiveness of preventive and treatment programs in pregnant and postpartum women has become increasingly important as mortality and morbidity rates associated with pregnancy and postpartum periods continue to decline (Higginson & Carr 2001). To appropriately measure the effectiveness of interventions related to pregnant and postpartum populations, a reliable (ability to produce same results on repeated trials) (Brunswik 1952), valid (ability to measure what it purports to measure) (Brunswik 1952), and responsive (ability to detect meaningful clinical change, preferably over a relatively short period of time) (HRSA 2010) quality of life measurement scale is needed.

In the absence of validated instruments specific to pregnant and postpartum women, multiple studies measuring quality of life in pregnant and postpartum populations use generic instruments (Hunt et al. 1981; Symon et al. 2002; Andersen 2008). Generic instruments are broad measurement scales, such as the Short Form-36 (SF-36) (Magee et al. 2002), that measure health-related quality of life in diverse patient populations. While such instruments may be reliable, they may not be appropriate to measure quality of life in special populations, like pregnant and/or postpartum women. They may not be sensitive enough to capture small but important treatment or interventions effects and will potentially miss the unique perspectives of women with and without sustained morbidity during pregnancy and postpartum (Chen et al. 2005). Thus, the primary objective of this review is to identify measures used in the literature to assess quality of life in pregnant and/or postpartum populations. The secondary objectives are to systematically evaluate existing pregnancy and/

or postpartum period-specific measures and determine the extent to which they meet internationally established criteria based on guidelines set by the Scientific Advisory Committee of the Medical Outcomes Trust for health-related outcome measures (Scientific Advisory Committee Overview Update Trust's State of the Art Health Outcomes), specification of QoL or HRQoL (health-related quality of life) definition used to develop the instrument (if any), and incorporation of the life course perspective (LCP) (HRSA) or any other relevant theory that guides the scale development process.

This assessment will identify the strengths and weaknesses of measures currently available for this special population and recommend innovative strategies to complement future efforts to develop new pregnancy and postpartum period-specific measures. In section II of this paper, we discuss the definition and theory behind quality of life and health-related quality of life. In section III, we discuss the various types of quality of life measures. In section IV, we discuss the literature search and review the methods used. In section V, we summarize main findings of our review with more emphasis on QoL measurement scales specific to pregnant and postpartum populations. In section VI, we recommend an innovative approach for the development of a new robust scale to measure quality of life in pregnant and postpartum women, and section VII concludes the paper.

## Quality of Life: Definition and Theory

In the past five decades the concept of quality of life (QoL) has been increasingly used by researchers, mainly in the health care field (Taillefer et al. 2003). However, a common understanding of the definition, its dimensions, and how to measure it is lacking (Farquhar 1995). The operational definition of QoL across researchers has been inconsistent, based on the perspective considered (societal or individualistic), theoretical model applied, and academic orientation (Brady et al. 1997; Spieth & Harris 1996). Some definitions focus on health and well-being or the ability to function, while others emphasize either satisfaction or achievement.

One definition by the World Health Organization (WHO) describes QoL as “the individual’s perception of their life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns” (WHOQoL Group 1994). This definition portrays QoL as spanning a set of valued states of existence. In this regard, health is one of the most valued qualities of existence, along with life satisfaction and well-being. Health as an essential component of quality of life is referred to as health-related quality of life (HRQoL) and has stimulated a great deal of scholarly work in the area of instrument development.

An increased interest in understanding the unique contribution of diverse health conditions to individual quality of life and the need to measure the effectiveness of various preventive and treatment programs, beyond the traditional indices of morbidity and mortality, are the primary motives for the development of health-related quality of life scales (O’Connor 2012). There has always been a need for justified and reasonable means of allocation of health service resources across diverse health programs, based on scientifically developed empirical data on their effectiveness. Conceptually, HRQoL is a multidimensional construct, which encompasses social, mental, and physical health dimensions (Fryback 2010; O’Connor 2004). HRQoL has been accepted as a useful tool in the clinical or cost utility decision-making process (Espallargues et al. 2000; Greenhalgh & Meadows 1999). With this in mind, multiple measurement scales have been developed to help policy and decision makers. Therefore, it is important that researchers identify the type of measure that is appropriate for HRQoL in a given situation.

## Types of Health-Related Quality of Life Measures

The goal of measurement is to prioritize resource allocation to programs or to evaluate effectiveness of treatment determines the type of HRQoL scale that is most appropriate based on its content, structure, and psychometric properties (Higginson & Carr 2001). Broadly, there are two types of measurement scales, generic and specific instruments (Chen et al. 2005; Ferrans & Powers 1992). Generic instruments are intended to measure general or broad health-related quality of life across diverse groups or in diverse disease conditions. Naturally, such instruments are designed in such a way that their contents are broad enough to address the most common areas of quality of life for the majority of the population. Their broader nature makes them preferable when the purpose of measurement is comparison between groups or individuals with different health conditions. Examples of generic instruments include: European Quality of Life Scale (EuroQoL) (Hunt et al. 1981), World Health Organization's Quality of Life Scale (WHOQoL) (WHOQoL Group 1994), and SF-36 (Magee et al. 2002). These scales have the ability to measure complications secondary to treatment conditions but not directly related to the disease condition. The disadvantage of generic instruments is that they could omit some domains that are important to specific group or disease conditions, which could hamper their ability to detect clinically important changes following treatment or interventions.

A domain-specific scale is necessary when the area covered is of particular importance to the study and its hypotheses and where generic and disease-specific scales neglect that area (Chen et al. 2005). A disease or condition-specific scale is used when disease or condition-related elements need to be assessed and greater sensitivity to the clinical condition under consideration is needed (Robling et al. 2002). For example, a given generic instrument might omit important domains for pregnant or postpartum women related to their unique experience of pregnancy and other pregnancy-related conditions. On the other hand, group or condition specific HRQoL scales are required to measure outcomes associated with a particular condition, and greater sensitivity to the given condition is essential. Condition specific scales are believed to be more responsive because of their presumed ability to detect small but clinically significant changes.

## Literature Search and Review Method

The topic "quality of life during pregnancy and postpartum period" was explored through conceptual mapping to determine significant issues related to the area. A search strategy was devised using the following key terms: quality of life, health-related quality of life, pregnancy, postpartum, and measurement. Using these key terms, an electronic bibliographic search was conducted by one of the authors (MM) to find relevant manuscripts in the following databases: PUBMED, MEDLINE, EMBASE, CINAHL, COCHRANE, and PSYCINFO. Limits were placed on each search to exclude non-English citations and studies on child and male subjects.

All instruments used by manuscripts included in this review were identified as patient-reported outcome questionnaires measuring quality of life in pregnant and/or postpartum populations. To find relevant articles not detected in the electronic bibliographic search, a follow-up review of references was performed. After examining titles and abstracts, we examined reference lists, tables, and texts in the pertinent articles to find all patient-reported outcome measures evaluating quality of life in pregnant and postpartum women. One hundred twenty nine (129) abstracts were selected for initial abstract review. A total of 3,026 articles were excluded, but this number could represent an overestimate for the following reasons: (a) articles may be counted twice or more if they appear in many databases, and (b) with the intent of capturing all possible articles, a broad search strategy

was used. Two of the authors (EA and AS) independently reviewed these abstracts for: (a) their relevance to the maternal and child health population, (b) utilization of a QoL instrument, and (c) the application of the QoL instrument to maternal conditions. These two authors reached agreement on 107 abstracts (60 abstracts retained and 47 abstracts excluded) and disagreed on 26 abstracts. Another author (HS), who was blinded to the other two authors' decisions, reviewed the 26 abstracts based on the same criteria. This author decided to include nine of the 26 abstracts for full article review. This process resulted in the identification of a total of 69 articles that fulfilled the criteria for full article review. Five articles were later excluded from the review because an English version of the full article was not available (n04) and male participants were included (n01). Therefore, a total of 64 articles were fully reviewed, and findings are summarized in Table 1. Figure 1 presents the search and selection process of relevant articles for this review.

Quality of life instruments cited by one or more of the 64 articles included in this review are categorized as generic and condition specific and the development process of the latter group was assessed for evidence regarding their robustness based on the following criteria: (a) defining or conceptualization of QoL/HRQoL to explain what exactly the scale intends to measure, (b) theoretical framework used to explain the relationship between the dimensions used and QoL, (c) sample size and representativeness of the target population, and (d) psychometric properties of the scale at the time of its development and generation of utility score. Table 2 presents a summary of our findings regarding condition specific instruments.

## Results

This review gave more emphasis to the HRQoL scales that are specific to the maternal population to enlighten readers of the state of existing HRQoL measures for pregnant and postpartum conditions. It revealed a limited number of patient-reported outcome measures that had been formally developed and validated in pregnant and postpartum populations. In this review, eight measures that are specific to the maternal population (Symon et al. 2002; Magee et al. 2002; Brady et al. 1997; Robling et al. 2002; Avery et al. 2004; Hill et al. 2006; Huang et al. 2011; Kelleher et al. 1997; Wagner et al. 1996) [Table 2] and 19 measures that are not specific to the maternal population were identified (Hunt et al. 1981; Ferrans & Powers 1992; Boivin et al. 2011; Ferrans 1990). The SF-36 and SF-12 of the Medical Outcomes Study (MOS) were the two most frequently used measures of HRQoL, followed by the World Health Organization's Quality of Life Scale-BREF (WHOQoL-BREF) and Mother-Generated Index (MGI), respectively. The use of MGI requires some technical sophistication, which could hinder its use in group of women with low level of literacy. It is a matter of concern that, despite the five decades of research in the area, there is still no single HRQoL scale that could be used across diverse conditions associated with pregnant and postpartum periods.

Existing measures that are specific to the maternal population are too narrow and do not encompass aspects of reproductive health that are related to women's quality of life. Indicators of potential threats to women's reproductive health, such as traumatic childhood experiences (e.g. circumcision), domestic violence, exposure to environmental toxins, and workplace hazards, were not addressed in the scales under this review. Details of existing QoL measures specifically designed for use in maternal conditions are presented in Table 2.

While there is clear interest in the development of a HRQoL scale that takes into account the unique events that occur throughout the life course of women before, during, and after pregnancy, the comprehensiveness and psychometric quality of existing scales remain questionable because of the following four major problems identified in this review: First, most measures did not clearly describe how they conceptualize HRQoL. In the articles



included in this review, some authors did not define QoL at all (Huang et al. 2011; Wagner et al. 1996), while others presented multiple definitions available in the literature without stating a preference for any particular one (Magee et al. 2002; Robling et al. 2002). One study simply listed the most commonly used domains of quality of life (Kelleher et al. 1997). Unfortunately, these situations threaten the validity and interpretability of the studies for several reasons. Failure to define the concept to be measured will leave a researcher with a dilemma of how to measure it and which instrument to use and may result in inaccurate interpretations of what has been measured. In addition, it will not provide clinicians, policymakers, and other stakeholders with all the necessary information to make appropriate treatment or policy decisions. Second, the development of most scales was not guided by a well established theory, such as the life course perspective; hence, it deviates from the current health paradigm. A theoretical framework provides a clear picture of the domains involved and their relationship within the context of the theory. Theory enhances the design and evaluation of measurement scales (Fryback 2010). Moreover, theory-driven measurement scales provide researchers with the opportunity to make informed decisions about the appropriateness of the scale for a given study. The third major issue is that some of the scales currently used to measure HRQoL in pregnant and postpartum women are not validated with representative groups of pregnant and postpartum populations; therefore, there is no evidence of adequate psychometric properties. For example, the Maternal Perceived Quality of Life (MAPP-QoL) scale was initially validated with a convenience sample of 184 women who were mainly white non-Hispanics (Hill et al. 2006). Another study that examined the validity of the Mother Generated Index (MGI) for use during late pregnancy used a sample of only 35 women in the third trimester of pregnancy (Symon & Dobb 2008). Fourth, the majority of these scales do not provide a utility score that combines both duration and quality of life (Sassi 2006) and, consequently, cannot be used in comparative effectiveness research.

Most studies of quality of life in pregnant and postpartum women focused on psychometric properties alone. No study explored whether the measures used were missing relevant constructs and items or whether the QoL items had similar meaning to pregnant and postpartum women when compared to the non-pregnant and/or non-postpartum populations. Therefore, well-designed qualitative studies should be considered as a method to identify important issues that are missing from existing HRQoL scales by involving patients, health providers, and relevant community stakeholders. There is also a need for an innovative strategy to integrate inputs from all involved stakeholders to the generation of a HRQoL scale and related utility score that could be used in comparative effectiveness research.

Studies that address group differences in HRQoL in diverse subpopulations of pregnant and postpartum women require evidence of adequacy of conceptual and measurement properties across groups. Nearly all of the self-reported measures used in the pregnant and postpartum populations in this review have been developed and tested on primarily non-minority, English-speaking populations. Furthermore, some of the measures that have been used in pregnant and postpartum populations (e.g. SF-36) were developed without any consideration to the unique experiences of the pregnancy and postpartum periods. Although there were sporadic studies that reported the adequacy of these measures in diverse populations, their adequacy for pregnant and postpartum populations has not been established. None of the studies in this review specifically addressed the adequacy of these measures in pregnant and postpartum women with diverse socio-demographic backgrounds. In the absence of a HRQoL instrument with conceptual and measurement equivalence across subgroups, there is a risk of making critical treatment and/or program-related policy changes (e.g., practice guidelines, funding decisions) based on inaccurate findings.

Most studies under this review failed to mention why one instrument was preferred among others to measure HRQoL in the maternal population (Nascimento 2011; Amador-Licona & Guizar-Mendoza 2012). Reasons often cited by studies under this review for selecting a given HRQoL instrument can be summarized as follows: The scale has been widely accepted and has been validated; (Kocaoz et al. 2010; Heiney et al. 2003; Acharya & Bhat 2009; Akyn et al. 2009) it has been used to measure domains of interest in a given study (irrespective of population type; e.g., non-maternal); (Lau 2011; Aragaki & Silva 2011) and it is the available scale that is specific to the condition and population under consideration (Lacasse & Berard 2008). The ideal scenario would be to utilize a single instrument that would be able to capture changes in HRQoL among pregnant and postpartum women, irrespective of their cultural backgrounds. However, according to Fox-Rushby and colleagues (Fox-Rushby 1995), quality of life instruments are laden with the views of researchers and based on biomedical models of health that often reflect one dominant cultural perspective. Such approaches are in conflict with diverse social, cultural, and religious backgrounds and the significance these variations bear on HRQoL assessment. In this review, none of the studies considered the possibility of conceptual differences between the target population and the population for which the scales were originally designed.

## Recommendations

The findings of this review point to the need for improving or developing HRQoL scales that can accurately capture pressing issues related to maternal quality of life. This calls for the application of an innovative strategy that incorporates perspectives of HRQoL from multiple sources (e.g., patients, care providers, and other stake-holders) into the development of psychometrically robust prenatal and postnatal health instruments. Qualitative research methodologies can be used to elicit relevant cues from multiple stakeholders on areas of life that are most important to women's quality of life. Expert review panels could be used to examine the domain coverage and potential for adaptation of existing HRQoL measures. New and improved measures of HRQoL must be developed for their use in pregnancy and postpartum periods employing state-of-the-art psychometrics with ample validation among women from different socio-economic backgrounds.

In reality, no HRQoL scale will be free of cultural or group bias (Cella et al. 1998). However, with well-designed and appropriately implemented innovative strategies, we can minimize bias, maintain sensitivity to diversity, and produce measures that are comparable (Cella et al. 1998). The perception of HRQoL across groups could vary depending on the economic, social, cultural, and other relevant domains that shape those perceptions. Therefore, the development of a HRQoL scale that could be used across treatment and intervention programs globally should take into account the diverse backgrounds and experiences of women and incorporate various individual belief systems that are shared by members of various ethnic, religious, and social groups.

It is now indispensable that collaborative research be undertaken to maximize the validity of existing and/or new measures and to establish generic measures that can be used across pregnant and postpartum populations through which valuable conclusions can be drawn. The ultimate aim of this approach in the assessment of quality of life in pregnant and postpartum women is to identify those areas where problems exist, apply appropriate interventions (e.g., preconception care, inter-conception care, etc.) and enable appropriate targeting of resources to improve the quality of life of these mothers. Accomplishment of such improvements may then be objectively measured through the assessment of their quality of life. While one accepts limitations of the use of standardized instruments to measure a complex concept, such as HRQoL, it is reasonable to use such measurement if appropriate standards (i.e., reliability, validity, responsiveness, and feasibility) are met. Another important issue is the

balance that is required between the need to be as comprehensive as possible in the assessment while retaining a measure that is sufficiently succinct to ensure that the instrument can be practically administered in both clinical and research settings.

Many measures of quality of life in pregnant and/or postpartum women are undertaken to address particular conditions or diagnoses (Amador-Licona & Guizar-Mendoza 2012; Badia et al. 2001; Barber et al. 2005; Bijlenga 2011a; Carlsson & Hamrin 1996; Chan et al. 2010; Dalfra et al. 2011). To study the health burden of pregnancy and postpartum-related complications and the comparative effectiveness of diverse treatments or preventive programs, there is a need for a scale that provides utility scores to estimate and compare the benefits of multiple interventions on a common scale (where death equals zero and full health equals one) and detect the loss in HRQoL associated with pregnancy and/or postpartum-related morbidities. The necessity for such utility measures are underscored by recommendations of both the United States Public Health Service Panel on Cost effectiveness in Health and Medicine and the United Kingdom National Institute for Health and Clinical Excellence (NICE) for utility measures to be used when assessing the cost-effectiveness of new and existing interventions (Wonderling et al. 2011; Lipscomb et al. 2009).

Standard gamble and time trade-off techniques have been widely used in utility-related studies. However, these techniques have been criticized for their complex nature. To simplify the process and generate utility scores for multiple maternal and feto-infant outcomes, the authors of this review recommend the utilization of the social judgment theory (SJT), which provides a framework for understanding the nature of human judgment (Thompson et al. 2005), and Brunswik's lens model, which takes into account the voices of multiple stakeholders (Brunswik 1952). This approach helps to convey the relationship between the human system (e.g., judgment of patients, health providers, and other community stakeholders) and the environment system with a set of cues (i.e., items). With this technique, respondents will be asked to weight a list of areas of life (i.e., "cues" generated using a robust qualitative study that include an extensive literature search followed by focus group discussions or Delphi techniques with patients, health providers, and community stakeholders) that are judged to be most important to pregnant and postpartum women's overall HRQoL. The weight given to the importance of each item by participants (patients, health care providers, and community stakeholders) will be combined to generate the overall importance estimate (composite weight) of each item. The composite weight of each item is, therefore, an estimate that takes into account the importance given by the three groups of participants (patients, health providers, and community stakeholders). There is evidence to suggest that early life events during critical periods of life (e.g., female genital mutilation during childhood, sexual abuse), pregnancy-related medical conditions, experiences during labor and delivery, birth outcomes, and uncertainty about child's condition adversely impact women's quality of life (Hillis et al. 2004; Barker et al. 2002; Barker 1997). This evidence is supported by the life course perspective (LCP) (HRSA 2010). According to this theory, health trajectories are shaped over the life span and early experiences can predetermine an individual's future health and development (Thompson et al. 2005; Wilkins et al. 2004) Therefore, we recommend the utilization of the LCP as a framework to guide the development of a HRQoL scale. The LCP framework will allow the incorporation of broad social, economic, environmental factors, and critical early life events as determinants of health-related quality of life for a wide range of disease and conditions across population groups.



## Conclusion

The most remarkable finding of this systematic review of the HRQoL literature in pregnant and postpartum women is the lack of measurement scales designed specifically for use in the general maternity care setting. Indeed, the absence of a HRQoL measure that could be used as a performance measure for local and national surveillance systems of maternal morbidity is the impetus for this review. Another important finding is the lack of a standardized approach in the development of HRQoL scales. As indicated in this review, while most of the condition specific HRQoL instruments have a valid role in maternal and child health, none of them are consistent with the current health paradigm, which incorporates the life course perspective. Moreover, they do not provide utility scores, making their application in comparative effectiveness research limited.

In conclusion, in order to measure the HRQoL of pregnant and postpartum women of diverse demographic and socio-cultural backgrounds with varied pregnancy and or postpartum conditions, there is a need for a new scale. The development of a new scale by implementing the recommendations provided in this review will have the following advantages: Provides a common measure of HRQoL within diverse pregnancy and postpartum states or conditions; permits comparison between multiple programs that address pregnancy and postpartum-related conditions under different contexts; and allows the evaluation of the achievement of targeted local, national, or global goals within the maternal and child health field.

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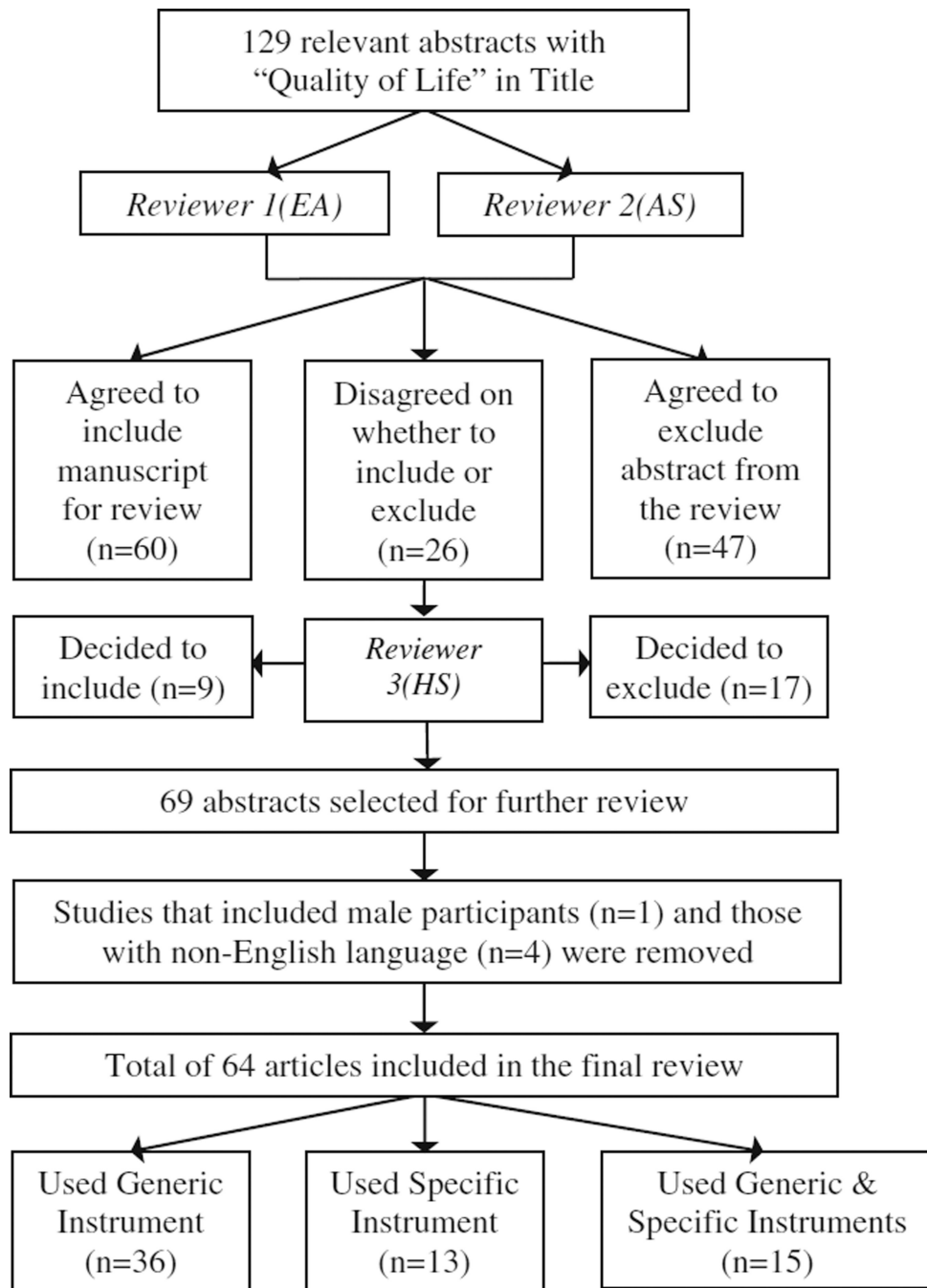
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**Fig. 1.** Flow chart depicting the procedure used in literature search and manuscript selection for the review

**Table 1**  
Summary of studies that measured health-related quality of life (HRQoL) and quality of life (QoL) in the maternal population

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Acharya & Bhat 2009)	Acharya & Bhat, 2009	To assess oral health status and to describe the possible factors that could affect the oral HRQoL among rural pregnant women	Convenience sample of 259 pregnant women (mean age 26±5.5 year) recruited through antenatal check-up in teaching hospital	Cross-sectional study *India	Oral Health Impact Profile (OHIP-14); Shorter version of OHIP-49; validated Indian version used)	Self-reported dysfunction, discomfort and disability arising from oral conditions	Condition specific
(Akyn et al. 2009)	Akyn et al., 2009	To examine the QoL and related factors in women 12-months postpartum.	1,749 postpartum women	Cross-sectional study *Turkey	Turkish version of Quality of Life Scale (QoLS; Unidimensional scale)	QoL and factors related to women's QoL 12-months postpartum	Generic
(Amador-Licona & Guizar-Mendoza 2012)	Amador-Licona & Guizar-Mendoza, 2012	To investigate the relationship between daytime sleepiness and QoL during pregnancy by pre-pregnancy BMI and weight gain during pregnancy	216 pregnant women (108 obese and 108 non-obese) at 1st and 3rd trimesters (Excluded women with chronic conditions)	Prospective descriptive study *Mexico	12-item short-form health survey (SF-12) and Epworth Sleepiness Scale (ESS)	Weight gain, mental component of QoL, and physical component of QoL at 1st and 3rd trimesters	Generic
(Aragaki & Silva 2011)	Aragaki & Silva, 2011	To understand the perception about QoL among nursing mothers assisted at a primary health center	202 mothers who were breastfeeding their infants (aged 0-6 months)	Descriptive, qualitative, and exploratory study *Brazil	WHOQoL-brief (contains 26 questions)	Perceived quality of life	Generic
(Beversdorff et al. 2008)	Beversdorff et al., 2008	To analyze women's overall QoL prior to delivery and the changes postpartum	1,122 women	Population-based, prospective cohort study *Northeast Germany	Survey of Neonates in Pomerania (SNIP)	Women's overall QoL prior to delivery and changes expected by within the near future	Generic
(Bijlenga 2011b)	Bijlenga, 2011	To measure HRQoL among pregnant mothers with IUGR of the fetus and compare those with elective early induction versus term deliveries	361 (randomized) and 198 (non-randomized) expecting mothers with IUGR	Parent study was a RCT *Netherlands	SF-36, European Quality of Life (EuroQoL 6D3L), Hospital Anxiety and Depression Scale (HADS), and Symptom Check List (SCL-90)	Maternal HRQoL at baseline, 6 weeks postpartum, 6 months postpartum	Generic

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Chan 2010)	Chan, 2010	To assess the prevalence of nausea vomiting during pregnancy (NVP) with different degree of severity and identify their relationship with HRQoL and to determine its association with the sociodemographic and obstetric factors	396 women who attended antenatal care between 10 and 14 weeks of gestation	Prospective cross-sectional study *China	SF-36	Prevalence of NVP and association of NVP with HRQoL	Generic
(Coban et al. 2011)	Coban et al., 2011	To evaluate the impact of pregnancy-related back pain on QoL and physical ability in the third trimester of pregnancy	100 women in the 28th–40th gestational week	Cross-sectional study *Turkey	WHOQoL-BREF	Impact of pregnancy related back pain on QoL and physical ability in the third trimester of pregnancy	Generic
(Dalfra et al. 2011)	Dalfra et al., 2011	To evaluate QoL of diabetic pregnant women visiting diabetic follow up clinic	245 pregnant women (30 with type I diabetes, 176 with gestational diabetes, and 39 controls [non-diabetic])	Prospective descriptive study *Italy	SF-36 and Center for Epidemiologic Studies Depression Scale (CESD) in third trimester and after delivery	QoL in pregnant diabetes women during third trimester and 2 months postpartum	Generic
(Darcy et al. 2011)	Darcy et al., 2011	To determine risk factors for postpartum depression and longitudinal impact of depression on maternal HRQoL	217 mothers of infants who returned to work (30 h per week) by the time their infants were 4 months old	Population-based, prospective cohort study *USA	CESD, SF-12, and Infant-Toddler Quality of Life (ITQoL) scale	Maternal HRQoL and infant development and health	Generic (mom)
(Coyle 2011)	Coyle, 2011	To examine relationships among maternal concern, social support, and HRQoL	234 mothers of children up to 18 years of age	Descriptive, cross-sectional design *USA	SF-36v2	Maternal HRQoL	Generic
(Da Costa et al. 2006)	Da Costa et al., 2006	To evaluate HRQoL among women with postpartum depression.	78 postpartum (4–38 week) women scoring 10 on the Edinburgh Postnatal Depression Scale (EPDS)	Cross-sectional study *Canada	SF-36, Pittsburgh Sleep Quality Index (PSQI), and EPDS	HRQoL, sleep quality, life stress, and social support	Generic

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
		examine the association between severity of depressive symptoms and level of impairment in physical and mental HRQoL, and identify contributors to physical and mental HRQoL					
(Da Costa et al. 2010)	Da Costa et al., 2010	To evaluate and identify determinants of health related quality of life (HRQoL) during pregnancy	245 pregnant women in third trimester (28-40 weeks)	Cross-sectional study *Canada	SF-36 EPDS Life Stress Event Scale MOS social support survey	Determinants of HRQoL during pregnancy (life stress, social support, sleep, depressed mood)	Generic
(de Tychey et al. Feb 2008)	de Tychey et al., 2008	To study the impact of postnatal depression on the QoL of mothers and to evaluate if the gender of their child impacts their QoL	181 postnatal women (birth through 2 months)	Cross-sectional study *France	SF-36 GHQ12 EPDS	Short term impact of child birth on Maternal QoL	Generic
(El-Gazzaz et al. 2010)	El-Gazzaz et al., 2010	To investigate variables looking for predictors of healing/failure and examine long-term QoL and sexual function in women with low retro-vaginal fistula (RVF) from obstetrical or crypto glandular etiology	100 with obstetric or crypto glandular etiology	Cross-sectional study *USA	SF-12, Fecal Incontinence QoL scale (FIQL), Irritable Bowel Syndrome QoL scale (IBS-QoL), and Female Sexual Function Index (FSFI)	Success rate of surgical treatment of RVF from crypto glandular or obstetric etiology and effect of surgery on QoL	Generic & Condition specific
(Gutke et al. 2011)	Gutke et al., 2011	To evaluate the impact of lumbopelvic pain on Postpartum QoL	Women who attended antenatal care twice between 2001 and 2003; 308 analyzed in pregnancy and 272 analyzed postpartum	Prospective descriptive study *Sweden	Oswestry Disability Index (ODI), Pain Intensity (VAS), EQ5D, and EPDS	Prevalence of lumbopelvic pain, disability, pain intensity, HRQoL, activity level, and kinesiophobia	Generic & Condition specific



Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Graziosi et al. 2005)	Graziosi et al., 2005	To compare patients' HRQoL after a misoprostol strategy to a curettage in women with early pregnancy failure after failed expectant management	154 women with early pregnancy failure (Misoprostol-79 vs. Curettage-75)	RCT *Netherlands	SF-36 and State-Trait Anxiety Inventory	HRQoL and satisfaction with treatment	Generic
(Halikotho et al. 2010)	Halikotho et al., 2010	To investigate the effects of gestational diabetes mellitus (GDM) on women's HRQoL after delivery	77 with history of GDM from birth registry and 54 with no history of GDM	Case-control study *Finland	15D HRQoL	HRQoL	Generic
(Hill & Aldag 2007)	Hill & Aldag, 2007	To examine preterm, near-term, and term mothers' self-reported QoL in the early postpartum period	184 mothers of either a preterm, near-term, or term infant	Prospective, repeated measure design *USA	MAPP-QoL	Maternal postpartum quality of life at weeks 1 and 3	Condition specific
(Heiney et al. 2003)	Heiney et al., 2003	To test the efficacy of a therapeutic group by telephone conference call for women with breast cancer	66 women with stage I or II cancer	Quasi experimental study *USA	44-item QoL scale (Breast cancer version) and 30-item short version of Profile of Mood States (POMS)	QoL, mood, and immune function (CD4, CD8, and NK)	Condition specific
(Hill et al. 2006)	Hill et al., 2006	To develop and examine psychometric properties of the first self-administered scale that measures maternal QoL during early postpartum period	184 women completed the MAPP-QoL at weeks 1 and 3	New scale development *USA	MAPP-QoL	Development of the scale itself	Condition specific scale
(Hoedjes et al. 2011)	Hoedjes et al., 2011	To examine changes in HRQoL between 6 and 12 weeks postpartum after mild and severe preeclampsia, to assess the extent	128 women who had history of pre-eclampsia from registries of 4 hospitals	Retrospective cohort study *Netherlands	Dutch version of the SF-36 at weeks 6 and 12	Postpartum HRQoL following history of pre-eclampsia	Generic

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Huang et al. 2011)	Huang et al., 2011	to which it differs across the 2 conditions, and to examine factors that contribute to such differences To examine the effect of delivery mode on women's postpartum QoL in rural China and explore factors influencing postnatal QoL	343 women within 12 months postpartum	Cross-sectional study *China	Scale for rural postpartum QoL (RPQoL)	QoL during different postnatal periods	Condition specific
(Jomeen & Martin 2005)	Jomeen & Martin, 2005	To establish the psychometric properties of the Medical Outcomes Study Short Form 36 (SF-36) Version 2 in early pregnancy to evaluate the clinical appropriateness of using this measure with women in early pregnancy.	129 women in antenatal care	Exploratory and confirmatory factor analyses were conducted *England	SF-36, EPDS, and Hospital Anxiety and Depression Scale (HADS-A)	Establishing psychometric properties of SF-36 in early pregnancy	Generic & condition specific
(Kelleher et al. 1997)	Kelleher et al., 1997	To design and validate a condition-specific QoL scale for the assessment of women with urinary incontinence, and to use the scale to assess the QoL of women with specific urodynamic diagnoses	293 consecutive women referred for investigation of urinary incontinence	Development of new scale *England	SF-36 and new condition specific QoL questionnaire for women with urinary incontinence	Design and validate a condition specific QoL scale for assessment of women with urinary incontinence	Condition specific
(Kocaoz et al. 2010)	Kocaoz et al., 2010	To examine the prevalence of urinary incontinence during pregnancy and the related risk factors, as well as to assess	393 pregnant women (106 with incontinence)	Cross-sectional descriptive survey *Turkey,	International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF) and Wagner's QoL scale	Prevalence of Urinary incontinence during pregnancy, related risk factors and its impact on QoL	Generic & condition specific

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Kolotkin et al. 2008)	Kolotkin et al., 2008	its influence on the QoL To explore the differences between male and female bariatric surgery candidates with respect to HRQoL, health, socio-demographic variables	794 (84.8 % women)	Cross-sectional study *USA	SF-36 and Impact of Weight on Quality of Life-Lite (IWQoL-Lite)	Obesity specific HRQoL	Generic & condition specific
(Lacasse & Berard 2008)	Lacasse & Berard, 2008	To validate the Nausea-Vomiting during Pregnancy QoL scale (NVP-QoL)	367 1st trimester pregnant women (78.5 % reported NVP)	Prospective observational study *Canada	SF-12 NVP specific QoL	NVP-related QoL during first trimester	Generic & condition specific
(Larrabee et al. Dec 1996)	Larrabee et al., 1996	To examine the perceived QoL and functional status of women with human immunodeficiency virus (HIV) during the antenatal, perinatal, and postpartum periods	42 (21 HIV-infected and 21 non-infected matched control)	Prospective observational study *USA	SF-36	Perceived QoL of women with HIV during antenatal, perinatal, and postpartum period	Generic
(Lau 2011)	Lau, 2011	To explore associations between demographic, socio-economic and obstetric variables and HRQoL with perceived stress among pregnant women	1151 pregnant women on antenatal care visit during their second trimester	Cross-sectional, exploratory quantitative study *China	SF-12 and Perceived Stress Scale (PSS)	HRQoL with perceived stress	Generic & condition specific
(Lau et al. 2008)	Lau et al., 2008	To examine the prevalence of intimate partner abuse during pregnancy and its effects on HRQoL	1,200 postnatal women	Retrospective, cross-sectional, comparative design *Hong Kong	SF-36, Abuse Assessment Screen (AAS), and Revised Conflict Tactic Scale (CTS-2)	HRQoL among women who had intimate partner abuse during pregnancy	Generic & condition specific
(Li et al. 2011)	Li et al., 2011	To evaluate the prevalence of depression during	574 women in their 1-40th week of pregnancy	Exploratory cross-sectional study *China	EPDS and SF-36v2	Prevalence of depression and the association between	Generic

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
		pregnancy, to explore the relationship between depression and QoL, and to identify predictors of physical and mental health among pregnant women	obtaining regular antenatal care			depression and HRQoL among pregnant mothers	
(Magee et al. 2002)	Magee et al., 2002	To develop a scale that measures changes in symptoms of NVP	500 women with NVP	New scale development	NVP QoL	Development of the NVP-related QoL scale	Condition specific scale
(Mautner et al. 2009)	Mautner et al., 2009	To explore the influence of hypertension, GDM, and preterm birth as risk factors for HRQoL and depressive symptoms during late pregnancy and postpartum	90 pregnant women between 24 and 37 weeks (29 controls)	Prospective study *Austria	WHO-QoL-BREF EPDS	Influence of hypertension, GDM, and preterm birth on HRQoL during late pregnancy and postpartum	Generic
(Montgomery et al. 2011)	Montgomery et al., 2011	To explore whether differences exist among women with mental health issues who had either young, adult, or no children in relation to their individual and social vulnerabilities, health, and quality of life	234 female (108 with no child, 68 with at least 1 child <18 years of age, and 25 with children 18 years of age) psychiatric consumer/survivors	Retrospective study *Canada	Lehman Quality of Life - Brief version (QoL-BRIEF)	QoL of among women with mental issues who had either young, adult, or no children	Generic
(Montoya Arizabaleta et al. 2010)	Montoya Arizabaleta et al., 2010	To investigate the impact of aerobic exercise during pregnancy on HRQoL among nulliparous women	50 nulliparous, pregnant women receiving prenatal care at one of three tertiary hospitals	Randomized controlled trial *Colombia	Colombian version of the SF-12 at baseline and after 3 months of intervention	HRQoL of nulliparous women	Generic

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Moyer et al. 2008)	Moyer et al., 2008	To examine optimism/pessimism, knowledge of HIV, and attitudes toward HIV screening and treatment among pregnant women	101 Pregnant women presenting for prenatal care	Cross-sectional design *Ghana	SF-12 and Life Orientation Test-Revised (LOT-R)	HRQoL; optimism/pessimism and its relationship with HIV knowledge and previous testing	Generic
(Moyer et al. 2009)	Moyer et al., 2009	To explore how optimism/pessimism are related to HRQoL across cultures	Pregnant women 18 years of age above from three countries participated (N=663; Ghana, n=101; China, n=251; USA, n=311)	Cross-sectional study *Multi-site: Ghana, China, and USA	SF-12 and Life Orientation Test-Revised (LOT-R)	Impact of culture on the relationship between optimism/pessimism and HRQoL	Generic
(Munch et al. 2011)	Munch et al., 2011	To compare the impact of hyperemesis gravidarum (HG) and nausea and vomiting of pregnancy NVP on HRQoL scores	Pregnant women with HG (n=29), NVP (n=48) during their first trimester	Exploratory design *USA	NVP specific HRQoL (NVPQoL), SF-36, and SCL90	HRQoL of pregnant mothers with hyperemesis gravidarum and those with nausea and vomiting of pregnancy	Generic & condition specific
(Nagpal et al. 2008)	Nagpal et al., 2008	To evaluate the utility of an adapted Mother-Generated-Index in assessing postpartum quality of life (PQOL)	195 women who delivered in the last 6 months	Two-stage cluster randomized sampling *India	Adapted Mother-generated-index (MGI) and EPDS	Postpartum QoL	Condition specific
(Nascimento 2011)	Nascimento, 2011	To evaluate the effectiveness and safety of physical exercise in terms of maternal outcomes and the perception of QoL in pregnant obese and overweight women	80 pregnant women (14–24 weeks of gestation) 18 year of age, pre-pregnancy BMI 26 kg/m <sup>2</sup>	Randomized clinical trial *Brazil	WHOQoL-BREF	Gestational weight gain, Perception of QoL in pregnant obese and overweight women	Generic
(Nicholson et al. 2006)	Nicholson et al., 2006	To estimate the independent association of depressive symptoms with HRQoL among a diverse group of	175 pregnant women receiving prenatal care	Cross-sectional study *USA	SF-36 CESD	Independent association of depressive symptoms with HRQoL among diverse group of women in early pregnancy	Generic



Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Nuwagaba-Birbonwoha et al. 2006)	Nuwagaba-Birbonwoha et al., 2006	women in early pregnancy To examine the effect of HIV infection on QoL during pregnancy and puerperium	132 (HIV-positive) and 399 (HIV-negative) nullipara or unipara pregnant women recruited at 36 weeks of pregnancy and followed until 6 weeks after delivery	Prospective cohort study *Uganda	Dartmouth COOP charts were translated and adopted patients used either the translated or adopted one	QoL during pregnancy and puerperium	Generic
(Ones et al. 2005)	Ones et al., 2005	To evaluate the QoL and psychological status in mothers of children with cerebral palsy (MCCPs) and to assess their relation with regard to the degree of their child's disability	46 MCCPs and 46 non-MCCPs	Prospective case-control study *Turkey	Nottingham Health Profile-(NHP-1), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI)	QoL and psychological status in mothers of children with cerebral palsy	Generic
(Petrou et al. 2009)	Petrou et al., 2009	To compare the empirical validity of two utility measures (EQ-5D and SF-6D) in a large maternity population	623 (312 control, 311 intervention) English speaking women 17 year. with live birth	Parent study is a RCT *England	General health status measure, EPDS, EQ-5D and SF-6D (both UK version)	Utility score of EQ-5D and SF-6D	Generic
(Powell et al. 2011)	Powell et al., 2011	To assess the perception of asthma control, QoL, and perceived risks of therapy in pregnant women with asthma	125 pregnant (12-20 weeks gestation) women with asthma	Cross-sectional study	Short form-12 Health survey v1 (SF-12 V1)	Perception of Asthma control, QoL, and perceived risk of therapy	Generic & condition specific
(Robling et al. 2002)	Robling et al., 2002	To develop a site-specific instrument that complements a generic quality of life scale (SF-36)	848 women following primary care consultation for a variety of breast-related problems	RCT *England	SF-36 items and he Cardiff Breast Scale	Development of new site specific QoL scale for women with problems related to breast	Generic & condition specific new scale developed
(Sammarco 2003)	Sammarco, 2003	To examine the relationship among perceived social support, uncertainty, and QoL in older	103 breast cancer survivors older than 50 years	Descriptive, correlational design *USA	Ferrans and Powers QoL index-Cancer version	Relationship among perceived social support, uncertainty and QoL in older survivors of breast cancer	Condition specific

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Roiland & Heidrich 2011)	Roiland & Heidrich, 2011	survivors with breast cancer To identify symptom clusters in older adult breast cancer survivors (ages 65–97 years) and examine whether symptom clusters are related to demographic, health, and QoL variables	192 breast cancer survivors	Retrospective study (secondary data analysis of RCT study) *USA	SF-36; 14 item purpose in life (PIL); and 14 item positive relations with others (PR) scale	Relationship between symptom cluster and demographic health, and QoL variables	Generic
(Setse et al. 2009)	Setse et al., 2009	To estimate the effect of a change in depressive symptoms status on HRQoL throughout pregnancy and after delivery	200 women receiving pregnancy care as part of the health status in pregnancy (HIP) study	Longitudinal prospective cohort study *USA	SF-36 and CESD	Estimate of the change depressive symptoms on HRQoL using a random effects model	Generic
(Symon et al. 2002)	Symon, MacDonald et al., 2002	To generate a tool that measures postnatal QoL	60 participants (Weeks 6 and 8) and 43 participants at 8 months	New scale development *Scotland	MGI, SF12, and EPDS	QoL related to postnatal morbidity	Generic & condition specific
(Symon et al. 2003)	Symon, Glazener et al., 2003	To determine the contribution of postnatal fatigue and other aspects of physical morbidity for women's QoL		*Scotland	MGI	QoL related to postnatal physical morbidity	Condition specific
(Symon et al. 2003)	Symon, MacKay et al., 2003	To compare the aspects of their lives nominated by women with low and high QoL scores, and to examine the respective importance of these areas	103 postpartum women at 6 to 8 and then 8 months	Exploratory descriptive study *Scotland	MGI, SF12, and EPDS	QoL related to postnatal morbidity	Generic & condition specific
(Symon et al. 2003)	Symon, McGreavey et al., 2003	To assess the validity of the Mother Generated Index scale in the assessment of postnatal QoL	102 women who have had a baby	Cross-sectional study *Scotland	MGI EPDS Postnatal Morbidity Index (PNMI)	QoL of mothers who have had a baby	Condition specific

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Symon & Dobb 2008)	Symon & Dobb 2008	To determine if the Mother-Generated Index (MGI), a validated postnatal tool, was acceptable during late pregnancy	35 women (20 nulliparous and 15 parous) during 3rd trimester of their pregnancy	Cross-sectional study *Scotland	Modified version of MGI and General Health Questionnaire (GHQ-30)	To validate the MGI as an acceptable QoL measure during late pregnancy	Generic and condition specific
(Symon 2011)	Symon, 2011	To determine the feasibility of assessing changes in QoL from late pregnancy to the postnatal period	6 week postnatal follow-up of 35 women	Longitudinal prospective study *Scotland	MGI and General Health Questionnaire	Feasibility of assessing changes in QoL from late pregnancy to the postpartum period	Condition specific
(Tendais et al. 2011)	Tendais et al., 2011	To examine physical activity patterns among women, from pre-pregnancy to the second trimester of pregnancy, and the relationship between physical activity status based on physical activity guidelines and HRQoL and depression over pregnancy	56 healthy pregnant women self-reported physical activity, HRQoL, and depression at 10–15 and 19–24 weeks of pregnancy and physical activity before pregnancy	Longitudinal survey *Portugal	SF-36	Relationship between physical activity status based on physical activity guidelines and HRQoL and depression over pregnancy	Generic
(Torkan et al. 2009)	Torkan et al. 2009	To compare QoL in women after normal delivery and caesarean section	100 women (50 normal deliveries and 50 CS). SF-36 was completed at time 1 (6–8 weeks) and time 2 (12–14 weeks) after delivery	Prospective study *Iran	SF-36	QoL following normal delivery and caesarean section were compared	Generic
(Webster et al. 2011)	Webster et al., 2011	To evaluate the impact of social support on postnatal depression and HRQoL	222 women who gave birth at tertiary hospital. Data collected at baseline and 6 weeks post discharge	Prospective cohort study *Australia	EPDS; Maternity Social Support Scale; and WHOQoL	Level of social support, postnatal depression, and HRQoL	Generic
(Wik et al. 2011)	Wik et al., 2011	To evaluate the long-term effect of pregnancy-related DVT using the Venous Insufficiency Epidemiological and Economic Study (VEINES)-	313 women with validated pregnancy-related deep vein thrombosis (DVT) and 353 controls	Cross-sectional case-control study	VEINES-QoL	Evaluate the long term consequences of pregnancy-related DVT	Condition specific

Ref #	First Author & Year of Publication	Study Aim	Participants & Sample	Study Design & Country	Instrument Used	Outcomes Measured	Type of QoL
(Yang et al. 2008)	Yang et al., 2008	QOL/Sym questionnaire, and to investigate the influence of socioeconomic factors and co-morbidity To determine the burden of premenstrual dysphoric disorder (PMDD) on HRQoL in comparison to the US general population and specific chronic health conditions	1,637 non-pregnant females aged 18-45 years who are not breast feeding	Cross-sectional study	SF-12 (v2)	Study the burden of premenstrual de	Generic
(Zubaran 2011)	Zubaran, 2011	To examine the relationship between breast feeding efficacy and QoL in a sample mothers	89 mothers	Cross-sectional study	Breast Feeding Self-Efficacy Scale-Short Form (BSES-SF), WHOQoL-BREF, and MQLI	Correlation between QoL scores and breast feeding efficacy score	Generic & condition specific
(Zubaran & Foresti 2011)	Zubaran & Foresti, 2011	To assess the QoL of a sample of mothers and explore the association between postpartum depression and QoL standards	101 women who completed the WHOQOL-BREF and Multi-cultural QoL Index (MQLI).	Cross-sectional study	WHOQoL-BREF, MQLI, PDSS, and EPDS	HRQoL Depressive symptoms and association between HRQoL and depressive symptoms	Generic
(Zubaran et al. 2009)	Zubaran et al., 2009	To assess QoL during postpartum period and to compare the performance of two QoL scales	101 postpartum women	Cross-sectional study	WHOQoL-BREF and Multicultural Quality of Life Index (MQLI)	Postpartum QoL and sensitivity of the two scales used	Generic

Table 2

Summary of specifically maternal QoL scales used in reviewed articles

Ref #	First Author & Year of Publication	Name & Purpose of the Scale	QoL Definition & Theory	Sample & Method	Domains, Items, & Scoring	Psychometric properties
(Brady et al. 1997)	Brady et al., 1997	Functional assessment of cancer therapy-Breast quality of life instrument (FACT-B): To measure multidimensional QoL in patients with breast cancer	- QoL construct not defined	Sample: Two validation samples used (n1-47 and n2-295), consisting of patients with advanced stage (Stage III and IV) breast cancer, on chemo/radiation at the time of recruitment who were able to read and speak English Method: Pool of 137 initial items was developed through in-depth interview with 15 breast cancer patients and five experts.	-Domains: Three subscales: Physical well-being (PWB), functional well-being (FWB) and the Breast cancer subscale (BCS)  Items: 44-item self report scale [consists of the FACT-General (FACT-G) plus the breast cancer subscale (BCS)] Scoring: No information	-Good internal consistency for the FACT-B total score (alpha-.90), with subscale alpha coefficients ranging from .63 to .86 over a period of 3 to 7 days
(Hill et al. 2006)	Hill et al., 2006	Maternal Postpartum Quality of Life Questionnaire (MAPP-QoL): To measure maternal QoL during the early postpartum period	-Theory not discussed in article  Ferrans and Powers' definition of QoL, domains, and conceptual model used	Sample: A convenience sample of 184 mothers completed the MAPP-QoL postpartum (weeks 1 and 3)  Method: No information	Domains: psychological/baby, socioeconomic, relational/spouse-partner, relational/family-friends, and health functioning  Items: 41 items  Scoring: No information	Good internal consistency reliability for the 5 domains (Cronbach's alpha coefficient of .82 to .96) Stability reliability ranged from .66 to .76.  Correlation of r-.69 with a single-item measure of life satisfaction  Discriminant validity supported by negative correlations with the 3 negative mood states of the Multiple Affect Adjective Check List-Revised (MAACL-R), as well as poor sleep and fatigue scores
(Huang et al. 2011)	Huang et al., 2011	Rural postpartum QoL (RPQoL)	QoL construct not defined  Theory not discussed in article	Sample: 343 rural puerpera women  Is adapted from the postpartum quality of life scale.	Domains: physical complaints and pain, sleep and energy, sex satisfaction, interpersonal communication, self-evaluated living stress and perceived life satisfaction.  Items: 20 item measure with 10-point Likert-scale ranging from never to very seriously except for three items (E23, E24, E25). For these items, the scale ranges from satisfied/pleased to very dissatisfied/unpleased.  Scoring: Scores range from 0 to 200 with higher score indicates lower postpartum QoL.	Internal consistency tested using Cronbach's alpha (coefficient-.80) and split-half reliability (coefficient-.57)

Ref #	First Author & Year of Publication	Name & Purpose of the Scale	QoL Definition & Theory	Sample & Method	Domains, Items, & Scoring	Psychometric properties
(Kelleher et al. 1997)	Kelleher et al., 1997	Quality of life of urinary incontinent women: To assess the QoL of women with specific urodynamic diagnoses	QoL was defined as an abstract and highly subjective concept influenced by personal and cultural values, beliefs, self-concepts, goals, age, life expectancy, diseases, accidents, treatments, interpersonal relationships, and social support.	participant observation, and literature review for item pool generation. Statistical and expert judgment used to select items Sample: 285 consecutive women referred for investigation of urinary incontinence completed the final version of the scale and 110 women did a re-test Method: Items selected from previously available generic and specific instruments following discussion with clinical colleagues and patients	Domains: 8 dimensions (not specified) Items: 21 item scale with a 4-point Likert scale Scoring: Scores range from 0 to 100, a higher score indicates poor QoL	Internal consistency 2 to 16 days apart for the domains range from .73 to .89 Scores showed adequate correlation with SF-36 supporting criterion validity
(Magee et al. 2002)	Magee et al., 2002	Nausea and vomiting of pregnancy (NVP): To measure change in symptoms of nausea and vomiting of pregnancy	QoL construct not defined Theory not discussed in article	Sample: 500 women who call the Health line at a hospital were recruited Method: Initial item pool was generated through: focus group, literature search, expert opinion, and review of other QoL scales. Factor analysis was performed to explore the relationship between items and determine domains. Items with poor correlation ( $r < .5$ ) and relatively lower overall importance were removed.	Domains: physical symptoms/ aggravating factors, fatigue, emotions, and limitations Items: 30 items in 7 point Likert scale Scoring: No information	Validation process not clearly reported
(Robling et al. 2002)	Robling et al., 2002	The Cardiff Breast scales	QoL construct not defined Theory not discussed in article	Sample: Final items administered to sample of 848 women Method: Structured interviews (n=12) conducted for the initial item pool generation process. Patient interviews were not done. Pilot tests were done which lead to item modification and reordering.	Domains: 3 factors that were administered with SF-36 scale simultaneously Items: No information Scoring: Scores range from higher score indicates poor QoL	Content validity addressed through expert consultation Construct validity confirmed through correlation between women report of limited household activity and poor QoL score
(Symon et al. 2002)	Symon et al., 2002	Mother-Generated Index (MGI): To measure postnatal QoL	QoL defined as individual's perception of life in terms of physical, mental,	Sample: Convenience sample of 103 women (60 at 6–8 weeks and 43 at 8 months postpartum); mothers who	Domains: Not specified	Concurrent validity was assessed by comparing it with EPDS and SF-12



Ref #	First Author & Year of Publication	Name & Purpose of the Scale	QoL Definition & Theory	Sample & Method	Domains, Items, & Scoring	Psychometric properties
(Wagner et al. 1996)	Wagner et al., 1996	Quality of life of persons with urinary incontinence (I-QoL): To measure a self-report QoL measure specific to urinary incontinence	emotional, social, sexual, and spiritual well-being.	are <16 year of age and those who lost their baby were not included Method: Developed based on an existing validated tool called the patient generated index (PGI).	Items: MGH is a single sheet, 3-step questionnaire. -- Scoring: Mothers identify 8 areas of life that had been affected over the past month by having a baby and then give herself a score out of 10 for each part of life. Then mothers allocate 20 "spending points" to most important areas Domains: 3 subscales: avoidance and limiting behavior, psychosocial impact, and social embarrassment	Because the nature of the scale, it has no intrinsic capability to test for internal reliability, unlike structured questionnaires
			QoL construct not defined	Sample: Not detailed	Items: 22-item five point Likert scale with Scoring: Sum of subscale scores undergo transformation to a 'scale score' ranging from 0 to 100, higher score indicates a higher QoL	Internal consistency (alpha-.95). I-QoL scores were more closely related to overall well-being than bodily pain- evidence of convergent validity. Reproducibility as measured by intra-class correlation coefficient (ICC) was .93 after retesting within 18 days on average (SD=4)
			Theory not discussed in article	Method: Interview with 20 individuals for initial development followed by 17 individuals for refining and 62 for psychometric tests		