

# Eliciting women's preferences in health care: A review of the literature

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**Objectives:** The increasing availability of information about health care suggests an expanding role for consumers to exercise their preferences in health-care decision-making. Numerous methods are available to assess consumer preferences in health care. We conducted a systematic review to characterize the study of women's preferences about health care.

**Methods:** A MEDLINE search from 1965 to July 1999 was conducted as well as hand searches of the *Medical Decision Making Journal* (1981–1999) and references from retrieved articles. Only original articles on women's health issues were selected. Information on thirty-one variables related to study characteristics and preferences were extracted by two independent investigators. A third investigator resolved disagreements. Qualitative and quantitative analyses were conducted to synthesize the data.

**Results:** Four hundred eighty-three studies were identified in the initial search. Seventy articles were selected for review based on title, abstract, and inclusion criteria. There was an increase in published articles and number of methods used to elicit preferences. White women were studied more than black women ( $p < .001$ ). Preferences were mainly studied in outpatient settings ( $p < .005$ ) and in the United States, United Kingdom, and Canada (83 percent). Preferences related to participation in decision-making were the most common (21 percent). Only 4 percent of the studies were performed to inform the debate for public policy questions. Willingness to pay was the method most used (11 percent), followed by category scaling (10 percent), rating scale (9 percent), standard-gamble (6 percent). Preferences for individual particular (opposed to sequential and health states) outcomes (68 percent), different treatments/tests (47 percent), and related to a treatment episode (31 percent) were addressed. Information regarding diseases, conditions, or procedures was given in 57 percent of studies. Information provided was mainly written (37 percent) and included positive and negative potential outcomes (67 percent). There is no relationship between the method or tool used for delivery information and the choice performed.

**Conclusions:** The literature on preferences in women's health care is limited to a fairly homogeneous population (white women from the United States, United Kingdom, and Canada). Additionally, use of utility-based measures to capture preferences has decreased over time while others methods (e.g., time trade-off [TTO], contingent valuation) have increased. Women's preferences are not necessarily uniform even when

asked similar questions using similar tools. Little information on women's preferences exists to inform policy-makers about women's health care.

**Keywords:** Women, Preferences, Methods, Decision-making, Participation

Information about health care is increasingly available to consumers through the Internet, lay press, and specialty journals. This increased availability suggests an expanding role for consumers in decisions about the provision of health care. This expansion applies to the individual level where, as patients, consumers may want more say in choosing between treatments and assessing relative risk/benefit ratios in relation to treatment strategies. In addition, consumers, as taxpayers, may provide substantial input into national policy decisions about the allocation of health-care resources in society, including what services should be provided and to whom, as more information about the effects and costs associated with various health-care services enters the public domain.

As consumer access to information has increased, methods to assess consumer preferences about health-care services and medical treatments and for use in cost-utility analysis have proliferated. Various approaches and tools now exist to evaluate preferences whether in regard to treatment choices or possible roles for the consumer in participating in health-care decision making. Some include probabilities of events happening, some require choices between alternatives, while others ask for straightforward ratings (75). The standard gamble technique, for example, is a utility-based approach derived from economic theory in which individuals choose an indifference point between a gamble on full health and death at a specific probability level and remaining in the current chronic health state (21). Conjoint analysis, on the other hand, asks individuals to choose between different options through which the relative importance of attributes of those options, such as cost or waiting time, is revealed (39).

While many tools exist, the way information is presented within a given technique is also important. Choice alternatives may be presented under certainty or uncertainty, with the risk quantified or generally indicated. Medical conditions associated with the alternatives can be described directly and specifically or indirectly through their impact on function. Description of alternatives can accent positive prospects, negative prospects, or both.

Other aspects of preference assessment also vary. The alternatives presented, about which choices are made, depend on the aims of the study in question. They can be for a particular health state, a sequence of health states, or a type of decision-making role. Alternatives can be presented in written form, through a video, or conversationally. Finally, the context in which the decision is made is not consistent across studies. For example, consumers can be asked to make hypothetical choices about treatments under the assumption that

they do not have the condition in question or in the midst of an actual treatment episode (70).

Different tools, using varying scenarios and styles for presenting information, have been used to assess consumer preferences in numerous settings. Systematic reviews of methods to assess these preference assessments in health care, however, are generally lacking. Assessing what is known to date can underscore what is known about preferences, the frequency with which certain tools have been used, how information is generally presented, the topics studied and convergence and divergence of results from different tools, and important areas for future work. Directing research in this area is important given its significance in informing individual and policy decision making.

The purpose of this study is to characterize the study of women's preferences about health-care diagnoses and treatments. Women were chosen for several reasons. First, they use more and different health-care services than men. Also, research has shown that communication style and information content in medical encounters are a function of the gender of the physician and the patient (22). Studies have also documented that the attitudes of women seeking care, along with the physician, affect the treatment pathway (60) and that women and men respond to risk differently (29). A systematic review was undertaken that specifically analyzed the characteristics of the studies about women; why preferences were studied; what methods were used; what type of information was provided; what tools were used; and what the findings in relation to preferences resulted.

## METHODS

A *MEDLINE* search from 1965 to July 1999 was carried out to identify the published literature regarding women's preferences. Hand search of the *Medical Decision Making Journal* (1981–1999) and the references from the retrieved articles supplemented the results of the systematic literature search. The emphasis of the search was on sensitivity, rather than specificity, to ensure all potential, important references were identified for review. The search included the following Medical Subject Heading (in MEDLARS) terms: *decision making/or choice behavior; decision support techniques/or data interpretation, statistical/or decision theory; attitude to health; patient participation*. Additionally, *preferences, willingness to pay, utilities, utility* were used as a free text. The search was limited to English, French, and Spanish languages.

Nearly 500 articles were identified from the initial search. A subset of these articles was selected for review

according to the following criteria. The a priori inclusion criteria were that the article represent original work on assessing patient preferences, specifically address women's health issues, that the study setting be a developed country or countries (defined as an Established Market Economy by the World Bank) and be published between 1965 and 1999. While exploration of preferences has begun in developing countries, these articles were not included for a lack of comparability about treatments on offer and the early developmental stage of the literature in this area. Articles addressing health issues affecting both genders were included if their title contained the word "women."

Two independent reviewers extracted information on study characteristics for all articles. The characteristics recorded included year of publication; clinical topic or health issue; country(ies) where the study was carried out; gender; race and age of participants; study design; setting in which the study was conducted; preference elicitation technique used; type of preference addressed, meaning what was the choice for or about; use of other health-related quality of life scale; type of information provided in scenario descriptions; how information about treatments was presented; preference method used; type of preference elicited; if the preference involved the respondent, others, or both; the situation in which the preference was stated, for example hypothetical treatment without the condition; data analytic techniques used; stated results; and limitations. A copy of the extraction survey is available from the authors. When disagreement arose, a third reviewer was consulted for adjudication.

Qualitative and quantitative techniques were used to analyze the data collected through record extraction. Where possible frequencies and means were compared using appropriate statistical techniques. SAS software was used for the quantitative analyses. For those articles that involved the same study population and/or preference questions about the same procedure or disease, qualitative analysis was used to examine agreement regarding the findings.

## RESULTS

A total of 484 studies were identified from the original search, of which 75 studies were selected for review based on title and abstract. Five studies were excluded after reading, as they did not meet the inclusion requirements, which left seventy studies for assessment.

The number of published articles about women's health-care-related preferences has increased substantially over time (Table 1). During the 1980s, between two to five articles were published every two years. These numbers more than doubled during the period 1992–1999 with twelve to twenty-six articles published every two years. In the period of time studied, the USA accounts for 49 percent of all the studies published in women preferences for health care, followed by the United Kingdom (20 percent) and Canada (14 percent). Other countries that have performed studies in this area that

**Table 1.** Number of Studies by Years of Study

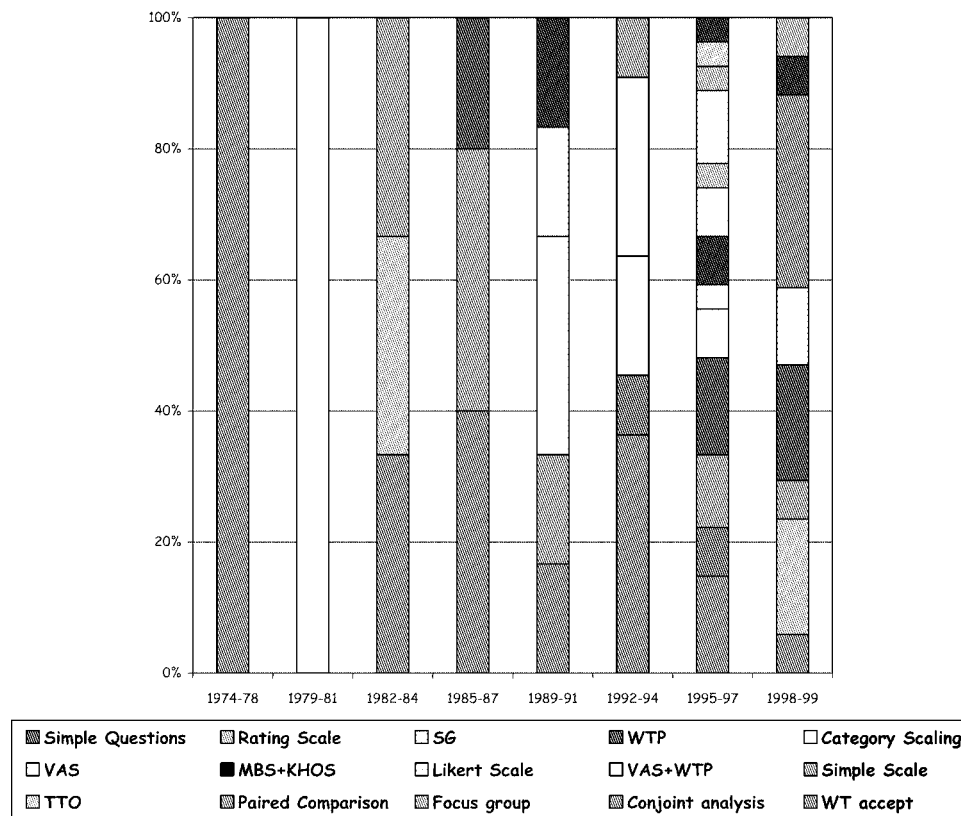
Year	No. of studies
1974–78	2
1979–81	2
1982–84	3
1985–87	5
1989–91	6
1992–94	11
1995–97	25
1998– (July) 1999	17

met our inclusion criteria were Sweden (6 percent), The Netherlands (4 percent), Australia (3 percent), and France (1 percent). One study includes data from three countries, the United Kingdom, France, and Germany (32).

Most of the studies focused on health conditions or issues that pertain predominantly or exclusively to women. Breast cancer was the clinical condition addressed most frequently, in 27 percent of studies (6;10;13;18;37;42;43;51;53–55;62;64;67;87;88;94;95;102) with prenatal diagnoses the second most common (20 percent; 8;11;12;20;24;34;44;45;59;66;68;76;77;97). Other common topics in order of frequency were reproductive techniques (10 percent; 24;30;31;38;78;81), hormone replacement therapy (6 percent; 48;73;96;105), abortion/miscarriage (7 percent; 2;36;46;79;83), treatment for menstrual disorders (7 percent; 17;35;78;86;100), and osteoporosis (1 percent; 33). Contraceptives use (32) treatments for genitourinary infection (90) and ovarian cancer (23;74), approaches to gynecologic exams (1;101) and maternity care (19), labor (14), total joint replacement (57), vaginal candidiasis (91), antenatal care (84), cardiac rehabilitation (69), colposcopy (4), and cancer (15) were also the subjects of a small number of studies.

In 87 percent of the cases, preference assessment was the purpose of the study, while in the remainder, women's preferences were assessed as an adjunct to the main study. In 89 percent of studies, women were asked about themselves only. White women were study participants more often than black women ( $p < .001$ ), who were included in 18 percent of studies. Mean age of respondents varied among studies and reflected the topics addressed. For example, respondents in studies concerning reproductive techniques (31;38;71;81) and those for prenatal testing were in their middle thirties (24;44;45;77). Breast cancer study participants, on the other hand, were usually in their fifties (10;18;43;53;55;64;67;87). Preferences were mainly studied in outpatient settings versus hospitals ( $p = .004$ ).

Preferences related to women's participation in health-care decision-making was the topic assessed most frequently, 21 percent of studies. Studies in this area included preferences for level of involvement in decisions, when to be told certain pieces of information, having or not having information about prognosis or likely outcomes, and having



**Figure 1.** Methods used to elicit preferences over time. VAS, Visual Analogue Scale; TTO, time trade-off; SG, standard gamble; MBS, Miller Behavioral Scale; KHOS, Krantz Health Opinion Survey; WT accept, willingness to accept; WTP, Willingness to pay.

information when it would not affect treatment course. The second most common preference topic studied was the effect of women’s preferences on management decisions about their care (20 percent). For example, one study examined the relationship between women’s stated preferences about treatments for their menstrual disorders and the treatment decision of practitioners (17). The third preference topic studied was to analyze the trade-off between risk and benefits when deciding for health-care interventions (15.7 percent), such as the trade-offs between risks and benefits of radiation therapy after conservative surgery for early stage breast cancer (43).

The fourth most common topic is examining women’s trade-offs between increase in survival and decrease in quality of life or an increase in costs (10 percent), to assess the preference for a trade-off between invasive and noninvasive technologies (9 percent), to study factors other than health gain alone that determine choice (7 percent). Only 4 percent of the studies have been performed to inform the debate for public policy questions; 4 percent to show differences in values for outcomes between healthy people and patients; 3 percent to assess how preferences influence compliance; 3 percent to study differences in preferences between patients and physicians; 1 percent to assess trade-off between palliative and curative treatment; 1 percent to assess additive-

ness of preferences over time; and 1 percent to assess how information affects preferences.

Although this review focused on women, men were also included as study subjects in 23 percent of the studies. The studies that include women’s and men’s preferences dealt with the following subjects: assistive reproductive techniques (30;31;38;71;81;82), amniocentesis (11;76), prenatal screening for genetic diseases (24;76), preference for the time to inform about presence of Down’s syndrome (34), women and physician preferences for health outcomes in estrogen replacement therapy (48), patient and doctor preferences in infection treatment (genitourinary [90]) and vaginal candidosis (91), preferences for cardiac rehabilitation program features (69), and elective surgery (57). In several of these studies, some systematic preferences between men and women have been observed. When utilities for different outcomes of care were studied, women usually gave higher utilities than men in regard to estrogen replacement therapy (48), therapeutic abortion (77), and chorionic villus sampling (11). Additionally, men and women rated differently the features of a cardiac rehabilitation program (69).

Figure 1 shows the evolution of preference elicitation methods over time. Table 1 shows the number of studies during each time period, while the Figure indicates the

**Table 2.** Time at Which Women's Preferences for Treatment/Test Decisions Were Solicited in Relation to Presence (+) or Absence (–) of the Clinical Condition in Question by the Percentage of Articles

	Clinical Status of Respondents			Total
	Only subjects with condition present (+)	Only subjects with condition Absent <sup>a</sup> (–)	Both subjects with condition present (+) and subjects with condition absent (–)	
Timing of preference assessment in relation to test/treatment				
Only before test/treatment episode (B)	4.3%	14.3%	10.0%	28.6%
Only after test/treatment episode (A)	12.9%	NA	2.9%	15.8%
Before test/treatment and after test/treatment (C)	2.9%	NA	1.4%	4.3%
Any combination of before, during, and after test/treatment (D)	44.3% <sup>b</sup>	NA	1.4%	45.7%
Not specified	5.7%	—	—	5.7%
Total	70.1%	14.3%	15.7%	100%

(B) This category refers the percentage of studies that include women who have the specified health condition and anticipate a subsequent treatment being necessary.

(A) This category refers the percentage of studies that include women having the specified health condition as a follow-up to a specific test/treatment episode.

(C) This category refers the percentage of studies that assess preferences both before and after test/treatment (but not during the test/treatment).

(D) This category refers the percentage of studies that assess preferences in women immediately before, during, or immediately after test/treatment.

<sup>a</sup>Subjects with respondents not having the condition necessarily will not receive treatment.

<sup>b</sup>This percentage include: 2.9% studies that assess preferences immediately after test/treatment; 1.4% immediately before and during test/treatment; 1.4% immediately before & during test/treatment & immediately after test/treatment.

distribution of preference methods used. Eighty-nine percent of studies used a cross-sectional design, providing a snapshot of preferences. Study power considerations were only explicitly addressed in 10 percent of the studies. The earliest methods of preference elicitation (simple question and rating scale) were the most simplistic. Over time, new methods to elicit preferences evolved, which peaked in the mid 1990s, during which thirteen different methods to elicit preferences were used.

While methods to assess preferences are proliferating, use of the standard gamble (SG) technique, considered to be the gold standard of preference assessment as it includes both elements of risk and choice, has decreased substantially over time. While use of the SG has decreased, the TTO has increased over time and was used in 29 percent of studies in 1998–1999. More recent methods used include conjoint analysis, willingness to accept, and combinations of methods. In nearly half (47 percent) of the studies, comparisons of treatments/tests were the choice alternatives specified in the preference assessment. The choice of treatment/test versus doing nothing, for example the willingness to pay for in vitro fertilization versus not intervening (38) was the preference option assessed in nearly a quarter of cases (24 percent). The type of information provided varied. Information regarding diseases, conditions, or procedures was given in 57 percent of studies. Of these, 63 percent gave specific information about the condition in question, while 10 percent provided multi-attribute information; some overlap occurred as 30 percent of studies provided both. Preferences about outcomes for a given test or procedures were addressed in thirty-five of the seventy studies reviewed. Sixty-eight percent of the outcome-focused studies addressed particular outcomes, such as health state, as opposed to sequential outcomes or a series of health states.

Outcomes were addressed in thirty-five of the seventy studies reviewed. Within this group, information on the positive and negative outcomes possibly associated with an intervention were given to patients in 57 percent ( $n = 20$ ) of the studies. Positive outcomes alone were presented in 9 percent of studies, while negative outcomes alone were presented in 14 percent of studies. In 20 percent of studies, researchers did not specify the type of outcome information presented to subjects for eliciting preferences in treatments/tests.

Nearly two-thirds of the studies reviewed used a single instrument by which to assess preference. Information about alternatives over which preferences were to be expressed was most commonly presented in written form, 58 percent of cases, such as cards or vignettes. Other mediums included personal interview (36 percent), brochure/information sheet (2 percent), audio-guided book (2 percent), and interactive video-disc (2 percent).

Table 2 shows when the preference assessment was made in relation to the clinical status of the respondent. Most of the studies (70 percent) that addressed questions about women's preferences for test/treatments were composed of respondents having the clinical condition in question. In addition, most posed the question when the women were deciding about treatment path that they were going to pursue (45.7 percent). Some studies (16 percent) asked women with and without the clinical condition about their preferences, while only (14 percent) of the studies addressed the preferences of women without the clinical condition.

Table 3 summarizes the findings related to women's preferences by topic for groups of studies exploring the same conditions. The table shows the dates of studies, the nature of the choice, and whether different studies agreed. As shown in the table, no relationship is suggested between



**Table 3.** Summary of Studies by Topic and Whether or Not Findings Related to Women's Preferences Agree or Disagree

Topic (and alternatives)	Clinical condition present (+)/absent (-)	Tools for info delivery	Method	Choice	Agree/disagree/in conclusive	Year	Sample size
<b>Breast cancer</b>							
Treatment (mastectomy vs conservative and radiation therapy)	-	Visual aids	Question <sup>(84)</sup>	Cons + RT	A	1982	138
	+	Decision board	SG + Feel T <sup>(40)</sup>	Cons + RT		1997	97
Decision involvement (active/passive/shared role)	+	Cards	CS <sup>(18)</sup>	Active		1997	1012
	+	Cards	CS <sup>(10)</sup>	Passive	D	1996	74
	+	Cards	CS <sup>(6)</sup>	Active/passive		1996	150
Informative tools help decisions (Yes vs No)	-/+	Decision board	Likert S <sup>(55)</sup>	Yes	A	1992	30
	+	Interactive video	Questions <sup>(35)</sup>	Yes		1998	49
	-	Booklet + passive video	Feel T <sup>(13)</sup>	Yes		1995	82
<b>Menstrual disorders</b>							
Treatment (medical vs surgical)	+	Brochure	Question <sup>(17)</sup>	No preference	I	1994	425
	+	Written	CS <sup>(88)</sup>	Surgical		1994	362
<b>Miscarriage/abortion</b>							
Treatment (medical vs surgical)	+	Written	CA <sup>(75)</sup>	No preference <sup>a</sup>	D	1997	196
	+	Written	Question <sup>(43)</sup>	Surgical		1993	363
	+	Written + oral	WTP <sup>(34)</sup>	Medical		1998	50
	+	Oral presentation	RS <sup>(71)</sup>	Medical		1979	77
	+	Written + oral	Question <sup>(2)</sup>	Medical		1992	488
<b>Antenatal screening</b>							
Desire for information (Yes vs No)	+	Written + oral	Simple S <sup>(23)</sup>	Yes	A	1997	2824
	+	Phone interview	Question <sup>(32)</sup>	Yes		1974	85
	-	Written + oral	WTP <sup>(8)</sup>	Yes		1985	parents 62
Screening for cystic fibrosis (stepwise vs couple)	Unknown	Oral data	WTP <sup>(60)</sup>	Stepwise	A	1994	450
	Unknown	Cards	SG <sup>(12)</sup>	Stepwise		1996	52
<b>Reproductive techniques/infertility</b>							
Infertility choice (medical vs IVF/surgical)	+	Written	CS <sup>(29)</sup>	Medical	A	1992	147
	+	Written	Category <sup>(28)</sup>	Medical		1989	147
Interest in availability of IVF services (Yes vs No)	+	Written	WTP <sup>(73)</sup>	Yes		1996	378
	+	Written	WTP <sup>(36)</sup>	Yes	A	1995	47
	+	Written	CA <sup>(74)</sup>	Yes		1998	couples 331

CS, Category scaling; CA, conjoint analysis; SG + Feel T, standard gamble and feeling thermometer; Likert, Likert Scale; WTP, willingness to pay; RS, Rating Scale; IVF, in vitro fertilization; Cons/RT, Conservative + Radiation Therapy.

<sup>a</sup>Among women expressing a preference, surgery was preferred.

the method used to elicit preferences from women and the content of the choices presented. For example, the willingness to pay method was used in both questions about antenatal screening, desire for information and for different treatments. Neither was a relationship suggested between the mode of information delivery and the type of choice presented. In the case of screening for cystic fibrosis, one study used oral data to deliver information and applied the willingness to pay technique (68) and the other used cards to deliver information and applies the standard gamble method (12).

No trend emerged between methods and tools and the preferences expressed. For example, in the case of antenatal

screening, the methods and tools used in the five studies were different, while the preference expressed by the women was the same. Alternatively, the preferences expressed by women differed among the five studies that addressed the issue of miscarriage/abortion (medical versus surgical) when different methods were used conjoint analysis (83), questions (2;46), willingness to pay (36), rating scale (79), and the choice made by women were different, some prefer the surgical approach (46;83) and others the medical approach (2;36;75).

In the case of decision involvement, the same tool was used and the preference valuations from women were different in terms of their ordinal rankings. In one study (18),

22 percent of women preferred the active role, 44 percent preferred the collaborative role, and 34 percent preferred the passive, while in two studies (6;10) 20 percent and 18 percent preferred the active role, 37 percent and 34 percent preferred the collaborative role, and 43 percent and 47 percent preferred the passive role. In some cases, women were unable to express a preference. In a study relating to preferences to treatment for abortion (46), 54 percent had no preference then subsequently expressed strong preferences, greater than 74 percent in both cases, for the treatment, medical or surgical abortion, to which they had been randomized.

## DISCUSSION

Involving patients, and citizens, in health-care decisions has become an important objective in recent health-care reforms around the world (5;58;93) and a key issue in trying to improve health-care quality (16). Different studies have shown that including or considering patient preferences for selected outcomes of care (9) or health-care services (52;60;80) increase patient satisfaction and improve patient perceptual outcomes (3;40;41;50;56;63). Evidence suggests that satisfied patients comply more with treatment regimens (65;98;103), return for care (7;65), and keep appointments (47). Consequently, they may achieve better outcomes (40) and make better use of health services (27;61). Also, studies indicate that satisfied patients may also improve physician satisfaction (72;89).

Finally, the principle of evidence-based medicine requires that the impact of care on people's lives become the center of health-care delivery ([www.cochraneconsumer.com](http://www.cochraneconsumer.com)). Evidence-based patient choice is considered a fundamental component of quality health care (49). Therefore, the need to include consumer's preferences in relation to her decisions regarding her own health-care advocates for further study.

Our research shows that the study of women's preferences for treatments, tests, or procedures in clinical care have increased over time. However, our review points to several gaps in the literature. We identify these gaps for the purpose of informing future research. As in other areas of clinical research, preferences from white women have been studied far more than black women and other ethnicities. Because ethnicity may affect preference choice, more studies addressing preferences in minority populations should be carried out. We also found this literature to be unrepresentative in terms of nationality, as 83 percent of the studies were conducted in the United States, United Kingdom, or Canada. Given that different cultures have different health-care values, the extrapolation of health-care choices based on preference studies from one country to others should be viewed with caution.

We also found limitations in terms of study design. The current literature is based on cross-sectional studies, thus

preferences are assessed at one point in time. Preferences may not be static over time; they may change as a function of personal experiences (i.e., adaption to a health state; 14) and psychological health (15) and changes in health-care technology. The studies included did not allow us to assess changes in women's preferences over time. Better study designs are needed to capture temporal patterns in women's preferences (e.g., serial cross-sectional or before/after studies, and panel studies). This shortcoming has been noted by other authors in relation to general studies of preferences (75).

Our review also illuminates the need to conduct studies on preferences in the inpatient setting. The majority of studies we reviewed were carried out at outpatient settings. While inpatients are a small sample of the real number of people affected with one disease, there may be systematic differences in preferences among outpatients versus inpatients. Additionally, hospital care accounts for a greater proportion of expenditures in a health care. Although eliciting preferences at hospital level could be seen as a risk for increasing costs, previous research have shown the opposite in several clinical conditions (28;99;104). Therefore, expanding preference elicitation to inpatient and other settings (e.g., intermediate care, residential care) is justified.

With respect to policy making, only 4 percent of the studies approached preferences to inform the debate for public policy questions. The reviewed studies typically used patients as the "judges" to determine preferences for individual treatment decisions or medical outcomes. As a general rule, preferences should be elicited from the population for which they are to be applied (75). Therefore, if policy decisions are to reflect consumer preferences, studies with this explicit focus are needed and preferences from a representative sample of the population should be used.

The disagreement shown in several studies that address the same procedures or clinical conditions is noteworthy. It leads us to suggest that the "external validity" of studies is weak, that is, you cannot generalize at this point from one study with one population to another. However, for some procedures, consensus on a treatment approach was reached and the findings from several studies suggested a single course of action. Further research into how to establish external validity in terms of preference investigations is an important area that may help in the design of macro health-care policy.

An important reason to study preferences is to promote informed decision-making. Consumers seek different roles regarding their level of involvement (e.g., active versus passive) in decisions about their care, and satisfaction with services is likely to reflect the ability to provide their preferred level of involvement. Accordingly, it is encouraging that a large proportion of the studies addressed preferences for women's participation in health-care decision-making, whereby providing some evidence about what women desire their roles to be.

The majority of studies presented both positive and negative outcomes of the intervention/treatment decisions, and one third attached probabilities to these outcomes. This rate is reassuring, as truly informed decision making requires having information on both positive and negative attributes. Additionally, previous research has shown that the way potential outcomes are framed influences decisions (87;92). This also applies to clinical decision making. For example, individuals tend to be risk-seeking when outcomes are framed positively (i.e., expressed in terms of cure or survival rates), but risk-averse when outcomes are framed negatively (i.e., expressed in terms of death or disease recurrence rates).

Most studies used a written tool to provide information about choices. Combination of tools, especially written/visual plus oral/audio, have been shown to increase patient knowledge and, hence, promote more informed decisions. One of the most interesting findings of this review is how methods for eliciting preferences have diffused over time. One important trend is the reduction in use of the SG, which was accompanied by the increase in use of the TTO. Because the TTO was developed as an “easier” alternative to the SG and behaves similarly, this trend is not surprising.

The influx of new methods in the mid-late 1990s seem to reflect efforts to make preference solicitation easier to understand as well as standardize the measurement. Accordingly, one must consider the trade-off in terms of validity, reliability, and ease of use. The SG generally has better psychometric properties than the other methods (with the exception in some cases of the TTO) and is the only tool to incorporate risk explicitly in the decision (21). However, because of its high respondent burden relative to the others, it not feasible for large population-based studies. For these situations, simple response techniques such as category scaling and rating scales may be more appropriate. Also rating scales are often used for large studies, and in some cases, rating scale values have been converted to SG-like utility values (85).

Several limitations of our study should be noted. Our search was confined to English, French, and Spanish, which may have limited our ability to detect patterns of cross-country preferences. However, because authors from non-English speaking countries frequently publish in English language journals and we found relatively few studies from other countries, we do not believe this strategy impacts our ability to conclude that more cross-country studies are needed. The sources of information used here were mainly biomedical databases, given that the objective of the study was to locate the literature on women’s health-related preferences. Limiting our search to these databases may have introduced a selection bias; however, we reviewed and included articles referenced within other articles, which included studies likely to be found in other databases and the grey literature. Similar to other authors, we did not search

EMBASE (26). We also did not search for unpublished literature.

## CONCLUSION AND RECOMMENDATIONS

In summary, the literature on preferences elicitation in women’s health care is limited to cross-sectional studies in a fairly homogeneous population, white women from the United States, United Kingdom, and Canada, and clinical setting, the outpatient setting. Preferences were generally elicited regarding decision-making roles or treatment decisions. The use of utility based methods (e.g., SG), has decreased over time while other methods have increased (e.g., TTO, rating scales). There is a need to expand the research in preference assessment to different populations, clinical settings, and beyond cross-sectional studies.

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