FACULDADE DE MEDICINA

PROGRAMA DE PÓS-GRADUAÇÃO EM MEDICINA: CIÊNCIAS MÉDICAS

TESE DE DOUTORADO

Qualidade de Vida e Infertilidade: Revisão Sistemática dos Achados da Literatura e Avanços na Investigação de Homens e Casais Inférteis

JULIANA LUZARDO RIGOL CHACHAMOVICH

Porto Alegre, Março de 2009

UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL

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SUMÁRIO

Resumo:

Introdução: A infertilidade é uma condição mundialmente prevalente e tem sido descrita como causadora de negativas repercussões psicossociais. Prejuízos nas áreas de relacionamento marital, satisfação sexual, bem-estar psicológico e sintomatologia psíquica têm sido associadas com tal condição. O construto Qualidade de Vida (QV) tem se tornado uma ferramenta útil quando o objetivo é ampliar o entendimento sobre os fenômenos complexos para desfechos além dos eminentemente clínicos, tais como sintomatologia e morbidade. Pesquisas que investigam Qualidade de Vida em populações inférteis apresentam-se em expansão recentemente. Entretanto, tais estudos ainda são escassos quando comparados às investigações de QV em outros distúrbios clínicos. Ademais, muitos estudos investigando Qualidade de Vida em infertilidade apresentam importantes limitações metodológicas, particularmente em relação aos instrumentos de aferição. Tais estudos contemplam sobremaneira a perspectiva feminina da infertilidade (em detrimento da masculina), e são inexistentes aqueles que investigam a experiência da díade marital que vivencia a infertilidade.

Objetivos: Analisar de modo sistemático os estudos originais feitos com amostras de sujeitos inférteis que apresentam como desfecho medidas de Qualidade de Vida. Demonstrar que sintomas depressivos e de ansiedade são preditores importantes de Qualidade de Vida em homens inférteis, e que sua presença media a relação entre variáveis sócio-demográficas e clínicas e o desfecho QV. Investigar se as percepções de Qualidade de Vida são concordantes ou discordantes dentro da díade marital. Explorar se os cônjuges são capazes de perceber adequadamente a QV de seus parceiros.

Método: Baseou-se numa revisão sistemática sobre Qualidade de Vida em Infertilidade, na qual foram usadas *infertility; childless; In Vitro Fertilization; Assisted Reproduction; Intra Cytoplasmic Sperm Injection* e; *Quality of life* como palavras-chave nas seguintes base de dados: *Medline, PsycInfo, Embase, Health and*

Psychosocial Instruments no período entre 1980 e Outubro de 2008. Nos estudos com dados originais, foram utilizadas Análises Multivariadas Hierárquicas para avaliar os preditores masculinos de Qualidade de Vida e testes *t* pareados, ANCOVA de Medidas Repetidas e Regressão Linear Múltipla para testar a congruência da qualidade de vida entre a díade marital.

Resultados: Há evidências indicando que a infertilidade apresenta reflexos negativos e extensos na qualidade de vida de mulheres. Os achados de literatura são controversos a respeito da QV de homens inférteis. Depressão e ansiedade, mesmo em níveis subclínicos, são preditores maiores de QV em homens. O casal infértil apresenta Qualidade de Vida predominantemente comparável entre seus membros. Em relação à congruência entre as percepções de QV a partir do próprio sujeito e de seu cônjuge, a hetero-avaliação mostrou-se significativamente prejudicada, com uma consistente tendência de o observador subestimar a real QV de seu parceiro. Este efeito não foi dependente do sexo do sujeito e do cônjuge.

Conclusões: A presente tese visou contribuir para o entendimento mais amplo dos sujeitos inférteis e as conseqüências psicossociais derivadas da experiência da infertilidade. O conhecimento da Qualidade de Vida em infertilidade apresenta carências, e as inovações recentes neste campo ainda não foram sistematicamente incorporadas às investigações em infertilidade. Entre estas, destaca-se especialmente a adoção de estratégias estatísticas mais refinadas e o reconhecimento de que estados mentais (particularmente depressão em variados níveis) guardam relação direta com Qualidade de Vida.

Descritores: Qualidade de vida, infertilidade, casal infértil, homem infértil.

Abstract

Introduction: Infertility is a worldwide prevalent condition, which has been described as causing negative psychosocial repercussions. Impairments on marital relationship, sexual satisfaction, psychological well-being, and psychiatric symptomatology are associated with this condition. The construct of quality of life (QOL) has become a useful tool in order to broaden the knowledge regarding complex phenomena. As such, it is able to expand the findings beyond the clinical outcomes, such as symptomatology and morbidity. The number of studies concerning quality of life among infertile populations has increased recently. Nevertheless, these studies are et scarce when compared to those investigating QOL among other clinical disorders. Moreover, several studies on quality of life in infertility have important limitations, particularly related to the instruments of assessment. They mainly approach the feminine perspective of infertility (and not the masculine), and there are not studies that explore the experience of the marital dyad facing infertility.

Method: The present thesis was based on a systematic review regarding quality of life and infertility. The following terms were used as keys for the search strategy: *infertility; childless; In Vitro Fertilization; Assisted Reproduction; Intra Cytoplasmic Sperm Injection*; and *quality of life.* The following databases were consulted: *Medline, PsycInfo, Embase, Health and Psychosocial Instruments, from* 1980 up to October 2008. For the papers based on original data, hierarchical multivariate analyses were used to assess the predictors of male quality of life. Paired t-tests, Repeated-Measures ANCOVA and multiple linear regressions were run to explore the congruence between the martial dyad QOL.

Results: There is evidence supporting that infertility has negative and extensive repercussions on women's quality of life. Findings reported in literature regarding QOL among infertile men are controversial. Depression and anxiety, even in

subclinical levels, are major predictors of QOL in men. The quality of life is comparable between the members of the infertile couple. Concerning the congruence between the self and the partner's perceptions of QOL, the proxy-based one proved not to be reliable. The partner has a consistent trend towards underestimating the actual partner's QOL. This finding was not sex-related.

Conclusions: The present thesis aimed to contribute to the comprehensive understanding of the infertile subject and the psychosocial consequences secondary to the experience of infertility. The field of Quality of Life still has blanks, and the recent innovations have not been systematically incorporated to the investigations on infertility. Among them, the adoption of more refined statistical strategies, and the acknowledgement that mental states (specially varied levels of depression) are associated to QOL outstand.

Keywords: Quality of life, infertility, infertile couple, infertile men.

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Apresentação

A infertilidade é uma condição mundialmente prevalente e tem estado associada a uma série de repercussões psicossociais negativas (WHO, 2002). A decisão postergada de ter filhos, em países desenvolvidos, e a grande ocorrência de doenças sexualmente transmissíveis, em locais em desenvolvimento, parecem contribuir de modo significativo para prevalência da infertilidade em todo o mundo (Evers, 2002). Prejuízos nas áreas de relacionamento marital, satisfação sexual, bem-estar psicológico e sintomatologia psíquica têm sido associadas com tal distúrbio e já contam com um consistente corpo teórico na literatura internacional (Nelson et al., 2008, Coeffin-Driol and Giami, 2004, Khademi et al., 2008, Drosdzol and Skrzypulec, 2008, Tan et al., 2008, Wischmann, 2008, Cousineau and Domar, 2007, Benyamini et al., 2008, Noorbala et al., 2008).

Nos últimos trinta anos, o constructo Qualidade de Vida tem sido crescentemente reconhecido. Por possuir metodologia científica, passou a ser usado em diversas áreas da saúde e em diferentes populações. Nas pesquisas de fenômenos complexos, o constructo Qualidade de Vida vem se mostrando uma ferramenta útil e destacada, quando o objetivo é testar novas hipóteses e não somente aquelas clínicas e classicamente avaliadas. Estudos abordando Qualidade de Vida em populações inférteis têm acompanhado a tendência mundial de expansão (Khayata et al., 2003, Fekkes et al., 2003, Ragni et al., 2005, Chachamovich et al., 2007, Lau et al., 2008, Drosdzol and Skrzypulec, 2008, Rashidi et al., 2008). Ainda que tais estudos estejam em crescente número, são, no entanto, escassos, quando comparamos a infertilidade com outros distúrbios clínicos. Além disso, uma significativa proporção dos estudos abordando Qualidade de Vida em infertilidade não apresentam aspectos metodológicos adequados, particularmente quanto aos instrumentos de aferição e ao controle de potenciais confundidores. Até o presente, os estudos exploratórios contemplam sobremaneira

a experiência feminina da infertilidade em detrimento da masculina. Quando a coleta de dados é realizada com os dois cônjuges, os dados femininos e masculinos têm sido analisados separadamente; inexistindo, pois, dados sobre a Qualidade de Vida do casal enquanto díade infértil.

Deste modo, a presente Tese de Doutorado tem como foco investigativo hipotetisar questões ainda não descritas na literatura internacional. O primeiro objetivo foi analisar de modo sistemático e crítico os estudos originais feitos com amostras inférteis que continham como desfecho medidas válidas de Qualidade de Vida. O segundo objetivo foi demonstrar que sintomas depressivos e de ansiedade são preditores importantes de Qualidade de Vida em homens inférteis e que a presença de tais sintomas media a relação entre variáveis sócio-demográficas e clínicas e Qualidade de Vida. O terceiro objetivo foi investigar se as percepções de Qualidade de Vida são concordantes ou discordantes entre o casal infértil. O quarto objetivo, por fim, avaliou se a percepção do cônjuge a respeito da QV do seu parceiro é acurada. O corpo da presente Tese de Doutorado constitui-se de:

a) Uma introdução ao artigo 1, uma introdução ao artigo 2 e uma introdução aos artigos 3 e 4, com as respectivas proposições das questões de pesquisa.
b) Quatro artigos científicos submetidos a periódicos internacionais
c) Considerações Finais
d) Referências Bibliográficas
e) Anexos

Introdução ao Artigo 1

O conceito Qualidade de Vida (QV) foi originário do Movimento de Psicologia Positiva Americano, sendo primeiramente usado como um indicador

social na década de 1960 (Diener E, 1999., Katschnig, 2006). Na literatura científica médica, tal conceito surgiu nos anos de 1980 de modo indireto, através de pesquisas endereçadas ao Estado de Saúde (*Health Status*). Foi a partir do início dos anos de 1990 que as publicações médicas passaram a utilizar QV como desfecho. Desde então, seu uso triplicou e passou a ser observado em todos os campos da Medicina (Katschnig, 2006).

Qualidade de Vida em infertilidade acompanhou tal crescimento numérico. Uma busca realizada na base de dados do PUBMED sem limitadores em 2006 usando como termos *infert* AND (Quality of life OR health related)* buscou 208 referências (Chachamovich, 2006). Passados dois anos, nova busca feita no mesmo banco de dados e utilizando os termos acima, sem restrição por limitadores, traz como resultado 1108 referências, evidenciando a mesma tendência.

Pesquisas de QV obtiveram visibilidade científica a partir de sua inclusão como desfecho em ensaios clínicos. O Jornal Lancet, no ano de 1995, publicou um editorial destacando que a medida de QV nos ensaios clínicos deveria existir, assim como as outras medidas clínicas investigadas (Editorial, 1995) Esta proposição veio ao encontro da necessidade de inserção de medidas de desfecho baseadas na percepção subjetiva dos pacientes (*Pacient-Reported Outcome*) (Valderas and Alonso, 2008). Desde então, a medida de QV tem sido exigida pelas autoridades reguladoras em saúde (como exemplo o *Food and Drug Administration*) (Katschnig, 2006, Hunt, 1997, Wiklund, 2004). Ainda, a medida de QV tem sido empregada para demonstrar o impacto das doenças em grupos diagnosticados, em *settings* clínicos e investigações epidemiológicas (Katschnig, 2006, Wiklund, 2004).

Inexiste, até o presente, consenso a respeito do conceito de QV (Bowling, 1995, Wilson and Cleary, 1995, Testa M, 1996, Hunt, 1997, Katschnig H, 1997, Berlim and Fleck, 2003, Katschnig, 2006, Gill and Feinstein, 1994). A raiz conceitual se origina de duas bases distintas denominadas de Modelo Funcionalista e Modelo de Satisfação e destas, por sua vez, derivam a diferenciação entre conceitos de Qualidade de Vida Genérica e de Qualidade de Vida Relacionada à Saúde (QVRS).

O primeiro, baseia-se na idéia de que QV se dá à custa de o indivíduo possuir habilidades para desempenhar de forma satisfatória as tarefas que valoriza. Nesta linha, as condições patológicas determinariam diminuição de qualidade de vida por limitar o funcionamento do individuo. Dentro deste entendimento, vários instrumentos de QVRS foram desenvolvidos. Neste grupo, o *Short-Form 36* (SF-36) é que mais se destaca pelo expressivo número de publicações nas mais diferentes áreas do conhecimento em saúde e pela vasta descrição de suas propriedades psicométricas.

O segundo, está baseado na relação entre expectativa individual e nível de aquisição. Derivado de estudos sobre felicidade e bem-estar, tal modelo aponta que Qualidade de Vida está relacionada ao nível de satisfação em diversos domínios definidos pelo próprio individuo. Um intenso debate ocorre a respeito de quais domínios deveriam ser satisfeitos para que o indivíduo tenha Qualidade de Vida. Alguns pesquisadores advogam para que seja adotada uma pirâmide hierárquica de necessidades: na base estariam as necessidades mais básicas, como alimentação e segurança e, no topo, estariam as necessidades mais evoluídas (como sentimento de auto-realização) (Fleck, 2007, Maslow, 1954, Maslow, 1998). No entanto, universalizar as necessidades poderia

representar uma simplificação das diferenças individuais e sociais, como por exemplo, as diferenças transculturais.

Representada pelo seu grupo técnico de pesquisa em Qualidade de Vida (WHOQOL), a Organização Mundial da Saúde (OMS) publicou o conceito que embasa o desenvolvimento dos seus instrumentos de Qualidade de Vida. Para a OMS, “Qualidade de Vida é a percepção do indivíduo de sua posição na vida no contexto da sua cultura e sistemas de valores nos quais ele vive e em relação aos seus objetivos, expectativas, padrões e preocupações” (Group, 1994). Esta definição traz consigo três áreas interdependentes que fundamentam seu construto: a percepção subjetiva do indivíduo, a multidimensionalidade e a presença de dimensões positivas e negativas.

Na área da saúde, o conceito de Qualidade de Vida se relaciona com outros afins. Os construtos possuem uma aplicação independente, e seus limites não são definidos. Alguns baseiam-se fundamentalmente em um paradigma biológico (*status de saúde, status funcional*) e outros possuem bases sociais e psicológicas (*bem-estar, satisfação* e *felicidade*). Qualidade de Vida possui intersecções com vários destes conceitos, mas seu aspecto mais genérico tem sido apontado como sendo diferenciado, pois saúde é apenas um de seus domínios (Fleck, 2008). A abrangência do conceito de Qualidade de Vida acaba por torná-lo aplicável a uma grande série de condições clínicas e epidemiológicas (Patrick, 2008). Ademais, a capacidade de mensuração do constructo Qualidade de Vida tem recentemente se destacado, uma vez que importantes grupos de pesquisa no tema têm aplicado esforços no sentido de construir instrumentos adequados, confiáveis e refinados (Katschnig, 2006).

Partindo da observação da crescente relevância do tema de qualidade de vida e da necessidade de ampliar a compreensão do fenômeno infertilidade,

optou-se por incluir como primeiro artigo da presente Tese de Doutorado uma revisão sobre esta intersecção. Como será demonstrado a seguir, conduziu-se uma revisão de literatura sobre os artigos que descreveram dados originais sobre qualidade de vida em mulheres, homens e casais inférteis. Dentre as diversas alternativas para revisar a literatura pertinente ao tema, a revisão sistemática (artigo 1) foi eleita em função de apresentar características metodológicas refinadas e de possuir maior credibilidade no meio acadêmico, quando comparada à revisão narrativa (Huwiler-Muntener et al., 2002, Moher et al., 1998).

De fato, há uma série de diferentes classificações de revisões de literatura, com variados graus de rigor. Revisões narrativas usualmente são breves e exploram um tema emergente a partir de evidências parciais, e, portanto, são especialmente sujeitas a reportar resultados incompletos e enviesados (Cook, 2005). Por outro lado, a adoção de metodologia científica para embasar a estratégia de revisão tem como objetivo reduzir os potenciais vieses e, pois, oferecer dados mais apropriados para a prática clínica (Roundtree et al., 2008).

Segundo a Cochrane Collaboration, a revisão sistemática caracteriza-se por utilizar metodologia explicitamente pré-definida. Baseia-se em uma série de passos desenhados com o objetivo de minimizar o risco de vieses: identificação de estudos relevantes, seleção de estudos para a revisão, coleção e combinação de dados (Cochrane, 2006). A adoção de estratégias metodologicamente controladas para a revisão de temas assume particular importância nos últimos anos, uma vez que a produção de artigos demonstra proliferação marcada, e que por vezes se torna uma tarefa árdua identificar contribuições válidas e relevantes acerca de um determinado tema (Cochrane, 2006).

Adicionalmente, revisões sistemáticas são consideradas mais refinadas do que revisões abertas, uma vez que seus métodos explícitos de inclusão e exclusão de artigos limita o viés do pesquisador. Um grande número de informações pode ser assimilado mais rapidamente por pesquisadores, clínicos e agentes políticos de saúde (Moher et al., 1999, Harbour and Miller, 2001).

Com uma proposta de síntese de dados disponíveis, a revisão sistemática possibilita que os resultados de diferentes estudos sejam formalmente comparáveis e que a possibilidade de generalização de tais resultados seja confirmada ou rejeitada. Quando rejeitada, novas hipóteses a serem testadas podem ser obtidas a partir da revisão sistematizada (Greenhalgh, 1997). Ainda, a revisão sistemática freqüentemente é mais apropriada quando as questões de pesquisa são focadas e específicas. Em última instância, os dados gerados por revisões sistemáticas são dados originais, uma vez que o resultado da revisão oferece ao leitor uma nova informação, e não somente um agrupamento não-sistematizado de dados de literatura (Cook et al., 1997).

Ainda que as revisões sistemáticas apresentem marcadas vantagens, a grande maioria dos artigos de revisão de literatura publicados recentemente são do tipo narrativo. Por exemplo, somente 5 das 100 revisões publicadas entre 1994 e 2005 acerca de dois tratamentos em reumatologia (etanercept e infliximab) foram sistemáticas. A comparação dos estudos dos dois grupos quanto a critérios de qualidade de revisões de literatura (critérios da QUOROM e de Cooks) evidenciou que as revisões sistemáticas apresentaram qualidade superior em relação à abrangência dos resultados, à informação quanto a conflitos de interesse e escores de impacto (Roundtree et al., 2008, Cook et al., 1995, Moher et al., 1999). O maior tempo demandado pelas revisões sistemáticas, a complexidade do processo e a necessidade de habilidades

científicas para tal fim acaba por levar um grande número de autores a optar por revisões abertas (Crowther and Cook, 2007).

Devido à superior qualidade metodológica dos resultados sistematizados, revisões sistemáticas são mais confiáveis enquanto base para tomada de decisões na prática clínica (Crowther and Cook, 2007). Uma vez que tais revisões servem a clínicos, agentes de política em saúde e *experts* para o desenvolvimento de diretrizes de intervenções (*guidelines*), o número de publicações envolvendo revisões sistemáticas estão em crescimento (Mulrow et al., 1997, Cook, 2008).

Entretanto, há potenciais limitações em estudos de revisão sistemática. Inicialmente, a heterogeneidade dos estudos incluídos pode acarretar efeitos nos achados finais e em seu uso. Tal heterogeneidade refere-se primariamente aos resultados (chamada de heterogeneidade estatística) ou aos sujeitos (chamada de heterogeneidade clínica). A primeira assume especial importância em revisões de intervenções, uma vez que a presença de heterogeneidade entre os resultados revisados acaba por reduzir a força das conclusões geradas na revisão sistemática. Já a segunda, pode ser interessante na medida em que assegura a validade externa (capacidade de generalização) dos resultados (Crowther and Cook, 2007). Deste modo, a inclusão de estudos com sujeitos em diferentes contextos clínicos acaba por ser importante para a utilização dos resultados gerados pela revisão sistemática.

A segunda limitação potencial refere-se às bases de dados consultadas no momento da identificação de estudos. Recomenda-se que o maior número de bases de dados com relevância e qualidade reconhecidas sejam pesquisadas, com o objetivo de não limitar o universo de artigos potencialmente recrutados (Cochrane, 2006).

Por fim, é importante observar que as revisões sistemáticas podem apresentar viés de publicação, uma vez que incluem estudos publicados em revistas revisadas por pares. Deste modo, há a possibilidade de que estudos que encontrem ausência de resultados significativos estejam sub-representados no grupo de artigos incluídos na revisão sistemática (Crowther and Cook, 2007; (Oxman AD, 1994). Adicionalmente, estudos truncados em função de aspectos éticos ou de resultados favoráveis precoces também são sub-representados (Bassler et al., 2007). A adoção de uma estratégia metodológica estrita e pré-definida pode resultar na não-inclusão de artigos relevantes, que não preencham os critérios de inclusão. Para tanto, é recomendado que os critérios iniciais sejam os menos restritivos possíveis, permitindo que um número maior de manuscritos sejam elegíveis para uma análise mais aprofundada (Cook et al., 1995). Por outro lado, a revisão sistemática permite ao leitor saber dos critérios de inclusão e, pois, ser crítico quanto ao método utilizado na revisão.

Por fim, a opção de realizar revisão sistemática foi sustentada pelo seu maior destaque em termos científicos, quando comparada a revisões abertas não-sistematizadas. Conseqüente à inclusão de metodologia científica e à produção de dados originais, revisões sistemáticas são freqüentemente publicadas em revistas qualificadas. Deste modo, a escolha de conduzir uma revisão sistemática de qualidade de vida em infertilidade parece atender a dois aspectos extremamente relevantes para a presente Tese. Primeiramente, uma revisão deste tipo permite o estudo de uma metodologia científica de revisão de extremo valor, o que é papel da formação de doutores. Em segundo lugar, a produção de um artigo de revisão sistemática pode ser encaminhada para futura publicação, de modo a dar visibilidade aos resultados gerados.

O Artigo 1 a seguir se propõe a sumarizar de modo sistemático os dados disponíveis na literatura internacional acerca da Qualidade de Vida de sujeitos inférteis. Particular atenção será dada a artigos originais cujos resultados tenham sido obtidos a partir de instrumentos de aferição adequados.

OBJETIVO DO ARTIGO 1

Revisar, por meio de metodologia de Revisão Sistemática, os estudos originais que utilizaram como desfecho medida válida de Qualidade de Vida em sujeitos inférteis.

ARTIGO 1

Investigating Quality of Life in infertility:

A systematic review

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Investigating Quality of Life in infertility: a systematic review

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Running title: **Quality of Life in infertility: a systematic review**

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ABSTRACT:

BACKGROUND: Quality of life (QOL) has been increasingly investigated in infertile subjects through distinct approaches. The purpose of the present paper is to carry out a systematic review of the published findings on quality of life among infertile women, men and couples.

METHODS: The search was carried out in Medline (Ovid), PsycInfo (Ovid), Embase, and Health and Psychosocial Instruments (HAPI). Papers published between January 1980 and the fifth week of October 2008 were compiled using the following keywords: infertility; childless*; In Vitro Fertilization; Assisted Reproduction; Intra Cytoplasmic Sperm Injection; and quality of life.

RESULTS: 12 studies were included in the review. Educational level, will to have children, poor marital relationship, previous In Vitro Fertilization attempt and duration of the infertility are predictors of lower Mental Health scores in infertile men. Infertile women have lower scores on Mental Health, Social Functioning and Emotional Behavior, as demonstrated by comparisons to normative data. Among infertile subjects, women have lower scores in several QOL domains in comparison to men. Previous IVF attempts, young age, lower educational were associated to impairments in Mental Health, Vitality, Psychological, Social Functioning, General Health, Social Relationships and Environment Component scores. No studies assessed QOL in couples.

CONCLUSIONS: There is evidence that indicates QOL impairment in infertile women. The repercussion in infertile men does not appear to be as intense. There is still a considerable lack of information regarding the impact of infertility on couples. The refinement of investigation strategies should lead to important contributions in the near future.

KEYWORDS: quality of life; infertility; systematic review

Investigating Quality of Life in infertility: a systematic review

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1. Introduction

Infertility is an increasingly prevalent condition. Currently, around 10-15% of the Western population is affected by infertility, and this figure is expected to rise even more (WHO, 2003). Particularly, the decision to delay having children (in developed countries), and the frequent occurrence of sexually transmitted diseases (in developing areas) seem to be related to the etiology of the increasing prevalence of infertility (Evers, 2002, Dyer, et al., 2005, Ombelet, et al., 2008). As consistently demonstrated, infertility has a strong and negative impact in several areas of the individual's life. For instance, impairments in marital relationship (Nelson, et al., 2008, Coeffin-Driol and Giami, 2004), sexual satisfaction (Khademi, et al., 2008, Drosdzol and Skrzypulec, 2008), psychosocial well-being (Tan, et al., 2008, Wischmann, 2008, Cousineau and Domar, 2007) and psychological correlates (Noorbala, et al., 2008, Benyamini, et al., 2008) are significantly associated with infertility.

One approach of capturing the impact of clinical conditions in a comprehensive way (i.e., beyond symptomatology) is by using quality of life (QOL) measurements (Berlim and Fleck, 2003, Higginson and Carr, 2001). As a way of emphasizing the psychosocial aspects of health conditions, the QOL concept seems to have replaced the "biopsychosocial model of disease, to counterbalance the weaknesses of the strict biomedical model (Katschnig, 2006). Furthermore, studies describing QOL in several diagnostic groups are increasing in number and are frequently carried out with the purpose of demonstrating how large the impact of a specific health condition is (Katschnig, 2006). It assumes a major value when complex conditions are explored, such as infertility (Chachamovich, et al., 2007). Quality of life was introduced in 1975 as a key term in medical indexes. In the past decades, research focusing on health outcomes measurement has experienced an enormous expansion and QOL is amongst the most important of these outcomes (Valderas and Alonso, 2008). In part, this marked expansion is related to regulatory agencies' requirement to include the so called Patient Reported Outcomes (PRO) measures in clinical trials (Valderas, et al., 2008, Leidy, et al., 1999, Wiklund, 2004). A Medline search illustrates that the number of indexed papers using "quality of life" as a Medical Subject Heading Term (MeSH) jumped from 13,998 between 1988-1998 to 47,531 between 1998-2008.

Regarding quality of life and infertility, there seems to be a consistent increase of publications in the last decade. Research groups have disseminated interesting findings in distinct cultural settings, such as Middle East (Khayata, et al., 2003), Asia (Lau, et al., 2008), Iran (Aliyeh and Laya, 2007), (Rashidi, et al., 2008), Western Europe (Ragni, et al., 2005, Fekkes, et al., 2003), Eastern Europe (Drosdzol and Skrzypulec, 2008) and South America (Chachamovich, Chachamovich, Zachia, Knauth and Passos, 2007). This trend represents a crucial inclusion of patient's subjective perception of infertility in the clinical practice.

In spite of the proliferation of studies on QOL, there is a concern regarding methodological issues. Gill and Feinstein, in a seminal paper, examined 75 articles describing the use of QOL instruments and found that only 15% of them attempted to define what was meant by QOL or to justify the choice of QOL measures (Gill and Feinstein, 1994). Moreover, only 27% of the examined articles included reasons for choosing a determined quality of life instrument. Sanders and colleagues demonstrated that as many as 40 different generic QOL instruments were used in 48 studies, among which several were developed by the investigators (i.e., with no previous validation) (Sanders, et al., 1998). This wide variety of instruments (and the extent to what they have been properly validated) obstructs comparisons between studies. Furthermore, results based on non-validated scales are more prone to demonstrate medication efficacy (Marshall, et al., 2000), and inconsistent instruments are associated to biased outcome measurements in clinical trials (Charman, et al., 2003).

The present paper has the aim to carry out a systematic review of the published findings on quality of life and infertile subjects. Particular attention will be directed to select papers presenting original data based on valid measures.

2. Method

2.1 Literature Search

To identify studies for this review, a comprehensive search was carried out in Medline (Ovid), PsycInfo (Ovid), Embase, and Health and Psychosocial Instruments (HAPI). Papers published between January 1980 and the fifth week of October 2008 were compiled using the following keywords: a) infertility; b) childless; c) In Vitro Fertilization (IVF); d) Assisted Reproduction (AR); Intra Cytoplasmic Sperm Injection (ICSI) and; e) quality of life. Articles published in English, French, Spanish and

Portuguese were included. These articles could be complemented by additional material identified by scanning reference lists of every selected publication.

We have explored different search strategies to determine the most comprehensive one, thus including the highest number of articles as possible at this stage. The final strategy consisted of the terms "(quality of life) AND (infert* OR childless*)". Since some papers regarding quality of life in infertile subjects are carried out in treatment settings (i.e., the quality of life measurement is included as a baseline assessment of an intervention), we also decided to include papers identified by the terms: a)"(quality of life) AND ((In Vitro Fertilization) OR IVF))"; b) "(quality of life) AND ((Assisted Reproduction) OR AR))"; and c) "(quality of life) AND ((Intra Cytoplasmic Sperm Injection) OR ICSI))".

2.2 Study Selection

Relevant articles (judged on the basis of the title and abstract) were retrieved for more detailed evaluation. Studies were included if they: a) were published in peer-reviewed journals; b) were written in English, French, Spanish or Portuguese; c) presented original findings; d) assessed quality of life as an outcome; e) included infertile subjects; and e) used validated quality of life measures. Instruments were considered valid either if their psychometric properties had been previously published or if the adequate performance was presented in the examined paper. Criteria for valid measures followed the ones made explicit by Streiner and Norman (NORMAN, 2008). The bibliographies of relevant articles were hand-searched for additional references. Working independently and in duplicate, we read the papers to determine if they met our inclusion criteria using eligibility record forms. At the abstract stage we had more lenient inclusion criteria. Figure 1 illustrates the study inclusion process.

INSERT FIGURE 1 ABOUT HERE

2.3 Data Extraction

By using a standardized form according to The Quality of Reporting of Meta-analyses conference (QUOROM) (Moher, et al., 1999), two authors have independently examined each included article. Researchers extracted data on study setting, study design, sampling strategy, sample size and characteristics, instruments for quality of life assessment and main results.

3. Results

The initial computer-based search identified 778 eligible articles. 156 duplicates were located and excluded. Out of the 622 papers, 556 (84.1%) do not include infertile subjects. 48 (7.7%) manuscripts were excluded since no quality of life measures were present. One paper was dropped by language reasons, and two were excluded by not presenting original data on quality of life. The additional online search was able to identify two articles that include a quality of life measure as part of a broad assessment. These studies were included for in-depth examination.

Eighteen studies were explored in detail (17 from the original online search and 1 identified by a hand-search of the references). Out of these, one was not peer-reviewed and 3 were based on non-validated quality of life measures. Mainly, non-validated scales were considered so due to modifications of the original instruments (i.e., item content alterations) without psychometric testing to ensure measurement adequacy. In addition, one study was excluded since the psychometric properties of the instrument were solely based on one pilot test and were not reported in the article. Finally, one study proved not to assess quality of life, and one article analyzed fertile and infertile subjects together (not allowing for infertile-specific results). Both were also excluded. Figure 1 illustrates the flowchart of the selection process.

INSERT FIGURE 1 ABOUT HERE

Following the scrutiny for methodological issues, 12 studies were included in the systematic review. Out of these, 1 paper reports a validated quality of life measure in the context of an infertility treatment, of which baseline data were reviewed in the present study. Results obtained immediately after treatment failure were not included, since they are likely to reflect a momentary condition rather than a stable quality of life perception. In opposite, some studies that enrolled subjects with previous IVF attempts were kept in the systematic review, since these subjects are representative of the natural course of infertility and reproductive health interventions. In fact, 50% of the reviewed studies included subjects who had undergone to assisted reproduction techniques in the past. Table 1 describes the reviewed studies.

All included studies had a cross-sectional design. Also, all of them were carried out in a clinical setting, mostly infertile services. Researchers usually identify and enroll

infertile subjects who seek investigation and/or treatment in a clinic for assisted reproduction. Typically, subjects have experienced infertility for a long period and have received previous treatment. The mean duration of infertility was 5.06 years (calculated from continuous data reported in 5 papers). The minimal duration was 0.5 years, and the maximum was 22 years (data from 10 studies).

It is important to observe that one study that fulfilled inclusion criteria centered its findings in the development of a new instrument to assess quality of life in infertile men. Thus, very limited data is offered in terms of QOL as an outcome (Schanz, et al., 2005).

Regarding the statistical analysis strategies, 4 papers compared observed data to normative data (Italy, Netherlands, USA and Scotland). Eight studies used multivariate analysis, and three utilized only univariate analysis. One paper applied classical test psychometrics to validate a new QOL measure.

Quality of life in infertile men

The majority of the findings regarding quality of life in men were obtained through studies with couples. In fact, only one paper addressed specifically men subjects, and it did not report quality of life outcomes. Eight studies assessed couples, and findings were described separately for men and women.

Basically, the articles are divided into two groups. The first one compares male's QOL scores to normative data, or to female's QOL scores. Interestingly, the results are somewhat discrepant. In Italy, infertile men seem to have similar QOL scores when compared to normative data (non-significant differences in all 8 SF-36 domains) (Ragni, Mosconi, Baldini, Somigliana, Vegetti, Caliari and Nicolosi, 2005). In opposite, comparisons against normative data showed decreased scores in Emotional Behaviour and Social Functioning in infertile Dutch men (Fekkes, Buitendijk, Verrips, Braat, Brewaeys, Dolfing, Kortman, Leerentveld and Macklon, 2003), as well as lower scores in Mental Health in North-American men (Shindel, et al., 2008). In addition, lower scores in Vitality were also reported in a study comparing infertile couples and fertile controls (Drosdzol and Skrzypulec, 2008), as well as lower scores for self-esteem, helping, friends and children domains (Quality of Life Inventory) (El-Messidi, et al., 2004).

The second group has investigated the predictors for low quality of life in infertile men. Findings emphasized that lower educational level, strong will to have

children, poor marital relationship, previous IVF attempt and duration of the infertility are associated with impaired Mental Health scores (Lau, Wang, Cheng, Kim, Yang and Tsui, 2008, Ragni, Mosconi, Baldini, Somigliana, Vegetti, Caliari and Nicolosi, 2005). In men aged 21-30 years old, planning IVF was also associated to lower scores in Emotional Behaviour (Fekkes, Buitendijk, Verrips, Braat, Brewaeys, Dolfing, Kortman, Leerentveld and Macklon, 2003). Moreover, being male was shown as a "protector predictor" for both the Physical and Mental Health Components of the SF36 instrument (Rashidi, Montazeri, Ramezanzadeh, Shariat, Abedinia and Ashrafi, 2008).

Quality of Life in infertile women

Findings regarding QOL of infertile women are reported either in specific studies (3 papers) or as part of investigations with couples (7 papers). Schindel et al, although having interviewed couples, reported QOL data only about males (Shindel, Nelson, Naughton, Ohebshalom and Mulhall, 2008). Comparisons to normative data consensually showed that infertile women have significant lower scores on Mental Health, Social Functioning, Role Emotional, and Emotional Behaviour (Ragni, Mosconi, Baldini, Somigliana, Vegetti, Caliari and Nicolosi, 2005, Fekkes, Buitendijk, Verrips, Braat, Brewaeys, Dolfing, Kortman, Leerentveld and Macklon, 2003, Souter, et al., 2002).

Among infertile subjects, women present lower scores in several QOL domains in comparison to men. This finding seems to be stable across studies carried out in distinct cultural settings. For example, Ragni et al reported that women had significant lower QOL in Social Functioning, Role Emotional and Mental Health (Ragni, Mosconi, Baldini, Somigliana, Vegetti, Caliari and Nicolosi, 2005), and Rashidi et al demonstrated lower scores for the 8 SF36 domains (Rashidi, Montazeri, Ramezanzadeh, Shariat, Abedinia and Ashrafi, 2008).

Further explorations of the clinical features that are associated with impaired quality of life have indicated two distinct sets of predictors. Some predictors appear to be reproducible and widely present in several studies, whereas others are less frequently demonstrated. Previous IVF attempts were associated to lower Mental Health scores, Vitality and Psychological (Chachamovich, Chachamovich, Zachia, Knauth and Passos, 2007, Ragni, Mosconi, Baldini, Somigliana, Vegetti, Caliari and Nicolosi, 2005). Young age is a predictor lower scores in Emotional Behaviour, Social Functioning, Physical Functioning, General Health, Mental Health and Role Emotional (Chachamovich, Chachamovich, Zachia, Knauth and Passos, 2007, Fekkes, Buitendijk, Verrips, Braat,

Brewaeys, Dolfing, Kortman, Leerentveld and Macklon, 2003, Souter, Hopton, Penney and Templeton, 2002). Lower educational level was also demonstrated to predict impaired scores in Mental Health, Social Relationships, Vitality, Environment and Physical Health Component (Chachamovich, Chachamovich, Zachia, Knauth and Passos, 2007, Rashidi, Montazeri, Ramezanzadeh, Shariat, Abedinia and Ashrafi, 2008).

Some other predictors have been less consistently identified, as shown in Table 1. For example, prior reproductive trait surgery, low income, poor sexual life, disagreeing to have counseling or having a husband who felt pressured in sex were indicated as important factors in not more than one study.

DISCUSSION

Assessing the experience of infertility in a comprehensive way has emerged as a crucial need to better understand this condition, and to support health policies (Chachamovich, Chachamovich, Zachia, Knauth and Passos, 2007). Moreover, exploring infertility broadly permits the identification of the factors that are implicated in a negative experience of this phenomenon. Ultimately, advances in this field could lead to the development of specific interventions to address the impact that infertility has on the affected subject. Investigations regarding quality of life represent a pathway to link the knowledge about the subjective perception of infertility and the need of reliable scientific data on this issue (WHOQOL-Group, 1995). As a matter of fact, QOL has been increasingly reported in several distinct conditions, and it has been included as an endpoint measure in clinical trials and intervention studies (Bezjak, et al., 2008, Mark, et al., 2008)

As far as we are aware this is the first systematic review to examine the quality of life in infertile subjects. The present study has found some important results. Firstly, quality of life has been assessed only in a cross-sectional design, and in a clinical setting. The only study that included a longitudinal investigation was not retained in this review, since the follow-up assessment included both subjects with children and still infertile, and specific data about the childless subjects were not shown (Abbey, et al., 1994). Since treatment failure is relatively frequent in this condition, longitudinal studies are of great importance to detect which factors are determinant for quality of life impairment when the treatment outcome is not favorable. Regarding the setting, it could be expected that the majority of the investigations would include subjects from assisted reproduction services, due to logistic reasons. However, these services are often

restricted in some contexts, and not a representative sample of the infertile population has access to them (Beckman and Harvey, 2005). In some countries, infertility treatment is not offered by the public health agencies, and they are not affordable for several patients (Nachtigall, 2006). Thus, we believe that the present findings on QOL and infertility should not be extrapolated for the general population. Community-based studies would be necessary to verify potential discrepancies in QOL and its predictors between clinical and non-clinical populations. On the other hand, including subjects seeking reproductive treatment contribute to the external validity of these findings, they are often the subjects that health professionals will be able to help.

Three studies were excluded due to insufficient reports on the psychometric properties of the used instrument. Typically, previously validated instruments were adjusted to infertile subjects without following testing. Even minor alterations in item content or wording may result in major changes in psychometric properties, and data should not be credible if they are not generated by reliable instruments (DeVon, et al., 2007). Furthermore, item modification may be in line with authors' theoretical hypothesis, especially if they do not come from focus groups with patients or from another less biased strategy. As a consequence, the reliability of the results may be somewhat affected (Sajid, et al., 2008). In opposite, validated results permit the comparability of results across studies. The majority of the included studies have used multivariate analysis (particularly logistic regression) as the main statistical analysis. The option for validated instruments and more refined statistical strategies emphasize a trend toward high standard quality investigations. The substantial larger sample sizes of the more recent studies also corroborate this trend.

Findings consistently show that infertile women have lower quality of life scores when compared both to infertile men and to normative data. The QOL impairment seems to be present in different QOL domains, indicating a wide deleterious (rather than restricted) effect of infertility. In men, results describe a different pattern. Quality of life impairments are not consensual, and seem to be related to emotional areas (such as emotional behavior, self-esteem, and mental health) rather than physical aspects. The reviewed studies do not control the results for any psychiatric symptomatology. It has been extensively demonstrated that even subsyndromal depressive symptoms, for instance, are associated to decreased QOL (Chachamovich, et al., 2008, da Silva Lima and de Almeida Fleck, 2007, Goldney, et al., 2004). We could hypothesize that psychiatric symptomatology (which is more prevalent among women than men) could

play a role in the observed difference between men and women QOL (Goldney, Fisher, Dal Grande and Taylor, 2004). Controlled studies are required to test this theoretical hypothesis.

Although several studies have interviewed infertile couples, results are only reported for women and men separately. Interestingly, no findings have been reported exploring the couple as a unit (i.e., comparing the impact of infertility across the pair, or detecting predictors for concordant or discordant QOL perceptions).

Some limitations of the present study have to be taken into account. Although we identified a large number of potential studies for inclusion, most studies were not set up to directly address the aim of this review and were not able to meet our criteria for inclusion. As well as the possibility that we missed some studies during our searches, we excluded a large number of studies by requiring studies to report original data on quality of life trough a validated instrument. It is possible that relevant findings have not been included in this review. On the other hand, we have opted for decreasing the number of the studies in favor of assuring the quality of the results. Since this review is based on published data, it is possible that publication bias play a role in decreasing the representativeness of non-significant results.

In summary, there is substantial evidence that indicates quality of life impairment in infertile women. The repercussion of this condition in infertile men does not appear to be as intense, and more data is needed to confirm this observation. There is still a considerable lack of information regarding the impact of infertility on couples. The increasing refinement of investigation strategies in this field should lead to important contributions in the near future.

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Figure 1. QUOROM statement flow diagram for selection and inclusion of studies

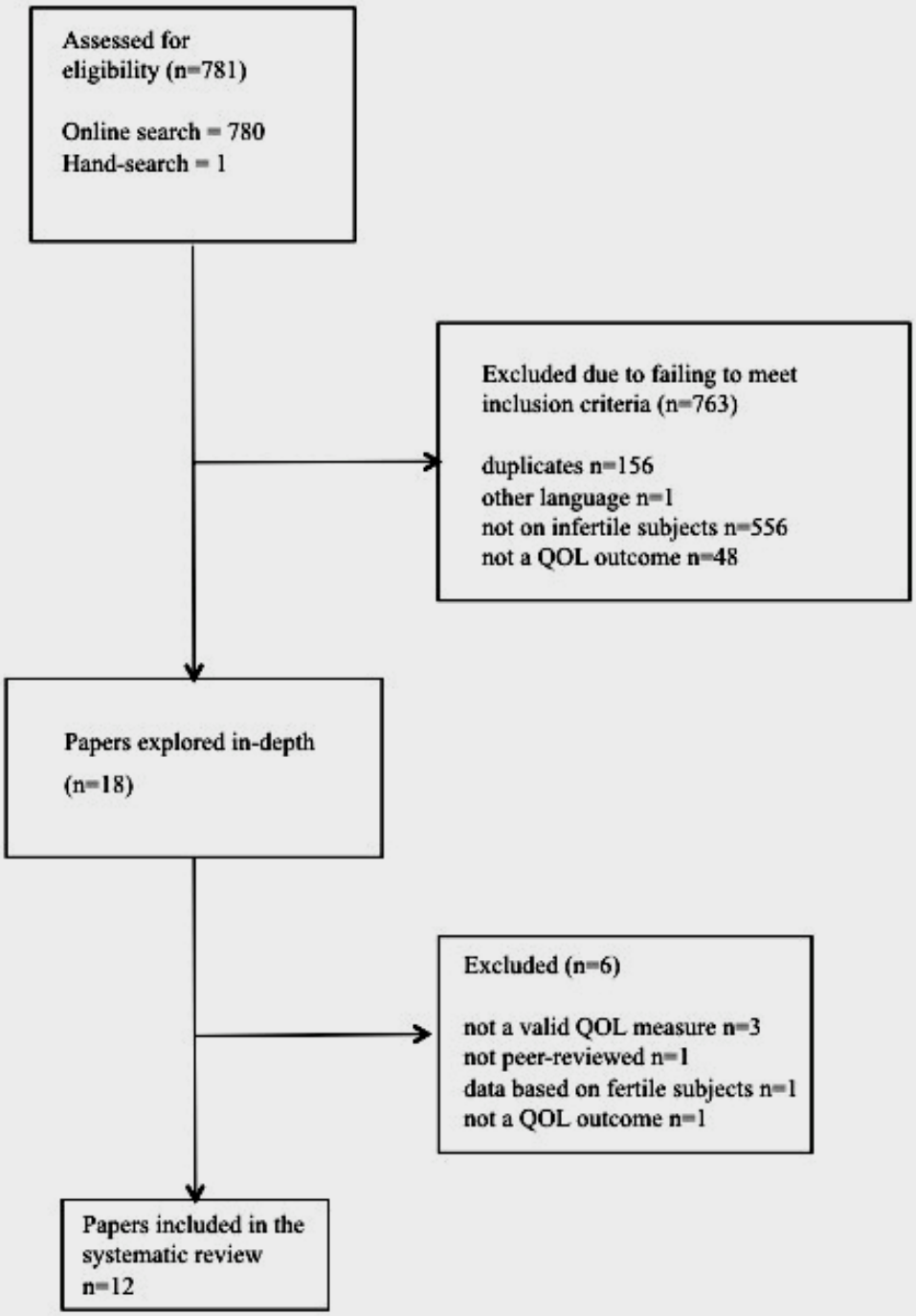

Table 1. Sampling and results of the included studies (n=12)

REFERENCE COUNTRY	SAMPLING	SAMPLE SIZE	SETTING	ASSESSMENT	RESULTS
Lau et al., 2008 China	Consecutive	192 infertile couples	Clinical	SF-36	For men, lower education, strong will to have children, poor marital relationship associated with ↓ MH QOL[a]. Lower income, self-pressure due to infertility, sense of humiliating spouse and spouse's perception of poor marital relationship were associated to ↓ V QOL[b]. For women, lower income, poor marital relationship, refusing that couples could live well without child, attributing to male causes and having husband who feel pressured in sex and disagree that infertility can be due male cause were associated with ↓ MH QOL[a]. Having husband who disagrees that infertility can be due male cause, poor marital relationship, and refusing that couple can live well without child were associated to ↓ V QOL[b].
Schanz et al., 2005 Germany	Consecutive	275 infertile men	Clinical	TLMK*	Satisfactory psychometric properties of the developed instrument. No data on QOL.
Ragni et al, 2005 Italy	Consecutive	1000 infertile couples	Clinical setting compared to general population	SF 36	Women had worse scores than men in SF [d], RE[e], and MH[a]. Prior IVF attempt was associated with ↓ MH QOL[a], and long duration of infertility was associated with ↓ PF[e] . No differences in QOL compared to normative data.
Fekkes et al, 2003 Netherlands	Not mentioned	425 infertile men 447 infertile	Clinical setting compared to	Sickness Impact Profile	Women planing IVF have ↓EB[f] than normative data. Highest difference

		women	general population		among young subjects. Young men planning IVF had also ↓ EB[f]. Young women and men had ↓ SF[g].
Monga et al, 2004 USA	Not mentioned	18 infertile couples 12 fertile couples	Clinical	Quality of Well-Being Scale	No differences were found between infertile and controls on QOL scores.
Chachamovich et al, 2007 Brazil	Consecutive	179 infertile women	Clinical	WHOQOL; SF36	The following predictors were identified: age (↓GH[h] and PF[e]), prior IVF attempt (↓V[b] and P[i]), prior reproductive trait surgery (↓GH[h] and E[j]), educational level (↓ V[b], MH[a], SR[k] and E[j]), and worse sexual life (↓ O[l])
Drosdzol and Skrzypulec, 2008 Poland	Convenience	206 infertile couples 190 fertile couples	Clinical	SF-36	Infertile women had lower scores on GH[h] , RE[e] , SF[c], V[b] and MH[a]. Infertile men presented lower scores on V[b].
Shindel et al, 2008 USA	Convenience	121 infertile couples	Clinical setting compared to general population	SF-36	Infertile men had lower scores on MH[a] when compared to normative data.
Rashidi et al, 2008 Scotland and Iran	Consecutive	514 infertile couples	Clinical	SF-36	Women had lower scores than men in all 8 domains. Being female and having low educational level predicted ↓Physical Health Component. Being young, female and low educational level predicted ↓ Mental Health Component.
Schmid et al, 2004 Austria	Consecutive	49 infertile women	Clinical	Cronins Health-Related QoL for women with PCOS	Moslem immigrants had lower scores on all domains (infertility, body weight, hirsutism, emotions, and menstrual problems) when compared to Austrian women.
Souter et al, 2002 Scotland	Consecutive	512 infertile women	Clinical setting compared to general	SF-36	Infertile women had lower scores than normative data in SF[c]. Women aged 25-34 had also lower scores in RE[d]. Women

			population		aged 16-24 had lower scores in MH[a]. Women who would take up counselling had better scores in MH[a], SF[c] and RE[d].
El Messidi et al, 2004 Canada	Convenience	100 infertile couples 50 fertile couples	Clinical	Quality of Life Inventory	Overall QOL decreased in infertile subjects. Female subjects had decreased QOL scores regarding self-esteem, money, play, helping and children. Male subjects presented decreased scores on self-esteem, helping, friends and children domains.

* Tübinger Lebensqualitätsfragebogen Für MÄNNER mit KINDERWUNSCH; a) Mental Health; b) Vitality; c) Social Functioning (SF36); d) Role Emotional; e) Physical Functioning; f) Emotional Behavior; g) Social Functioning (Subscales Social Interaction, Alertness, and Communication); h) General Health; i) Psychological; j) Environment; k) Social Relationship; l) Overall WHOQOL.

Introdução ao Artigo 2

Historicamente, a infertilidade e suas repercussões têm sido investigadas a partir do paradigma feminino (Paterno, 2008). Diversos estudos direcionaram suas hipóteses para amostras femininas, e disto pode ter resultado a superestimação do impacto da infertilidade em mulheres inférteis, em detrimento da experiência vivida por homens (Peterson et al., 2006a). Ainda, o maior número de pesquisas envolvendo mulheres e a maior taxa de participação destas em relação ao homens podem contribuir para a conclusão de que as mulheres são mais afetadas pela condição infértil (Jordan and Revenson, 1999).

Por outro lado, estudos também relatam que os homens tendem a minimizar as fragilidades e a apresentarem uma imagem mais favorável aos clínicos, permitindo-nos levantar a suspeita de que a inabilidade social masculina poderia interferir na compreensão das diferenças de impacto entre homens e mulheres inférteis (Lalos et al., 1985, Berg and Wilson, 1990, Harrison et al., 1986). Os autores ainda colocam que os estudos focando somente as mulheres podem ser o reflexo da construção social acerca da infertilidade. Neste tópico, destacam que até a década de 1980 vigia o entendimento de que a infertilidade era particularmente causada pela resistência feminina inconsciente à maternidade (Greil, 1997, Jordan and Revenson, 1999). Atualmente, este modelo, conhecido como modelo psicogênico, é rejeitado. Os estudos que embasavam esta idéia foram sistematicamente refutados em decorrência das amplas inconsistências metodológicas (Greil, 1997, Fassino et al., 2002)

Avanços no campo da Reprodução Assistida têm contribuído para o amplo debate acerca dos aspectos psicossociais envolvendo homens e

mulheres inférteis, assim como o aprimoramento clínico-diagnóstico. Embora seja menos conhecida socialmente, a infertilidade de causa masculina está presente em pelo menos metade do total de casos de infertilidade em todo mundo (Lee and Chu, 2001, Peronace et al., 2007, Inhorn, 2003). Alguns estudos têm relatado que os homens inférteis (independentemente da etiologia de infertilidade do casal) sofrem às custas da infertilidade, assim como as mulheres. Ainda que esparsos, tais estudos relatam raiva, culpa, ansiedade, depressão, estresse, isolamento, baixa auto-estima, baixa auto-confiança e sentimentos de inadequação, como alguns dos fatores implicados nas repercussões psicossociais em homens (Lee and Chu, 2001, Greil, 1997, Jordan and Revenson, 1999, Sherrod, 2006). Os homens inférteis parecem responder ao estresse de modo diferente, quando comparados às mulheres. Dentre tais diferenças, destacam-se o fato de não possuírem o desejo de falar abertamente sobre o problema da infertilidade e serem resistentes em buscar auxílio, principalmente quando a infertilidade do casal é causada pelo fator masculino (Lee and Chu, 2001, Greil, 1997).

Até o presente, existe uma diferença bastante ampla no número de publicações envolvendo amostras de mulheres e de homens inférteis. As mulheres são extensamente mais avaliadas que os homens para vários aspectos psicossociais. Satisfação sexual, conjugal e vida familiar (Lee et al., 2001, Orji et al., 2002), agressividade, estresse, auto-estima (Andrews et al., 1992, Matsubayashi et al., 2001), ansiedade, depressão (Oddens et al., 1999, Smeenk et al., 2001, Fassino et al., 2002), culpa, raiva (Lee et al., 2001, Fassino et al., 2002) e qualidade de vida (Khayata et al., 2003, van den Akker, 2005, Chachamovich et al., 2007) são alguns desfechos já investigados.

Os achados sobre homens inférteis são, predominantemente, provenientes de dados comparativos (em relação a mulheres inférteis), e apontam, de maneira geral, um impacto psicossocial menor do que o grupo feminino (Wright et al., 1991, Andrews et al., 1992, Lee et al., 2001, Verhaak et al., 2005).

Dentro da relativa escassez dos estudos envolvendo primordialmente os homens, destacam-se os relatos sobre a experiência de homens inférteis, cuja origem provém de causa masculina. Neste grupo, demonstrou-se que são freqüentes os altos níveis de estresse e de ansiedade (Lee et al., 2001, Nachtigall et al., 1992, Connolly et al., 1992). (Kedem et al., 1990). Em alguns estudos, os homens que possuem a suspeita de infertilidade de origem masculina possuem níveis mais altos de culpa, baixa auto-estima e aumento de isolamento social. Entretanto, tais achados não foram facilmente replicados em estudos com desenhos semelhantes (Lee et al., 2001, van Balen et al., 1996).

De modo geral, os limitados estudos que investigam as repercussões psicossociais no homem infértil possuem duas idéias centrais (Schanz et al., 2005, Peronace et al., 2007). A primeira é de que homens com diagnóstico de infertilidade podem sofrer mais do que aqueles com infertilidade de outra origem, embora tais achados não sejam unânimes. A segunda, propõe que a infertilidade de causa masculina promove um estigma social importante. A cultura do segredo, ainda existente, poderia levar a parceira a assumir a responsabilidade da infertilidade perante a rede social. Isto se daria em função da crença de que a mulher, mostrando-se responsável pela infertilidade, seria mais aceita e receberia mais suporte (Birenbaum-Carmeli et al., 1995). Ambas as linhas destacam-se, pois sugerem que o

condicionamento social do papel do gênero é tão importante quanto à percepção física da infertilidade. Ainda, apontam que a variável social subjetiva transcende o aspecto médico (Greil, 1997).

Além de desfechos psicossociais, ansiedade e depressão também têm sido explorados recentemente. Níveis de ansiedade e depressão estão presentes em grupos de homens e mulheres inférteis (Peterson et al., 2006b, Domar et al., 2000, Peterson et al., 2007, Ramezanzadeh et al., 2004, Fassino et al., 2002).

Em um estudo controlado, Fassino et al. (2002) investigaram os níveis de depressão e ansiedade em uma população de 156 casais inférteis e 80 casais férteis, utilizando avaliação duplo-cega. Relataram que os níveis de ansiedade e depressão foram significativamente mais elevados nos dois grupos inférteis quando comparados a controles. Através de metodologia distinta, Peterson et al. (2007) demonstrou o caráter preditor de níveis subclínicos de ansiedade em relação a estresse sexual em homens. Ainda, Peterson et al. (2006), em outro estudo avaliando sintomas de depressão e estratégias de enfrentamento em homens inférteis, mostraram que sujeitos que evitam enfrentar a infertilidade e relutam em aceitar o diagnóstico possuem uma vulnerabilidade maior para desenvolverem sintomas depressivos.

No que se refere a Qualidade de Vida, são poucas as pesquisas feitas com amostras de homens inférteis. De acordo com a revisão sistemática realizada no Artigo 1, foram evidenciados somente oito estudos metodologicamente conduzidos com este propósito. De modo geral, a Qualidade de Vida de homens inférteis parece não ter importante impacto quando estes são comparados às mulheres ou a dados normativos

populacionais. No entanto, os achados são díspares, ora mostrando repercussão em áreas emocionais e sociais (Comportamento Emocional, Saúde Mental e Funcionamento Social) (Shindel et al., 2008, Fekkes et al., 2003), ora relatando impacto nos aspectos físicos (Vitalidade) (Drosdzol and Skrzypulec, 2008), ou relatando a ausência de diferenças (Ragni et al., 2005).

Quando demonstradas diferenças entre Qualidade de Vida de homens inférteis, algumas características clínicas têm sido apontadas como associadas a estas alterações. Como variáveis associadas a baixos escores nos domínios de QV pode-se citar: baixo nível educacional, longo tempo de duração de infertilidade, prévia tentativa de Reprodução Assistida, pobre relacionamento marital e forte desejo de ter um filho como preditores de baixos escores no domínio Saúde Mental (Lau et al., 2008, Ragni et al., 2005). Ainda, idade entre 21-30 anos e estar planejando Fertilização *In Vitro* (FIV) apresentaram associação com baixos escores no domínio Comportamento Emocional (Fekkes et al., 2003).

Nos últimos anos, pesquisas em diversos campos têm demonstrado que os domínios de Qualidade de Vida são drasticamente afetados pela presença de sintomas de ansiedade e de depressão, mesmo quando estas apresentam-se sob as formas sub-sindrômicas (Chachamovich et al., 2008, da Silva Lima and de Almeida Fleck, 2007, Goldney et al., 2004)

Revicki et al. (2008) avaliaram o impacto da ansiedade sobre a Qualidade de Vida em pacientes com ansiedade generalizada num serviço de cuidados primários em saúde. Evidenciaram que os níveis de ansiedade tiveram significativo impacto em todos os domínios de qualidade de vida (desfecho medido). Ohaerri et al. (2008) em um estudo de base populacional no Kuwait com 3.303 sujeitos, identificaram que níveis de depressão e

ansiedade associaram-se significativamente a baixos escores em todos os domínios de QV. Ainda nesta linha, Schweikert et al., (2008) avaliaram o impacto da QV em 2950 sujeitos sobreviventes de Infarto do Miocárdio. Evidenciaram, entre outros, que os níveis de ansiedade e depressão também associaram-se significativamente a baixos escores nos dominios de Qualidade de Vida, principalmente em sujeitos mais jovens. Deste modo, a íntima associação entre sintomas de ansiedade e depressão com Qualidade de Vida parece ser intensa e presente em diversos contextos clínicos e de pesquisa.

Até o presente, as investigações de Qualidade de Vida em amostras inférteis não têm sido controladas para variáveis de ansiedade e depressão. As discrepantes diferenças na QV, obtidas a partir de amostras de homens inférteis, podem parcialmente se dever à ausência da estimação do efeito dos sintomas de depressão e ansiedade nas amostras estudadas. Uma vez que o impacto do controle de tal sintomatologia tem se mostrado significativo em uma série de investigações, pode-se hipotetisar que o controle estatístico da carga de tais sintomas possa gerar novos achados a respeito de QV de homens inférteis. Ademais, a discrepância presente em diversos achados relativos a QV de homens inférteis poderia ser explicada pela variação subjacente dos níveis de depressão e ansiedade.

Baseado nesta hipótese teórica, o Artigo 2 seguinte teve como objetivo central testar o efeito do controle de níveis de depressão e ansiedade em uma amostra de homens inférteis, quando o desfecho Qualidade de Vida é investigado.

OBJETIVO DO ARTIGO 2

Em uma amostra de homens inférteis: a) explorar características sócio-demográficas e clínicas como variáveis preditoras de Qualidade de Vida; b) testar se níveis de depressão e ansiedade são preditores de Qualidade de Vida; e c) investigar quais preditores se mantém relevantes quando controlados para depressão e ansiedade.

HIPÓTESE CONCEITUAL

Níveis de Depressão e Ansiedade são preditores de QV mais influentes do que as variáveis sócio-demográficas e clínicas e ainda, tais níveis alteram a relação das variáveis sócio-demográficas e clínicas com o desfecho (QV).

HIPÓTESE OPERACIONAL

H_0: Depressão e Ansiedade não estão associadas ao desfecho QV e não alteram a relação das variáveis sócio-demográficas e clínicas com o desfecho

H_a: Depressão e Ansiedade estão associadas ao desfecho QV e alteram a relação das variáveis sócio-demográficas e clínicas com o desfecho

ARTIGO 2

Depression and anxiety are major predictors of quality of life in infertile men

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Depression and anxiety are major predictors of quality of life in infertile men

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ABSTRACT

OBJECTIVE: to explore the impact of depressive and anxiety symptoms on quality of life and to test which predictors remain relevant after controlling for anxiety/depression.

DESIGN: Cross-sectional study

SETTING: assisted reproduction service of a university hospital

PATIENTS: 163 infertile men

INTERVENTIONS: none

MAIN OUTCOME MEASURES: demographic and clinical data form, the SF-36, WHOQOL-BREF, BDI and BAI.

RESULTS: Hierarchical multiple regressions included demographic and clinic variables as the first step, and depression and anxiety were added at the second step. Model 1 proved not to be accurate in predicting quality of life. R^2 values ranged from 0.029 (Social Functioning) to 0.149 (Mental Health). Eight domains were not associated with any of the predictors. In the second model a consistent R^2 increase was observed in all domains. R^2 of the QOL scores ranged from .209 (Role Physical) to .406 (Social Functioning). The intensity of the depression was a significant predictor for all the 13 outcomes. The load of depression was higher than the ones of the socio-demographic and clinical variables. Anxiety levels have also presented the same effect, but with less intensity.

CONCLUSIONS: Mild levels of depression and anxiety are major predictors of QOL in infertile men.

KEYWORDS**:** infertile men, quality of life, depression, anxiety, sublinical, predictors.

INTRODUCTION

Investigations on infertility are voluminous, and have shown that involuntary childlessness can be devastating, leaves many people unfulfilled and is associated with psychological distress (1). The effects of infertility seem to be comprehensive and wide, and are not restricted to sexual and/or reproductive areas of life (2). As such, the impact of infertility on several psychosocial aspects has been extensively demonstrated lately (1, 3-8). Impairments have been reported regarding distinct aspects, such as psychopathology (such as depression and anxiety) (9), relationship abilities (10), marital life (11, 12), family life (13), and economic terms (10).

There is an increasing interest in exploring infertility in a comprehensive way, taking into account the plethora of associated subjective perceptions. Furthermore, a systematic approach is needed in order to measure this phenomenon and allow comparability of studies. The quality of life (QOL) assessment has emerged as a well-established concept to address these issues. Being considered a restatement of the World Health Organization's commitment to the promotion of a holistic approach to health and healthcare(14), QOL assumes a particular relevance when clinicians and researchers intend to investigate complex and multidimensional health conditions (2). Quality of life assessments include aspects of health status, psychological well-being, physical and social functioning, as well as environmental and spiritual facets (15-23). Although several instruments have been developed to assess QOL, not all of them present adequate psychometric properties and/or clear theoretical background (2, 22, 24). The SF-36 (25) and the WHOQOL-BREF (26) are the most frequently used generic QOL instruments, and their adequate psychometric performances have been consistently described in distinct samples (27-31).

The last decade has witnessed a sustained increase of the published data on quality of life and infertility. The QOL impairment among infertile women has been

reported in several papers (2, 32-39). In fact, it consensually appears that infertility has a strong and pervasive pattern of impact in women with involuntary childlessness (1, 2, 32, 35, 39). This pattern reflects in decreased scores in all QOL domains, including psychological and physical areas, social relationships and environmental aspects (2, 33, 34, 39, 40). Moreover, studies that include couples have highlighted that the impact of infertility is consistently stronger in women than men (33, 34, 39-41).

Although the reported findings on QOL among women have shown mainly agreement, this seems not to be the case among infertile men. The scarce data published up to the present tend to reveal discrepancies with different study designs. Comparisons of QOL scores between infertile men and normative data were carried out in three countries. In Italy, Ragni et al. (40) showed no differences between these two groups, whereas statistically lower scores were found in the Netherlands (33) and the US (8). The former reported impairment in Emotional Behavior and Social Functioning domains, and the latter demonstrated lower Mental Health scores. Moreover, few studies have also explored the predictors of QOL in infertile men. They have showed that educational level; age, marital relationship, previous In Vitro Fertilization attempts, and duration of infertility were associated with lower scores in Mental Health and Emotional Behavior domains (33, 34, 41). Interestingly, the studies that were able to detect significant predictors revealed that only the mental and/or emotional aspects were affected in men.

In several fields of research, it has been demonstrated that quality of life is particularly vulnerable to depressive and anxiety symptoms (42-44). Not only a full-blown depressive diagnosis has a determinant impact on all QOL domains, but also very mild subsyndromal symptoms may affect QOL (45, 46). These findings have been replicated in several studies, including distinct samples (such as older adults,

primary care patients, patients suffering from generalized anxiety disorder, and community-based samples). Regarding the investigations of QOL and infertility, the published results have not been controlled for anxiety and depressive symptoms. We hypothesize that the dissimilarities of these findings may be related to different levels of anxiety and depressive symptoms across the studies' samples. Thus, depression and anxiety may mediate the relationship of the tested predictors and the QOL outcomes.

The aim of the present study is to explore the potential impact of depressive and anxiety symptoms on the quality of life of infertile men. In addition, we aim to test which predictors of QOL remain relevant if anxiety and depression symptoms are controlled for.

MATERIAL AND METHODS

Subjects

From April 2007 to December 2007, 163 male patients seen at the assisted reproduction service of a university hospital were asked to take part in this prospective cross-sectional study. The subjects (who were present with a scheduled appointment) were invited to complete the instruments while waiting for their medical visit. Patients were enrolled if they were seeking investigation for infertility, and if they had been unable to conceive after at least one year of unprotected sexual intercourses. All respondents were informed about the objectives of the study and the confidentiality of the data. Subjects signed consent forms. The project was approved by the Research Ethics Committee of the Hospital, which follows the Helsinki declaration of 1975, as revised in 1983. One subject declined to participate in the study. The final sample came to 162 infertile men.

Procedures

Students trained in the application of the following instruments carried out face-to-face interviews:

1) A socio-demographic and clinical data form, which assesses marital status, length of relationship with the present partner, changes in dialogue with the partner, socio-economic status, age, educational level, perceived etiology of infertility, medical diagnosis of the etiology of infertility, duration of conception attempts, number of previous attempts at reproduction techniques, type of assisted reproduction technique and sexual life satisfaction (self-reported);
2) The WHOQOL-BREF, which is a generic QOL assessment instrument, developed by the WHO along with several countries representing different cultures (26). It has been translated and validated into Portuguese (47) and provides an overall score for QOL, as well as individual scores by domain. Higher scores mean better QOL. Its four domains are physical health, psychological health, social relationships and environment. A large number of studies have proved its suitability to assess QOL in several health conditions, including infertility (2).
3) The Health Survey Short Form (SF-36), which is a multidimensional questionnaire of QOL. SF-36 has been widely used in a series of studies in different areas of knowledge, including infertility (2, 8, 34, 39-41). It assesses negative health aspects (such as diseases or perception of limitations) as well as positive ones (such as well-being). The scores range from 0 to 100, with 0 as an indicator of the worst QOL and 100 of the best. It is comprised of eight domains (physical functioning, role physical, social functioning, bodily pain,

mental health, role emotional, vitality and general health) (25). It has been translated and validated into Portuguese (48).

4) Beck Depression Inventory (BDI): is one of the most commonly used instruments to measure intensity of depression (49). It has been validated in different idioms, including Portuguese (50). The total BDI score is obtained from the sum of 21 items that assess both the Cognitive-Affective and the Somatic-Performance aspects of depression (51). Scores under 10 represent absence of depression; scores from 11 to 18 mild depression; from 19 to 29 moderate depression and above 30, severe depression (52).

5) Beck Anxiety Inventory (BAI): is a 21-item Likert scale self-report questionnaire measuring common symptoms of clinical anxiety, such a nervousness and fear of losing control. Respondents indicate the degree to which they are bothered by each symptom. Each symptom is rated on a 4-point scale ranging from 0 (not at all) to 3 (severely, I could barely stand it), and the total scores can range from 0 to 63, with higher scores corresponding to higher levels of anxiety. Thirteen items assess physiological symptoms, five describe cognitive aspects, and three represent both somatic and cognitive symptoms. The BAI has excellent internal consistency with psychiatric outpatients (53, 54). Common cutting scores of 10 suggest mild anxiety, with 19 reflecting moderate anxiety, and 30 indicating severe anxiety. The validated Portuguese version was used (50).

STATISTICAL ANALYSIS

Statistical analyses were run in SPSS 14.0 software (55). The total sample was analyzed through descriptive statistics. Hierarchical linear multiple regressions were

applied in each domain of WHOQOL-BREF and SF-36 instruments to detect the impact of depression and anxiety. The first model included age, educational level, marital relationship, duration of the marital relationship, duration of attempts to conceive, sexual life, perceived etiology of infertility, previous assisted reproduction technique, and having a child (or not) as independent variables. The second model added depression and anxiety levels as independent levels too.

A conservative approach was assumed to include independent variables in the multivariate analyses. As such, we have opted not to exclude the variables that fail to show significant results in univariate analyses, since high p values at this stage do not necessarily mean that these variables would not be relevant for the multivariate model. In opposite, we chose to include these variables in the multivariate analyses and check whether they prove to be relevant or not. In addition, most of them have been indicated as significant in other publications (33, 34).

Variance Inflation Factor (VIF) was inspected for the possibility of multicolinearity in each model, with results higher than 10 being considered as indicative of this problem (56). Results were described through R^2 changes and standardized β-values. Significance was set at an alpha level of 0.05.

Sample size was estimated based on the directions by Norman and Streiner (57). For multiple linear regressions, the sample should include a minimum of 10 subjects per each independent variable. Since the tested multivariate model comprised 12 predictors, a minimum of 120 subjects was required.

RESULTS

Demographics

The sample comprised 162 infertile men. Table 1 describes the characteristics of the sample. Briefly, the sample included not very young subjects (mean age of 36.1

± 7.69), belonging to the medium social class (54.3% of the class B and 37.7% of the class C), with intermediate educational level (71% had less than 12 years of formal schooling), with a long current relationship (mean of 9.13 years ± 4.72) and trying to conceive for a long time (46.8% had tried for more than 5 years). Regarding the sexual life satisfaction, the majority of subjects reported no alterations (74.7%), while 21.6% considered that the sexual life was better, and 3.7% indicated dissatisfaction. For 69.8% of the sample, the dialogue with the partner remained constant; 29.0% reported an increase of the quality of the dialogue, and only 1.2% declared that the dialogue had become worse after infertility was noticed.

The low BDI and BAI mean scores indicates that the sample is predominately non-depressed and non-anxious. Depression and anxiety levels were minimal in 85.2% and 83.3%; mild for 12.9% and 13% of the subjects; and moderate for only 1.9% and 3.7% of the sample respectively. No severe cases of depression or anxiety were present in the sample.

INSERT TABLE 1 ABOUT HERE

Multivariate Analyses

The clinical and socio-demographical variables were included in the hierarchical multiple linear regressions as predictors, and the QOL scores of each domain were assigned as dependent variables. Multicolinearity was not shown for any of the models (VIF values were equal to or lower than 1.6). The skewness and kurtosis of the QOL scores were checked to detect important departures from normality. Values proved to be between -2 and +2, indicating that no severe departure

from normality was found. This finding was corroborated by the analysis of the normal P-P and Q-Q plots.

The etiology of the infertility was investigated by two different means. First, men were required to report the subjective perception of the etiology (i.e., whether they believed that the etiology was feminine, masculine, both or unknown). Secondly, the medical chart of each subject was checked to gather data on the medical diagnosis of infertility. Interestingly, no differences were found between the medical diagnosis and the patient's perception of the etiology (χ^2 =0.705, p=0.872, df=3), indicating congruence of both assessments. Thus, the subjective perception of the etiology was kept for the multivariate stage. In addition to the statistical similarity between them, the subjective perception is more likely to have an effective impact of patient's quality of life (rather than a established diagnosis that the patient could not be aware of). For the multivariate analysis, etiology was entered as either a male or non-male factor.

The model 1 tested the load of each socio-demographic variable to predict QOL in thirteen scores (5 from WHOQOL-BREF and 8 from SF-36). Independent variables were selected because they represent important demographic variables and are widely reported in several studies (33, 34, 39, 40). Models' coefficient of determination and standardized-β coefficients are described in Table 2. A close inspection on the results revealed that this model proved not to be accurate in predicting quality of life. Coefficients of determination were extremely low. R^2 values ranged from 0.029 (Social Functioning Domain) to 0.149 (Mental Health Domain). Moreover, eight out of the 13 domains scores were not predicted by any of the independent variables. Among the independent variables, socio-economic status and changes in dialogue with partner were the most relevant ones, predicting the scores of

two domains each (Environmental and General Health; and Environmental and Mental Health, respectively).

INSERT TABLE 2 ABOUT HERE

Subsequently, the model 2 tested the effect of the inclusion of depressive and anxiety symptoms in the multivariate model. Table 3 illustrates the results of the model 2.

INSERT TABLE 3 ABOUT HERE

A consistent effect was observed. The coefficient of determination increased markedly in all domains. The percentage of the explained variance of the QOL scores ranged from .209 (Role Physical Domain) to .406 (Social Functioning Domain). The intensity of the depression symptoms proved to be a significant predictor for all the 13 outcomes. The load of depression symptoms was substantially higher than the ones of the socio-demographic and clinical variables, as shown by the standardized β-coefficients. The anxiety levels have also presented the same effect, but with less intensity. They were significant predictors in 8 out of 13 domains, and their standardized β-coefficients were consistently lower than the BDI ones. In addition, the inclusion of BDI and BAI in the multivariate model led to changes in the significance of some socio-demographic and clinical variables. For example, age was not a predictor of Mental Health in model 1, but proved to be a significant variable when anxiety and depression were included in the analysis. In opposite, it was indicated as a significant variable for Physical Functioning in the first model, but the

inclusion of BDI and BAI resulted in a non-significant effect of age in the model 2 (i.e., age was not significant when depression and anxiety were controlled).

DISCUSSION

In this study we aimed at exploring the predictors of quality of life of infertile men. In addition, we intended to demonstrate that depression and anxiety are strongly associated with QOL in this population. To the present, no study has evaluated the load of depression and anxiety on QOL among infertile subjects. Our results suggest that mild levels of depression and anxiety are major predictors of QOL, and have a much higher load than socio-demographical and clinical variables. Moreover, our findings showed that some of these variables proved to be non-significant when the model is controlled for anxiety and depression. It suggests that the association between these socio-demographic and clinical variables are probably mediated by anxiety and depression, and do not hold when the effect of psychopathology is parceled out. These findings assume particular relevance because the instruments that were used are indeed adequate for assessing QOL, depression and anxiety, and their psychometric performance have been extensively reported. Furthermore, the QOL instruments are representative of two complementary theroretical conceptualizations (the functional model and the satisfaction model). This ensures the validity of the present findings.

The present results have indicated that the majority of the explained variance of the quality of life scores relied on the anxiety and depression levels. The coefficients of determination observed in the model 1 were modest. In our study, the socio-demographic and clinical variables were not able to explain more than 15% of the QOL variance. It is important to note that these variables have been used in other investigations, and proved to be significant predictors. For example, poor marital

relationship, educational level, age and duration of attempts were described as predictors in studies using multivariate approaches (33, 34, 40). However, these studies do not report to what extent the multivariate models are explained by these independent variables. Furthermore, among our findings Environment and Mental Health presented the highest R^2 values. Concomitantly, only few QOL domains were predicted by this set of independent variables.

Dramatic improvements were observed when depression and anxiety level were included in the multivariate model (model 2). As shown in table 3, the coefficients of determination increased markedly, and the ΔR^2 accounts for almost all the model 2 coefficient of determination. This ultimately emphasizes that the load of depression and anxiety is rather higher than the socio-demographic and clinical one. This phenomenon has been consistently demonstrated in clinical and non-clinical samples, but has not been reported in infertile subjects up to the present. Chachamovich et al (45) described that clinical and subclinical depressive symptoms are the most important predictors of QOL in a large international sample of older adults, and showed that the QOL models were significantly improved when depression was included. Similar findings were reported in a sample of patients seeking primary care units (46) and in a nationwide sample in Kuwait (43).

While the R^2 observed in the models without anxiety and depression were extremely low, the ones from the model 2 were compatible to the reported in literature. Quality of life is a wide and comprehensive construct, and require complex models to provide adequate explanation (58). For instance, recent investigations that used multivariate approach on QOL reported model R^2 values of .568 (59), .475 (60) and .214-.476 (45). The present R^2 values ranged from .209 (Role Physical) to .406 (Social Functioning). These values are considered sizeable given the complex nature of the dependent variables (58).

Interestingly, we observed an alteration of the significant predictors from the model 1 to the model 2. The inclusion of depression and anxiety in the multivariate models led to different results, and suggests that some independent variables may not have a direct impact on QOL. Rather, they seem to be mediated by depression and anxiety. For example, the Environment domain was firstly predicted by socio-economic status, previous assisted reproduction attempt and alterations in dialogue with the partner. When the model was controlled for depression and anxiety, the duration of attempts proved to be a significant predictor, and socio-economic status showed not to remain significant. Changes were also present in Role Physical, Bodily Pain, Physical Functioning and Mental Health domains. As we have hypothesized, the inclusion of depression and anxiety in the multivariate models determined a distinct pattern of predictors. Importantly, the intensity of depression and anxiety in our sample is minimal, as shown by BDI and BAI means and standard deviations. Thus, these findings were significant in a predominantly non-depressed and non-anxious sample. It is expected that the load of this symptomatology is consistently higher in subjects with mild depression and/or anxiety.

Although both depression and anxiety levels determined an effect on the model fit and on the previous predictors, depression had a more consisted impact than anxiety. While depression was significant in all 13 domains, anxiety was not statistically significant in 5. Moreover, the load of depression was also higher in all domains, as demonstrated by the standardized β-coefficients. This pattern is corroborated by a recent study with a national sample in Kuwait. Authors indicated that major depressive disorder has a higher impact than generalized anxiety disorder in quality of life, as measured by the WHOQOL-BREF (43). Even though full-blown syndromes were included in this study, it seems that the higher impact of depression is also present in subsyndromal conditions.

Some independent variables showed significant power of prediction in the final model. Age showed a positive association with Mental Health, suggesting that younger men are more likely to experience QOL impairments than older ones. This finding is in line to the one described by Feekes et al (33) among subjects planning In Vitro Fertilization. This domain was also associated with length of the relationship, suggesting that longer relationships are linked to higher QOL. Educational level was negatively correlated to Role Emotional, which indicates that the higher number of formal schooling was associated to lower QOL scores in this domain.

Socio-economic status was associated with General Health domain. The negative association (as shown in Table 3) indicates that the higher the SES, the better the QOL, since the SES scale provides an inverse score. Previous assisted reproduction attempt showed association with Environment domain. This could be explained by the fact that this domain is closely related to concrete issues (rather than abstract satisfaction factors)(26, 61), and is more likely to be affected by financial aspects. In developing countries, assisted reproduction interventions are not provided by the public health system, and often are only available to the ones with more financial resources (62). Thus, it is expected that subjects that are seeking for assisted reproduction in Brazil are somewhat wealthier than the general population, and more satisfied with the environmental issues included in this domain.

Changes in dialogue with partner was a significant predictor for Mental Health and Role Physical domains, being positively associated with the former and negatively associated with the latter. The impairment of Mental Health among men who report problems in dialoguing with partner was also described by Lau et al (34). The duration of attempts was negatively associated with Environment and Bodily Pain domains. This variable has been cited as a predictor of low QOL among infertile women (40), but there are no data among men up to the present.

Regarding the perception of the etiology of infertility, men who perceived that the infertility was not male related had a higher QOL score in the Physical Functioning domain. It suggests that when the subject believes that he is not the one responsible for the inability to conceive, he reports a better QOL. Lau et al reported that infertile women who attribute the infertility to male causes had a lower QOL score in the Mental Health domain. This was not observed among men in that study. Interestingly, we have found an disctinct effect among men, and an impact in a different aspect of QOL (Physical versus Mental QOL) (34).

There are some limitations in the present study. The cross-sectional design does not allow inference of causality. It is possible to explore associations, but not to determine causal effects. Follow-up studies would be required to address this issue. Moreover, our study is based in a Brazilian sample, and cultural aspects may play a role in the identification of predictors and effects of depression and anxiety. However, it has been demonstrated that these symptoms have a relevant impact in several international samples. It is also important to observe that the tested models did not include other demographic, clinical and social variables, which could be potentially related to depression/anxiety and QOL, such as life stressors and social support. Finally, we point out that this is a clinically based investigation, which could somewhat interfere with the external validity of the findings.

In summary, the present study demonstrated that minimal levels of depression and anxiety are major predictors of quality of life. As such, it is crucial that health professionals involved with the treatment of infertile individuals should be particularly engaged in identifying even minor depressive and anxious symptomatology, and consequently providing these patients with adequate interventions, in order to avoid important quality of life impairments.

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Table 1 – Total sample characteristics (n=162)

Demographics	N (%) OR Mean (SD)
Age (years)	36.1 (±7.6)
Marital Status	
Legally married	85 (53.5)
Living with partner	74 (46.5)
Duration of relationship (years)	9.1 (±4.7)
Educational Level	
<9 years	47 (29)
9-11 years	68 (42)
>11 years	47 (29)
Perceived etiology of infertility	
Male	47 (29)
Female	65 (40.1)
Both	23 (14.2)
Unknown	27 (16.6)
Previous Assisted Reproduction	
No	136 (84)
One time	14 (8.6)
More than one	12 (7.4)
Type of Assisted Reproduction	
Artificial Insemination	17 (10.5)
In Vitro Fertilization	13 (8)
Intra cytoplasmic sperm injection	6 (3.7)
Ovulation Induction	1 (0.6)
Having at least one child	
No	124 (76.5)
Yes	38 (23.5)

Duration of attempt to conceive	
<2 years	28 (17.7)
2-5 years	56 (35.4)
>5 years	74 (46.8)
Socio-Economic Status	
Class A	11 (6.8)
Class B	88 (54.3)
Class C	61 (37.7)
Class D	2 (1.2)
BDI	4.7 (±5.1)
BAI	5.7 (±5.8)

Table 2 – R^2 values and standardized β-coefficients in multiple linear regressions for each WHOQOL-BREF and SF36 domains (model 1)

	WHOQOL-BREF					SF-36							
	Psychol	Physical	Social	Environ	Overall	Phys Fun	R Phys	B Pain	G Health	Vitality	S Funct	R Emot	Ment H
	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β	Std-β
Age	.037	-.059	.056	-.010	.055	**-.204**	-.118	-.046	.023	-.083	-.005	.079	.143
Duration of the relationship	.042	.104	.037	.117	.014	.049	.055	.023	.042	.180	.042	.021	**.203**
Educational level	.038	-.087	-.125	-.064	-.127	.020	.102	-.079	.032	-.082	-.080	**-.203**	-.172
Sexual life	.072	.134	.000	-.015	.108	.080	.071	.096	.010	.095	.027	.018	-.032
SES	-.095	-.185	-.158	**-.196**	-.148	.048	-.004	-.146	**-.249**	.038	-.128	-.002	-.035
Having children	.061	.011	.117	-.005	-.061	-.036	-.018	.088	-.017	.095	.043	.020	.014
Previous AR	-.004	-.049	.045	**.249**	.093	.097	-.011	.104	.049	.009	.066	.094	.144
Dialogue with partner	.173	-.018	.118	**.181**	.106	.031	-.135	.069	.116	.161	.051	.010	**.273**

Duration of attempts	-.054	-.041	.045	-.162	-.011	.00	-.038	-.122	-.106	.065	-.038	.002	-.054
Etiology	-.022	-.002	-.119	-.057	-.065	**.**158	-.039	-.079	.003	.064	-.052	-.044	-.038
Model R^2	.070	.059	.081	.145	.067	.090	.040	.073	.107	.107	.029	.044	.149

Table 2 – Legend

Psychol = Psychological; Environ= Environmental; Phys Fun = Physical Functioning; R Phys = Role Physical; B Pain = Bodily Pain; S Funct = Social Functioning; R Emot = Role Emotional; Ment H = Mental Health; educational level (1= < 9 years; 2= 9-11 years, 3= >11 years); sexual life (1=worse, 2=equal, 3=better); SES= socio-economic status (1=A, 2=B, 3=C, 4=D); Having children (1=no; 2=yes); Previous AR = Previous Assisted Reproduction (1=no, 2=yes); dialogue with partner(1=worse, 2=equal, 3=better); etiology (1=male, 2=non-male); BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory.

Bolded values are significant (p<.05)

Table 3 – R^2 values and standardized β-coefficients in multiple linear regressions for each WHOQOL-BREF and SF36 domains (model 2)

			WHOQOL-BREF						SF-36				
Model R^2	.246	.311	.225	.315	.230	.255	.209	.397	.228	.304	.406	.226	.403
R^2 Change (Model 2 – Model 1)	.176	.252	.144	.170	.163	.165	.169	.324	.121	.197	.377	.182	.254
	Psychol	**Physical**	**Social**	**Environ**	**Overall**	**Phys Fun**	**R Phys**	**B Pain**	**G Health**	**Vitality**	**S Funct**	**R Emot**	**Ment H**
	Std-β	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**	**Std-β**
Age	.084	.000	.095	.039	.100	-.154	-.075	.013	.063	.003	.072	.122	**.201**
Duration of the relationship	.010	.069	.003	.089	-.018	.024	.019	-.014	.016	.134	.010	-.018	**.166**
Educational level	.063	-.052	-.113	-.033	-.105	.054	.117	-.010	.053	-.040	-.019	**-.190**	-.139
Sexual life	.058	.115	-.009	-.032	.095	.062	.061	.071	-.002	.073	-.004	.009	.051
SES	-.024	-.097	-.099	-.124	-.080	.121	.062	-.037	**-.189**	.121	-.017	.065	.051
Having Children	.015	-.045	.076	-.050	-.105	-.080	-.062	.032	-.055	.030	-.023	-.025	-.041
Previous AR	-.014	-.069	.047	**.230**	.085	.074	-.011	.064	.038	-.013	.019	.097	.128
Dialogue with partner	.109	-.097	.062	.116	.044	-.034	**-.196**	-.020	.062	.090	-.047	-.052	**.194**
Duration of attempts	-.100	-.097	.005	**-.208**	-.056	.015	-.082	**-.172**	-.145	.015	-.107	-.043	-.110
Etiology of infertility	-.019	-.001	-.112	-.057	-.062	**.155**	-.032	-.080	.005	.069	-.060	-.035	-.036
BAI total	**-.199**	**-.280**	-.108	**-.242**	-.180	**-.269**	-.131	**-.418**	-.176	**-.293**	**-.472**	-.115	**-.261**
BDI total	**-.294**	**-.314**	**-.323**	**-.246**	**-.293**	**-.213**	**-.340**	**-.252**	**-.233**	**-.239**	**-.249**	**-.369**	**-.333**

Psychol = Psychological; Environ= Environmental; Phys Fun = Physical Functioning; R Phys = Role Physical; B Pain = Bodily Pain; S Funct = Social Functioning; R Emot = Role Emotional; Ment H = Mental Health; educational level (1= < 9 years; 2= 9-11 years, 3= >11 years); sexual life (1=worse, 2=equal, 3=better); SES= socio-economic status (1=A, 2=B, 3=C, 4=D); Having children (1=no; 2=yes); Previous AR = Previous Assisted Reproduction (1=no, 2=yes); dialogue with partner(1=worse, 2=equal, 3=better); etiology (1=male, 2=non-male); BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory.

Bolded values are significant ($p<.05$)

Introdução aos Artigos 3 e 4

Embora a prevalência da infertilidade seja difícil de ser mensurada devido às discrepâncias de definição, ela tem sido considerada um problema de ordem global atualmente. Estima-se que a infertilidade afete de 8 a 12% dos casais em todo o mundo (WHO, 2002). A sua prevalência, em algumas regiões africanas, por exemplo, assumem a ordem de mais de um terço dos casais (Folkvord et al., 2005). O paradoxo da infertilidade, tal como descrito por Inhorn (2003), ilustra que sua prevalência é maior em áreas do mundo de alta fertilidade. Este fenômeno é citado como “improdutivo no meio da fartura” (Sciarra, 1994, van Balen and Gerrits, 2001). Em sociedades nas quais as crianças são altamente desejadas, mulheres não utilizam métodos contraceptivos regularmente e, portanto expõem-se mais freqüentemente às DSTs, abortos inseguros e infecções pós-parto. Deste modo, cria-se uma situação dialética na qual o alto desejo de gestar contrasta com um aumento de taxas de infertilidade (Inhorn and Buss, 1994).

Estudos contemporâneos apontam a infertilidade como fonte de marcado sofrimento e destacam que ela tem sido adicionada à lista dos importantes estressores da vida adulta (Greil, 1997, Jordan and Revenson, 1999). Em muitas sociedades ocidentais e não ocidentais, ser infértil pode representar uma condição altamente estigmatizante e, acrescida à falta de recursos de saúde apropriados, pode levar homens e mulheres a uma condição de profundo sofrimento social (Inhorn, 2003).

São inúmeros os estudos existentes focados em explorar as diversas áreas do indivíduo impactadas pela infertilidade, variando desde avaliação de bem-estar global (Callan and Hennessey, 1988), ajustamento marital, satisfação e comportamento sexual (Lee et al., 2001, Mikulincer et al., 1998,

Monga et al., 2004) até sintomatologia específica de ansiedade e depressão (Fassino et al., 2002).

Greil (1997), em sua revisão crítica da literatura sobre infertilidade e sofrimento psicológico, coloca que suas conseqüências podem ser devastadoras. No entanto, aponta que os estudos disponíveis possuem limitações que comprometem o real entendimento da questão. Tais estudos avaliam demasiadamente população de mulheres, incluem amostras não representativas e usam técnicas estatísticas simplificadas.

Baseados em uma visão predominantemente medicalizada, a maior parte dos estudos tem tendido a comparar se os sujeitos inférteis apresentam maiores prejuízos relacionados å saúde do que sujeitos férteis ou população geral (ou seja, se a infertilidade está associada a disfunção ou comorbidades). Assim, o modo como os sujeitos inférteis percebem a experiência da infertilidade tem sido preterido pela maioria das investigações nesta área. Greil (1997) ainda assinala a importância de entender a problemática a partir da visão social (considerando os indivíduos inférteis como sujeitos sociais), e não somente através do enfoque médico (tratando os sujeitos inférteis exclusivamente como pacientes).

Embora, em geral, somente um membro do casal tenha o diagnóstico médico da infertilidade, é importante considerar a infertilidade como um estressor da dupla. Casais compartilham as suas identidades de crenças sobre a parentalidade, decidem juntos acerca do tratamento e, durante seu curso, suportam juntos a angústia do resultado médico (Jordan and Revenson, 1999). Estudos sugerem que o enfrentamento de tal estressor implica em um significativo reajuste psicossocial. O enfrentamento que a condição infértil impõe influencia no bem-estar do casal podendo gerar

sentimentos de raiva, surpresa, negação, culpa, frustração, isolamento, sentimento de falha social e pessoal, perda do controle, sentimento de baixa auto-eficácia, ansiedade e insatisfação marital (Jordan and Revenson, 1999)

A despeito do largo corpo de evidência assinalando a maior vulnerabilidade psicológica imposta pela infertilidade às mulheres, alguns autores destacam que tal entendimento merece ser avaliado com cautela. Jordan e Revenson (1999), em uma meta-análise sobre enfrentamento da infertilidade, consideraram que os achados contemporâneos sobre as mulheres inférteis têm sido superestimados. Argumentam, em primeiro lugar, que as mulheres são objeto de interesse bastante mais freqüente do que os homens. Adicionalmente, referem que as mesmas, por utilizarem mais os serviços de saúde, mais facilmente poderiam ser acessadas.

O número aumentado de estudos que investigam o impacto da infertilidade sobre desfechos psicossociais a partir de uma perspectiva individual (indivíduo infértil) contrasta com poucos estudos publicados que examinam as repercussões da infertilidade a partir do paradigma do casal infértil, enquanto unidade de análise (Andrews et al., 1991, Stanton et al., 1991, Peterson et al., 2003, Peterson et al., 2008).

Os estudos sobre teoria do sistema familiar propõem que o indivíduo pode ser mais amplamente entendido a partir da compreensão dos seus modos de relacionamento. Esta ferramenta teórica assume especial destaque na busca do entendimento das repercussões da infertilidade, uma vez que este diagnóstico é uma experiência compartilhada entre os membros do casal (Peterson et al., 2003). Uma das principais vantagens de obter dados de ambos os membros do casal é a possibilidade de investigar o peso da contribuição de cada parceiro nas variáveis de interesse. Uma das

características da pesquisa em constructos complexos e eminentemente diádicos é que a observação das variáveis de interesse (tais como satisfação e qualidade de vida) não são independentes. De modo oposto, há uma intrínseca influência da vivência individual de cada parceiro na determinação da vivência do outro. Em outras palavras, uma parcela da variação dos níveis de satisfação (ou qualidade de vida) de um indivíduo é direta ou indiretamente determinada pela variação do parceiro (Berg et al., 2001).

Tal abordagem relacional tem sido utilizada em diversas áreas do conhecimento. Entre estas, pode-se citar cuidados de saúde (Yeager et al., 1995), artrite reumatóide (Cremeans-Smith et al., 2003, Riemsma et al., 2000) e câncer (Romero et al., 2008).

Yeager e colegas (1995) exploraram as diferenças de conhecimento da dor de pacientes oncológicos e dos seus respectivos cuidadores. Ao entrevistar 86 pacientes oncológicos com dor e cuidadores de modo transversal, demonstraram que os cuidadores superestimam a severidade da dor de seus pacientes. Ademais, os cuidadores tenderam a perceber o estresse dos pacientes também de modo mais intenso. Interessantemente, a avaliação dos pacientes sobre o estresse dos cuidadores também indicou que aqueles pontuaram os níveis de estresse de modo superior a estes. Nesta linha, os autores acima citados, explorando a concordância de percepção dos cônjuges no contexto da dor oncológica, evidenciaram que a avaliação externa (tanto de cuidadores como de pacientes) consistentemente mostrou-se mais negativa quando comparado a auto-avaliação.

Em uma amostra de pacientes com dor músculo-esquelética, Cano et al. (2004) relataram achados que corroboram com os de Yeager et al. (1995). Demonstraram que os pacientes se percebem com mais dificuldades nas

áreas físicas e psicossociais do que seus cônjuges os percebem. Ademais, reportaram que os cônjuges percebem a dor dos pacientes como sendo mais severa do que os próprios pacientes descrevem. Ainda, encontraram que os níveis de depressão influenciaram na congruência de percepção nos desfechos medidos. Em casais cujo paciente preenchia critérios de depressão maior (de acordo com a entrevista semi-estruturada SCID-I), a discrepância de avaliações foi ainda maior.

Riemsma et al. (2000) e Cremeans-Smith et al. (2003) também encontraram incongruência na percepção entre cônjuges ao investigar bem-estar em pacientes com artrite reumatóide. Entretanto, os achados de tais autores indicam que o cônjuge ora superestima, ora subestima a limitação imposta por tal condição de saúde. Tal variação do padrão de congruência parece ser determinado pela presença de covariáveis (confundidores). Entre estas, as mais consistentemente implicadas foram sexo e nível de depressão dos pacientes e cônjuges (Cano et al., 2004, Riesma et al. 2000, e Cremeans-Smith et al., 2003).

No contexto de pacientes oncológicos, Romero et al. (2008) investigaram a congruência da percepção de ajustamento entre pacientes com câncer de mama em estágios I e II e seus cônjuges. Utilizando como desfechos estratégias de enfrentamento (*coping*), ajustamento e alterações de estado de humor, os autores encontraram nos 45 casais estudados inexistência de diferenças estatísticas em testes t-pareados em relação à percepção de ajustamento. Em subseqüentes testes multivariados, apontaram que a incongruência de percepção sobre ajustamento à doença foi mediadora do estado de humor e do uso de estratégias de enfrentamento. Tais autores sugerem que a incongruência dos cônjuges sobre o ajustamento

pode ter um impacto negativo sobre os sintomas de humor. Adicionalmente, destacam que a identificação da convergência ou discrepância de percepções entre cônjuges, e dos fatores que determinam tal convergência, é fundamental para o desenho e a implementação de intervenções capazes de determinar melhora do perfil psicossocial destes indivíduos.

No campo da infertilidade, os estudos abordando o funcionamento do casal como unidade de análise ainda são incipientes. Poucos autores têm se dedicado de modo estruturado a desenvolver linhas de pesquisa a respeito de tal tema. Tal observação assume ainda maior destaque quando se compara as escassas investigações em casais com os extensos estudos de uma série de fatores (tais como aspectos sociais, psicológicos, interacionais, funcionais, biológicos e psiquiátricos) em mulheres inférteis. Uma vez que a infertilidade é essencialmente um fenômeno que ocorre com casais, poder-se-ia esperar que mais interesse científico tivesse sido suscitado a respeito das repercussões da infertilidade nesta unidade.

Os poucos estudos existentes no contexto da infertilidade usando o casal como unidade de análise enfocam basicamente estratégias de enfrentamento (Stanton et al., 1991, Peterson et al., 2003, Peterson et al., 2006a, Peterson et al., 2008, Levin and Sher, 2000). Estes estudos mostram consistentemente que a infertilidade impacta os dois membros da díade, agindo como um estressor importante e capaz de desencadear estratégias de enfrentamento intensas. Adicionalmente, parece ser consensual que o modo como a infertilidade é enfrentada individualmente (ou seja, os padrões de enfrentamento utilizados) afeta o outro membro da dupla.

Peterson et al. (2003) relataram que casais com níveis de estresse social congruentes apresentaram maiores níveis de ajustamento marital

quando comparados com casais discordantes. Mulheres de casais com congruência de "necessidade de parentalidade" (entendida como a percepção de que ter filhos é algo essencial na vida) relataram níveis mais altos de satisfação marital. Já a incongruência na percepção do relacionamento e na necessidade de parentalidade esteve relacionada com altos níveis de sintomas depressivos em mulheres. Mais recentemente, Peterson et al. (2006) demonstraram que a utilização da estratégia de distanciamento afetivo (como estratégia de enfrentamento da infertilidade) por parte do homem está associada a níveis aumentados de sintomas depressivos entre as parceiras. Embora tal estratégia ajude o indivíduo a lidar com o seu sofrimento, os autores destacam que esta possui implicações para a parceira. Ainda, baixos níveis de satisfação marital foram encontrados quando a mulher utiliza estratégia de auto-controle emocional e seu companheiro apresenta níveis altos de estresse. Tal achado vai ao encontro dos descritos por Stanton et al. (1991).

Ainda a respeito de *coping* e infertilidade, Levin and Sher (2000) indicaram que a congruência de enfrentamento é dependente do tipo de estratégia usada pelo casal e do estágio da infertilidade. Ainda, apontaram que homens com maiores níveis de estresse pertenciam a casais que utilizavam a estratégia de "emoção-orientada" (*emocional-oriented coping*) como principal estratégia de enfrentamento. Peterson et al. (2008) reportaram que a estratégia "evitação-ativa" (*active-avoidance coping*) esteve associada a aumentados níveis de estresse pessoal, social e marital entre homens e mulheres. Por outro lado, a utilização de "confronto-ativo" (*active-confronting coping*) como estratégia de enfrentamento em mulheres esteve associada a significativo estresse marital dos seus parceiros.

De modo geral, os achados acima citados indicam um substancial corpo de evidência que suporta a hipótese de que a ocorrência de determinado fenômeno em um dos membros do casal acaba por determinar parcialmente o fenômeno no outro. Assim, como proposto teoricamente por Berg et al (2001), a determinação da satisfação marital e estratégias de enfrentamento apresentam-se influenciadas pelo nível de tais construtos nos parceiros.

Interessantemente, ainda são inexistentes estudos utilizando a abordagem relacional no que diz respeito à Qualidade de Vida em casais inférteis. Como o construto de Qualidade de Vida, tal como definido pelo Grupo WHOQOL (1995), baseia-se importantemente na percepção subjetiva do fenômeno e no componente relacional (seja com o meio-ambiente ou com relações sociais, por exemplo), pode-se supor que a Qualidade de Vida de um indivíduo esteja particularmente sujeita a influências diretas e indiretas de seu(a) parceiro(a). Em segundo lugar, o fato de Qualidade de Vida ser um construto caracteristicamente amplo, abstrato e complexo favorece tal suposição, de acordo com Berg et al (2001). Todavia, mesmo construtos mais específicos, tal como intensidade de dor, parecem sofrer a influência do observador (auto-percepção *vs* hetero-percepção), como anteriormente comentado.

Baseado nas suposições teóricas e nos escassos dados de investigações científicas observacionais, o Artigo 3 tem como objetivo avaliar congruência ou incongruência das percepções de Qualidade de Vida entre os membros do casal. Mais além, o artigo 4 visa investigar até que ponto a auto-percepção da Qualidade de Vida por um dos membros do casal é congruente com a hetero-percepção por parte do outro. Assim, pode-se explorar até que

ponto o cônjuge é capaz de perceber adequadamente a Qualidade de Vida de seu(ua) parceiro(a). Como depressão e sexo já foram implicados como confundidores em outros estudos de congruência entre casais, a presente investigação apresentará uma estimação da influência destas variáveis nos achados.

Partindo dos resultados disponíveis atualmente, pode-se ter como hipótese que haverá diferenças significativas entre os escores de Qualidade de Vida de homens e mulheres, sendo os últimos inferiores aos primeiros. Em relação a estimação de auto e hetero-percepção de Qualidade de Vida, tem-se como hipótese que os escores de Qualidade de Vida atribuídos pelos avaliadores externos (hetero-percepção) serão inferiores aos auto-atribuídos. Se confirmadas tais incongruências, estes achados poderão servir de base para que intervenções específicas possam contribuir para uma aproximação entre as percepções em casal, de modo a diminuir o impacto deletério que a infertilidade possui sobre a Qualidade de Vida.

OBJETIVO DO ARTIGO 3

Testar se a Qualidade de Vida é similar ou dissimilar entres os membros do casal infértil.

HIPÓTESE CONCEITUAL

A percepção de Qualidade de Vida entre os membros do casal infértil é diferente.

HIPÓTESE OPERACIONAL

H_0: Os escores de Qualidade de Vida entre os membros do casal são semelhantes

H_a: Os escores de Qualidade de Vida entre os membros do casal infértil são diferentes

ARTIGO 3

Congruence of Quality of Life among infertile men and women: Findings from a couple-based study

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Congruence of Quality of Life among infertile men and women:

Findings from a couple-based study

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Running title**: Congruence of Quality of Life within infertile couples**

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ABSTRACT:

BACKGROUND: It has been consistently demonstrated that infertility is associated to quality of life impairments. Interestingly, research has typically focused on individual's reactions to infertility (mainly women), without an examination of how the partner is reacting to the same condition. The few studies that assessed couples did not used couple-based analyses, consequently not considering the intra-couple effects.

OBJECTIVE: To explore the congruence of quality of life perception within infertile couples

METHODS: 162 couples were interviewed in an assisted reproduction clinic cross-sectionally. Subjects completed a socio-demographic form, the WHOQOL-BREF, and the BDI independently. The statistical strategy was guided in order to ensure that subjects would be explored within pairs at all times, and not as independent groups. Paired t-tests were run, and Cohen's effect was estimated. Depression levels were controlled by linear multiple regressions and repeated-measures ANCOVAs.

RESULTS: Out of the 5 QOL domain scores, only two showed a significant discrepancy (Psychological and Social Relationship Domains). Male depression was a significant predictor for all 5 QOL scores, while female depression was associated with three. Moreover, it was demonstrated that, except for the Psychological Domain and for the female depression on the Physical Domain, the load of depression was markedly low, accounting for not more than 7.5% of the variance of congruence between men's and women's QOL.

CONCLUSIONS: Our findings suggested that quality of life scores do not differ markedly within spouses. Since these results are not in line with the previous non-paired studies, further investigations are required to address this dissimilarity.

INTRODUCTION

In many societies around the world, the lack of pregnancy and the resulting childlessness are often highly stigmatizing, leading to profound social suffering for infertile couples (Inhorn, 2003, Sciarra, 1994, van Balen and Gerrits, 2001, van Balen and Inhorn, 2003). Rarely has infertility been acknowledged as a serious public health problem in the purportedly manly in overpopulated developing countries (WHO, 2002, Inhorn, 2003). As a result, few societies have incorporated the diagnosis and treatment of infertility into their family planning programs, meaning that state-sponsored infertility care remains marginal at best and generally does not include access to or coverage of Assisted Reproduction services (van Balen and Gerrits, 2001, Inhorn, 2003).

From an individual's perspective, realizing that one may not be capable to conceive a biological child has been systematically studied. In general, the psychosocial impact of infertility is comprehensive (Greil, 1997), and its impact on quality of life are consistent (Drosdzol and Skrzypulec, 2008, El-Messidi et al., 2004, Fassino et al., 2002, Fekkes et al., 2003, Khayata et al., 2003, Lau et al., 2008). In addition, infertile women seem to demonstrate stronger and more extensive quality of life impairment, compared to infertile men (Drosdzol and Skrzypulec, 2008, El-Messidi et al., 2004, Ragni et al., 2005, Rashidi et al., 2008).

Interestingly, research has typically focused on individual's reactions to infertility (mainly women), without an examination of how the partner is reacting to the same condition, or whether each partner's experience is affecting the other partner (Peterson et al., 2003). Family system theory proposes that individuals should also be examined in terms of the processes between people in relationships, rather than exclusively the individuals themselves (Peterson et al., 2003). Furthermore, it is

hypothesized that one's quality of life is influenced by quality of life of the other (Andrews et al., 1991, Greil, 1997). For example, there have been a handful of studies examining the impact of partner coping in couples experiencing infertility (Peterson et al., 2006a, Peterson et al., 2006b, Peterson et al., 2003, Peterson et al., 2008, Berghuis and Stanton, 2002, Mikulincer et al., 1998, Stanton et al., 1991). These studies show that the infertility provokes strong effect in both members of the couple and that one partner's coping impacts his or her partner's individual response to infertility stress.

Quality of life (QOL) has increasingly emerged as an extremely relevant outcome in complex and multidimensional health conditions (Testa, 1996, Chachamovich et al., 2007b, Skevington and O'Connell, 2004). Among them, studies on infertility have benefited from the inclusion of QOL as an endpoint, since it has made it possible to measure the impact of infertility in a broader way, comprehending outcomes beyond clinical symptomatology (Chachamovich et al., 2007b). Although the conceptualization of QOL is not consensual, the WHOQOL Group's definition has been widely accepted (Skevington and O'Connell, 2004, Leplege and Hunt, 1997, Calman, 1984, Cella and Tulsky, 1990). The World Health Organization has defined QOL as 'people's perception of their position in life in the context of the culture and value systems in which they live in relation to their objectives, expectations, standards and concerns', emphasizing the multidimensionality, subjective perception and presence of positive and negative dimensions in its theoretical conceptualization (Group, 1994).

Even though several studies have recruited infertile couples to investigate QOL, results are only reported for women and men separately (Drosdzol and Skrzypulec, 2008, Fekkes et al., 2003, Ragni et al., 2005, Rashidi et al., 2008). To the best of our knowledge, no published studies have evaluated the couple as a unit (dyad).

Considering that the infertility is essentially a shared condition, the present study aims to compare the quality of life between both partners (intra-couple comparison).

METHOD

Subjects

From April 2007 to December 2007, 163 couples seen at the assisted reproduction service of a university hospital were asked to participate in this prospective cross-sectional study. The 326 subjects (who were actually present with a scheduled appointment) were invited to complete the instruments while waiting for their medical appointment. All respondents were informed about the objectives of the study and the confidentiality of the data. Subjects signed consent forms. Interviewers were particularly oriented to ensure that the instruments were completed individually and independently, in order to avoid interference of one's responses in the other's. The project was approved by the Research Ethics Committee of the Hospital de Clínicas de Porto Alegre, which follows the Helsinki declaration of 1975, as revised in 1983. The sample came to 162 couples. Two subjects declined to participate in the study.

Procedures

Students trained in the application of the following instruments carried out face-to-face interviews:

6) A socio-demographic and clinical data form, which assesses marital status, length of relationship with the present partner, changes in dialogue with the partner, socio-economic status, age, educational level, perceived etiology of infertility, medical diagnosis of the etiology of infertility, duration of conception attempts, number of previous attempts at reproduction techniques, type of assisted reproduction technique and sexual life satisfaction (self-reported);
7) The WHOQOL-BREF, which is a generic QOL assessment instrument, developed by the WHO along with several countries representing different cultures (1998). It has been translated and validated into Portuguese (Fleck et al., 2000) and provides an overall score for QOL, as well as individual scores by domain. Higher scores mean better QOL. Its four domains are physical health, psychological health, social relationships and environment. A large number of studies have proved its suitability to assess QOL in several health conditions, including infertility (Chachamovich et al., 2007b).
8) Beck Depression Inventory (BDI): is one of the most commonly used instruments to measure intensity of depression (Trentini et al., 2005). It has been validated in different idioms, including Portuguese (Cunha, 2001). The total BDI score is obtained from the sum of 21 items that assess both the Cognitive-Affective and the Somatic-Performance aspects of depression (Gorenstein et al., 1999). Scores under 10 represent absence of depression; scores from 11 to 18 mild depression; from 19 to 29 moderate depression and above 30, severe depression (Beck AT, 1961).

Statistical Analyses

Data were analyzed with the couple as the unit of analysis. In order to conduct the analysis, the data were structured so that each row contained data for one couple (i.e., the couple was the subject).

The clinical and socio-demographic variables were described through descriptive statistics, and comparisons of means and proportions were run by paired t-tests and chi-square tests, respectively. The QOL scores were compared between infertile men and women by paired t-tests. Cohen's effect size coefficients were also reported.

Since depression levels were statistically different between man and woman, further analyses were carried out. It has been widely demonstrated that even mild subclinical symptoms of depression are intrinsically related to QOL outcomes in distinct clinical and non-clinical samples (Ohaeri et al., 2008, Revicki et al., 2008, Chachamovich et al., 2008, Schweikert et al., 2008, Zimmermann et al., 2008). Thus, to examine whether distinct levels of depressive symptoms were related to men-women differences, we conducted linear multiple regressions. Depression levels were included as independent variables. The dependent variable was the difference of QOL scores between man and woman within-couple. In order to indicate congruence or incongruence, these delta scores were converted to absolute values, being 0 the perfect congruence. Thus, significant β-coefficients indicated that independent variables correlated to the increase of the delta (i.e., contributing to incongruence). In addition, Repeated-Measures Analyses of Covariance were conducted, in order to quantify the load of depression symptoms on the outcome (congruence). Instead of classically using repeated measures

ANCOVA to investigate changes at two distinct stages separated by time, we considered the different perceptions of the same phenomenon. As such, we were particularly interested in the within-subjects results. The main advantage of this approach is keeping the matching between pairs, and controlling for potential confounders. Effect sizes were reported as Partial Eta Squares.

The statistical strategy was guided in order to ensure that subjects would be explored within pairs at all times, and not as independent groups. Statistical significance was set at $p<0.05$.

RESULTS

Demographics

The sample comprised 162 infertile couples. Table 1 describes the characteristics of the sample. Briefly, the sample included not very young subjects (mean age of men 36.1 ± 7.69; and women 32.11 ± 5.8; $p<0.001$), with no previous children (23.5% and 16.7% of men and women had children, respectively; $p=0.165$) and with no previous assisted reproduction attempts (84% of the couples). Most subjects had an intermediate educational level (71% and 72% had less than 12 years of formal schooling among men and women, respectively), with a long current relationship (mean of 9.13 years ± 4.7) and trying to conceive for a long time (46.8% had tried for more than 5 years). Concerning socio-economic status, most of couples belonged to social class B (medium class).

The low BDI mean scores indicated that the sample is predominately non-depressed. Depressive levels were minimal in 85.2% of men and 78.4% of women;

mild for 12.9% of men and 15.4% of women; and moderate for only 1.9% of men and 6.2% of women. No cases of severe depression were present in the sample. However, depression scores were significantly higher among women than men ($p<0.001$).

INSERT TABLE 1 ABOUT HERE

Congruence of QOL within couples

Paired t-tests were conducted to explore the difference of means between men and women within the 162 couples. Out of the 5 QOL domain scores, only two showed a significant discrepancy (Psychological and Social Relationship Domains). Men presented a higher mean score in the former (74.71 SD 12.10 *vs* 71.01 SD 12.47, $p=0.001$, Cohen's *d* coefficient = .301), while women had higher scores in the latter (76.39 SD 15.51 *vs* 72.50 SD 16.04, Cohen's *d* coefficient = .246). In the three domains without significant differences, men had a trend toward higher scores in two (Physical and Overall). Detailed results are presented in the Table 2.

INSERT TABLE 2 ABOUT HERE

A linear multiple analysis was carried out to explore whether (and to what extent) the male and female depression levels contribute to the QOL differences. Using the absolute values for the difference from men and women as dependent variables, results showed that male depression was a significant predictor for all 5 QOL scores. Three QOL scores presented association with female depression. Table 3 describes the results form the linear regression models. It is important to

observe that the delta scores were generated by subtracting women's QOL scores from men's (in each domain). Consequently, standardized-β scores of male depression are negative, while females' are positive. It indicates that male and female depression decrease the QOL scores, and an increase of male depression results in a lower delta, while higher female depression leads to an increased delta (due to the fact that the delta equation was put as Δ = male QOL - female QOL).

Since both male and female depressive symptoms showed a consistent effect on the difference (congruence) of QOL between men and women, further paired analyses were carried out. The Repeated-Measures ANCOVA corroborated the findings from the linear multiple regression analyses. Moreover, it demonstrated that, except for the Psychological Domain and for the female depression on the Physical Domain, the load of depression was markedly low, accounting for not more than 7.5% of the variance of congruence between men's and women's QOL. Women's depression was responsible for 21.6% and 19.5% of the variance of congruence on Psychological and Physical domains, respectively. Men's depression accounted for 11.3% of the variance of congruence on the former. Partial Eta Squares for the 5 domains are detailed in Table 3 below.

INSERT TABLE 3 ABOUT HERE

DISCUSSION

The present study aimed to explore the quality of life of infertile couples from a dyadic perspective, rather than from am individual point of view. Even though infertility is especially a condition experienced by the couple, the studies regarding quality of life have exclusively focused men and women separately. In

order to stress this objective, statistical approaches that keep matched-pairs were selected. We aimed to verify whether men and women have comparable quality of life scores within couples, and whether the paired results are similar to the ones obtained by independent comparisons.

Paired t-tests within-couple showed that only the Psychological and the Social Relationship Domains were statistically different. Men had better QOL on the former, but worse on the latter. Cohen's effect size coefficients were considerably low for these domains, indicating that intra-couple QOL differences were not intense. Studies that have explored this issue through non-paired group comparisons tended to show statistical differences of QOL, men having higher scores (Ragni et al., 2005). Interestingly, testing the present sample as independent groups (and thus using independent t-tests) resulted in higher *p* values (data not shown). It suggests that the discrepancy between the present findings and the previously reported ones is not a statistical artifact, but may probably be a consequence of the matching process. Another important aspect is the absence of clinically relevant depressive symptoms in the present sample. It has been shown that depression has a pervasive and deleterious effect on QOL (Chachamovich et al., 2008, da Silva Lima and de Almeida Fleck, 2007, Mann et al., 2008). Moreover, the prevalence of both clinical and subclinical depressive symptomatology is consistently higher among women, when compared to men (Kessler et al., 2005). Since the vast majority of the previous studies focusing QOL among infertile subjects have not included mental health assessments, it is possible that varying levels of depression may have contributed to lower QOL scores among women.

In our sample, the minimal levels of depression proved not to be a strong variable in explaining the man-woman QOL congruence. In fact, the only domain

in which depression played a considerable role was the Psychological. The intrinsic and strong association of depression and the Psychological Domain has been demonstrated in several clinical contexts (Berlim et al., 2008, Chachamovich et al., 2007a, Chachamovich et al., 2008, Hwang et al., 2008). Although no previous study described the correlation between depression and the congruent perception of Psychological QOL within couples, this is somewhat expectable. On the other hand, the fact that depression (both male's and/or female's) has explained very little of the variance of the congruence is intriguing. Recent reports have shown that even mild depressive symptoms have a much higher load than other socio-demographical variables in predicting QOL in distinct samples (Chachamovich et al., 2008, Zimmermann et al., 2008). One factor that may help explaining this finding is the relative small variance of depression levels, since the sample is predominately euthimic. Further studies with samples with higher levels of depression could eventually test this hypothesis.

One strength of the present study is the paired results. Contrary to the previous reports on QOL and infertility, we kept the couple (dyad) as the unit of the analysis at all stages. This approach limits the conclusions in an individual basis, but is a more powerful methodology to draw conclusions about the functioning of the couple experiencing infertility (Peterson et al., 2003). In addition, controlling for depression levels is mandatory in researches on QOL, since depression often interferes extensively with QOL outcomes (Chachamovich et al., 2008, Peterson et al., 2003). Finally, the use of a well-known Quality of Life instrument, whose psychometric properties have been widely validated, ensures the reliability of the present findings.

Potential limitations of the present study should also be taken into account. First, the conceptualization of quality of life depends on cultural aspects, as

clearly indicated by the WHOQOL definition of quality of life (Whoqol Group, 1995). Since this study was carried out with a Brazilian sample, it is possible that specific cultural factors may have had influence in the results. Further studies in distinct cultural settings are required to explore this issue. Secondly, there may be other factors (besides depression levels) that may act as confounders, and thus the analyses should be controlled for. However, any other factor has been stressed by the literature as much as depression up to the present. Thirdly, the current study is limited by a cross-sectional design. Because of this, we could not make causal inferences about the impact of infertility on the congruence or incongruence of QOL.

In summary, our findings suggested that quality of life scores do not differ markedly within spouses. Since these results are not in line with the majority of the previous non-paired studies, further investigations are required to address this dissimilarity. Moreover, studies exploring the clinical factors that may determine congruence or discrepancy between spouses are needed in the future.

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Table 1. Socio-demographic and clinical characteristics of the sample (n=162 couples)

Variables and Domains	Men Mean (SD) or n (%)	Women Mean (SD) or n (%)	P
Age (years)	36.1 (±7.6)	32.1 (±5.8)	**<0.001**†
BDI	4.7 (±5.1)	6.2 (±6.6)	**0.01**†
Having children	38 (23.5)	27 (16.7)	.165††
Educational Level			
<9 years	47 (29)	44 (27.1)	.908††
9-11 years	68 (42)	72 (44.5)	
>11 years	47 (29)	46 (28.4)	
Socio-Economic Status			-
Class A	11 (6.8)		
Class B	88 (54.3)		
Class C	63 (38.9)		
Duration of infertility (years)	5.7 (±3.6)		-
Previous attempts of Assisted Reproduction			
None	136 (84)		-
Once	14 (8.6)		
Twice or more	12 (7.4)		
Duration of relationship (years)	9.1 (±4.7)		-

† Paired t-tests; ††Chi-square test

Table 2. Paired T-tests and effect size between man and women (within-couple) (n=162 couples).

Domains	Men Mean (SD)	Women Mean (SD)	P†	*d*
Physical Domain	78.39 (12.31)	76.27 (14.69)	0.075	.156
Psychological Domain	74.71 (12.10)	71.01 (12.47)	**0.001**	.301
Environment Domain	61.70 (13.56)	63.45 (12.27)	0.109	-.135
Social Relations Domain	72.50 (16.04)	76.39 (15.51)	**0.012**	-.246
Overall Score	73.99 (14.34)	73.75 (13.12)	0.688	.017

† Paired t-tests *; d* = Cohen's effect size coefficient

Table 3. Linear Multiple Regressions of the WHOQOL-BREF domains between men and women (within-couples), controlling for depression levels (n=162 couples)

MODEL*	R^2	t	Standardized-β	p
Physical Domain	.224			
BDI men		-3.830	-.278	**<.001**
BDI women		6.292	.456	**<.001**
Psychological Domain	.251			
BDI men		-4.506	-.320	**<.001**
BDI women		6.652	.473	**<.001**
Social Relations Domain	.068			
BDI men		-3.193	-.253	**.002**
BDI women		1.891	.150	.060
Environment Domain	.065			
BDI men		-3.096	-.246	**.002**
BDI women		1.900	.151	.059
Overall Score	.279			
BDI men		-2.992	-.236	**.003**
BDI women		2.771	.219	**.006**

* Dependent variables are QOL deltas (paired QOL man – QOL woman)

OBJETIVO DO ARTIGO 4

Avaliar a similaridade entre os escores de Qualidade de Vida atribuídos pelo parceiro e pelo próprio cônjuge do casal infértil.

HIPÓTESE CONCEITUAL

A avaliação externa da Qualidade de Vida do parceiro (hetero-percepção) é pior do que a auto-percepção de Qualidade de Vida, no casal infértil.

HIPÓTESE OPERACIONAL

H_0: Os escores de Qualidade de Vida atribuídos pelo parceiro são iguais àqueles atribuídos pelo próprio indivíduo, no casal infértil.

H_a: Os escores de Qualidade de Vida atribuídos pelo parceiro são diferentes àqueles atribuídos pelo próprio individuo, no casal infértil.

ARTIGO 4

Are spouses able to perceive partner's Quality of Life adequately?

HEALTH PSYCHOLOGY

American Psychological Association

Fator de Impacto: 3.690

Are spouses able to perceive partner's Quality of Life adequately?

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ABSTRACT:

Considering that the infertility is essentially a shared condition, and that the ability to perceive the partner's QOL is crucial to provide emotional support, we aimed to explore to what extent the spouse is able to perceive the partner's quality of life adequately. 162 couples were interviewed cross-sectionally, and completed a socio-demographic form, the WHOQOL-BREF, and the BDI, independently. Paired t-tests and Cohen's effect were run. The sample included not very young subjects (mean age of men 36.1 ± 7.69; and women 32.11 ± 5.8), with no previous children (23.5% and 16.7% of men and women had children), with no previous assisted reproduction attempts, and non-depressed subjects. The proxy-based assessments proved to be consistently lower when compared to self-perceived scores. The only domain in which the partner's assessment was higher was Environment. Multivariate analyses indicated that the influence of depression on the congruence is minimal (Partial Eta Square up to 0.098). Our findings suggest that spouses are not able to perceive adequately the partner's quality of life, and tend to underrate it. This discrepancy is highest among more abstract constructs.

KEYWORDS: quality of life; infertility; congruence; WHOQOL; spouse

INTRODUCTION

Infertility, defined as the inability of conceiving after 12 months of regular unprotected intercourse, is a prevalent condition and represents a significant social and public health problem (Khayata et al., 2003, WHO, 2002). It is estimated that such condition might affect up to 15 % of western couples (Oddens et al., 1999). In developing regions such as Africa and South America, the prevalence tends to be more elevated due to the higher frequency of infectious diseases (Dyer et al., 2005, Chachamovich et al., 2007). Among developed countries, the decision to delay having children seems to be related to the increasing prevalence of infertility (Evers, 2002, Dyer et al., 2005, Ombelet et al., 2008). It has been widely demonstrated that infertility has a strong and negative impact in several areas of the individual's life. For instance, impairments in marital relationship (Nelson et al., 2008, Coeffin-Driol and Giami, 2004), sexual satisfaction (Khademi et al., 2008, Drosdzol and Skrzypulec, 2008), psychosocial well-being (Tan et al., 2008, Wischmann, 2008, Cousineau and Domar, 2007) and psychological correlates (Noorbala et al., 2008, Benyamini et al., 2008) are significantly associated with infertility.

From an individual's perspective, the experience of infertility has been largely studied. In general, the psychosocial impact of infertility is comprehensive (Greil, 1997), and its impact on quality of life is consistent (Drosdzol and Skrzypulec, 2008, El-Messidi et al., 2004, Fassino et al., 2002, Fekkes et al., 2003, Khayata et al., 2003, Lau et al., 2008). Moreover, studies have shown that the impairment of quality of life is higher among infertile women compared to infertile men (Drosdzol and Skrzypulec, 2008, El-Messidi et al., 2004, Ragni et al., 2005, Rashidi et al., 2008). Interestingly, research has typically focused on individual's reactions to infertility (mainly women), without an examination of how the partner is reacting to the same

condition, or whether each partner's experience is affecting the other partner (Peterson et al., 2003).

Family system theory proposes that individuals should also be examined in terms of the processes between people in relationships, rather than exclusively the individuals themselves (Peterson et al., 2003). Furthermore, it is hypothesized that one's quality of life is influenced by quality of life of the other (Andrews et al., 1991, Greil, 1997). For example, there have been a handful of studies examining the impact of partner coping in couples experiencing infertility (Peterson et al., 2006a, Peterson et al., 2006b, Peterson et al., 2003, Peterson et al., 2008, Berghuis and Stanton, 2002, Mikulincer et al., 1998, Stanton et al., 1991). These studies show that the infertility provokes strong effect in both members of the couple and that one partner's coping impacts his or her partner's individual response to infertility stress.

Quality of life (QOL) has emerged as an extremely relevant outcome in complex and multidimensional health conditions (Testa M, 1996, Chachamovich et al., 2007, Skevington and O'Connell, 2004). Among them, studies on infertility have benefited from the inclusion of QOL as an endpoint, since it has made it possible to measure the impact of infertility in a broader way, comprehending outcomes beyond clinical symptomatology (Chachamovich et al., 2007). Although the conceptualization of QOL is not consensual, the WHOQOL Group's definition has been widely accepted (Skevington and O'Connell, 2004, Leplege and Hunt, 1997, Calman, 1984, Cella and Tulsky, 1990). The World Health Organization has defined QOL as "people's perception of their position in life in the context of the culture and value systems in which they live in relation to their objectives, expectations, standards and concerns", emphasizing the multidimensionality, subjective perception and presence of positive and negative dimensions in its theoretical conceptualization (WHOQOL, 1994, Group, 1994).

Several studies have addressed the ability of a partner to perceive psychological phenomena occurring to the other. Traditionally, research has investigated oncologic conditions (such as prostate and breast cancer), and the partner's capacity of perceiving adjustment, pain, coping strategies, and emotional adaptation (Cano et al., 2005, Romero et al., 2008, Ezer et al., 2006). In these situations, the partner is understood as the healthy subject responsible for supporting the ill spouse. Given that the marriage is the closest personal relationship, partners often are important sources of support (Sterba et al., 2008). Among infertile couples, however, typically the dyad is affected. As a consequence, both partners are at the same time the ill subject and the supporter. To the best of our knowledge, no published studies have tested the perception of one partner about others' QOL.

Considering that the infertility is essentially a shared condition, and that the ability to perceive the partner's QOL is crucial to ensure one's capacity to provide emotional support, the present study aims to explore to what extent the spouse is able to perceive the partner's quality of life adequately.

METHOD

Subjects

From April 2007 to December 2007, 163 couples seen at the assisted reproduction service of a university hospital were asked to participate in this prospective cross-sectional study. The 326 subjects were invited to complete the instruments while waiting for their medical appointment. All respondents were informed about the objectives of the study and the confidentiality of the data. Subjects

signed consent forms. Interviewers were particularly oriented to ensure that the instruments were completed individually and independently, in order to avoid interference of one's responses in the other's. The project was approved by the Research Ethics Committee of the Hospital de Clinicas de Porto Alegre, which follows the Helsinki declaration of 1975, as revised in 1983. The sample came to 162 couples. Two subjects declined to participate in the study.

Procedures

Researchers trained in the application of the following instruments carried out face-to-face interviews:

9) A socio-demographic and clinical data form, which assesses marital status, length of relationship with the present partner, socio-economic status, age, educational level, duration of conception attempts, number of previous attempts at reproduction techniques, and type of assisted reproduction technique.
10) The WHOQOL-BREF, which is a generic QOL assessment instrument, developed by the WHO along with several countries representing different cultures (WHOQOL, 1998, 1998). It has been translated and validated into Portuguese (Fleck et al., 2000) and provides an overall score for QOL, as well as individual scores by domain. Higher scores mean better QOL. Its four domains are physical health, psychological health, social relationships and environment. A large number of studies have proved its suitability to assess QOL in several health conditions, including infertility (Chachamovich et al., 2007).

11) Proxy-WHOQOL-BREF: The original WHOQOL-BREF was adapted to be completed by a third person to evaluate the perception of the partner about the QOL of the index subject. The 26 WHOQOL-BREF items were modified in order to investigate how the respondent believes that the subject feels. For example, the original item 26 asks “How often do you have negative feelings such as blue mood, despair, anxiety, depression?” and was adapted to “How often does she have negative feelings such as blue mood, despair, anxiety, depression?” This methodology has been frequently applied, and has presented suitable responsiveness (TRENTINI et al., 2006, Sterba et al., 2008).
12) Beck Depression Inventory (BDI): is one of the most commonly used instruments to measure intensity of depression (Trentini et al., 2005). It has been validated in various idioms, including Portuguese (Cunha, 2001). The total BDI score is obtained from the sum of 21 items that assess both the Cognitive-Affective and the Somatic-Performance aspects of depression (Gorenstein et al., 1999). Scores under 10 represent absence of depression; scores from 11 to 18 mild depression; from 19 to 29 moderate depression and above 30, severe depression (Beck AT, 1961).

Statistical Analyses

Data were analyzed with the couple as the unit of analysis. In order to conduct the analysis, the data were structured so that each row contained data for one couple (i.e., the couple was the subject).

The clinical and socio-demographic variables were described through descriptive statistics, and comparisons of means and proportions were run by paired t-tests and chi-square tests, respectively. The QOL scores were compared between infertile men and women by paired t-tests. Cohen's effect size coefficients were also reported.

Since depression levels were statistically different between men and women, further analyses were carried out. It has been widely demonstrated that even mild subclinical symptoms of depression are intrinsically related to QOL outcomes in distinct clinical and non-clinical samples (Ohaeri et al., 2008, Revicki et al., 2008, Chachamovich et al., 2008, Schweikert et al., 2008, Zimmermann et al., 2008). In addition to the direct influence of depressive symptoms on QOL, proxy-based studies have also shown that the respondent's intensity of depression may alter the congruence of subject-respondent perceptions (Pruchno et al., 1997, TRENTINI et al., 2006). Thus, to examine whether distinct levels of depressive symptoms were related to differences of QOL perceptions, we conducted linear multiple regressions. Depression levels were included as independent variables. The dependent variable was the difference of the perceptions of QOL within-couple (i.e., Δ = self-perceived QOL - proxy-based QOL) for each domain. In order to indicate congruence or incongruence, these delta scores were converted to absolute values, being 0 the perfect congruence. Thus, significant β-coefficients indicated that independent variables correlated to the increase of the delta (i.e., contributing to incongruence). At this stage, analyses aimed at verifying whether depressive symptomatology may alter the congruence levels both by altering the QOL of the subject, and/or by impairing the partner's perception.

The subject-partner deltas did not present departures from normality, as checked by skewness and kurtosis (values lower than ± 2), P-P plots and Q-Q plots observations.

Since depression proved to be significant in explaining the level of congruence between QOL of self and proxy-based perceptions of QOL in some models, further analyses were carried out. Repeated-Measures Analyses of Covariance were conducted, in order to quantify the load of depression symptoms on the outcome (congruence). Instead of classically using repeated measures ANCOVA to investigate changes at two distinct stages separated by time, we considered the different perceptions of the same phenomenon. As such, we were particularly interested in the within-subjects results. The main advantage of this approach is keeping the matching between pairs, and controlling for potential confounders. Effect sizes were reported as Partial Eta Squares.

The statistical strategy was guided in order to ensure that subjects would be explored within pairs at all times, and not as independent groups. Statistical significance was set at $p<0.05$.

RESULTS

Demographics

The sample comprised 162 infertile couples. Table 1 describes the characteristics of the sample. Briefly, the sample included not very young subjects (mean age of men 36.1 ± 7.69; and women 32.11 ± 5.8; $p<0.001$), with no previous children (23.5% and 16.7% of men and women had children, respectively; $p=0.165$) and with no previous assisted reproduction attempts (84% of the couples). Most subjects had an intermediate educational level (71% and 72% had less than 12 years

of formal schooling among men and women, respectively), with a long current relationship (mean of 9.13 years ± 4.7) and trying to conceive for a long time (46.8% had tried for more than 5 years). Concerning socio-economic status, most of couples belonged to social class B (medium class).

The low BDI mean scores indicated that the sample is predominately non-depressed. Depressive levels were minimal in 85.2% of men and 78.4% of women; mild for 12.9% of men and 15.4% of women; and moderate for only 1.9% of men and 6.2% of women. No cases of severe depression were present in the sample. However, depression scores were significantly higher among women than men ($p<0.001$).

INSERT TABLE 1 ABOUT HERE

Congruence of subject's QOL and the partner's perception of QOL

Paired tests were conducted in two blocks. Initially, men QOL scores were placed as the reference (self-reported QOL), and women's perceptions of the partner QOL were compared to the former. Secondly, analyses tested the opposite direction (i.e., women's QOL as the expected values and men's perceptions were compared to them). Marked discrepancies were observed in all 10 analyses, and the proxy-based assessments proved to be consistently lower when compared to self-perceived QOL scores. The only domain in which the partner's assessment was higher than the subject's one was Environment. Spouse's trend to rate the partner's QOL lower than the subjects themselves was particularly observable in the Overall and Psychological Domains, as demonstrated by the high Cohen's effect size coefficient. In addition, this effect was present regardless of the

partner's gender. Table 2 describes the paired t-tests results, as well as the effect size estimations.

INSERT TABLE 2 ABOUT HERE

Multiple linear regressions were carried out to explore the effect of subject's and partner's levels of depression in the congruence between self and proxy-based QOL assessments. Nine out of 10 models proved to include one spouse's depression levels (4 out of 9) or both spouses' depression levels (5 out of 9) as significant predictors. Only the male Overall QOL score was not influenced by depression. Furthermore, the subject's depression level had a higher path coefficient when compared to the partner's (except for the Social Relationship Domain, when women were the subjects), indicating that it affects more the congruence than the proxy's mood status.

Both subject's and spouse's depression levels have negative association with the delta scores. This indicates that both phenomena tend to contribute to congruence (i.e., the more depressed the subject and partner are, the more congruent the self and proxy-based QOL perceptions are).

The results from the Repeated-Measures ANCOVA were in line to this pattern. In addition, they indicated that the influence of depression on the congruence is minimal. Partial Eta Squares values demonstrated that not more than 9.8% of the variance was explained by depression symptoms (female depression for the Physical Domain, being man the spouse).

Table 3 describes the 10 linear regression models in details, with the Partial Eta Squares values.

INSERT TABLE 3 ABOUT HERE

DISCUSSION

The present study aimed to investigate the capacity of the spouse to adequately perceive the partner's quality of life. This strategy allows exploring if the spouse is able to empathize with other's experience, regardless of his/her quality of life. Indeed, studying interaction within dyads simultaneously from the perspective of both parties is a recommendation, often voiced but infrequently heeded (Gable et al., 2003).

The results showed that spouses are not able to perceive partners' quality of life, and that they systematically underestimate it. This pattern seems to be similar across genders. The depression levels proved to be of very limited relevance in explaining this incongruence of perceptions, which rules out that the differences in mean depression levels account for this result. This finding assumes particular importance since the sample has a high mean of duration of the current relationship, and subjects have been trying to conceive for a long period. Thus, couples supposedly have a considerable insight of other's expectations, objectives and life satisfaction. Except for the Environment Domain, spouses rated partners' QOL significantly lower than the subjects themselves. In opposite to the other domains, the Environment Domain includes items about more objective and concrete issues, such as transportation, conditions of living place and access to health services.

On the other hand, the incongruence between the self-perceived and the proxy-based evaluations of QOL were markedly high on the Psychological and Overall scores, as shown by the Cohen's coefficients. Accordingly, these two domains can

be considered as the most abstract ones. The Overall score is based on the subjective perception of satisfaction with life and health status (Overall scores). The Psychological Domain relies heavily on feelings of blue or sadness, self-esteem, body image, concentration and attention, among others (WHOQOL, 1998). It is possible to hypothesize that the most intangible constructs represent a challenge for the spouse's perception. As a consequence, description of one's QOL based on an external source of information proved not to be reliable. Although no study has specifically focused this aspect up to the present, some reported findings support this hypothesis.

Several investigations on the congruence of the perception of symptomatology have showed that partners are capable of converging in different clinical conditions, such as general pain (Cano et al., 2005) rheumatoid arthritis (Sterba et al., 2008) and breast cancer (Manne et al., 2004, Romero et al., 2008). On the other hand, Gillett et al (Gillett et al., 1996) found significant incongruence within couples when investigating feelings towards donor insemination. Accordingly, Waters et al (Waters et al., 2003) reported low congruence between adolescent self-report and parent reports of health and well-being in a large epidemiological study. Parent-child differences were particularly wide among assessments regarding enjoyment of social and school activities. Since medical symptoms are often directly observable, this characteristic may account for the higher agreement between partners. Nonetheless, these studies differ from ours, because these medical conditions are presented exclusively by one partner (being the spouse healthy). When investigating infertility, both partners are implied as actors of the condition.

The proxy-based trend towards underestimation of the spouse's health conditions has been found in several studies. In general, spouses underrate health

conditions (such as adjustment and quality of life) and/or overestimate health impairments (such as pain and disability) (TRENTINI et al., 2006, Cano et al., 2005, Sterba et al., 2008, Riemsma et al., 2000).

A positive aspect of the present study is the statistical control for depression levels in both partners. In fact, controlling this confounder is mandatory in researches on QOL, since depression often interferes extensively with QOL outcomes (Chachamovich et al., 2008, Peterson et al., 2003). Moreover, the use of a well-known Quality of Life instrument, whose psychometric properties have been widely validated, ensures the reliability of the present findings.

Potential limitations of the present study should also be taken into account. First, the conceptualization of quality of life depends on cultural aspects, as cited by the WHOQOL conceptualization of quality of life (Editorial, 1995). Since this study was carried out with a Brazilian sample, it is possible that specific cultural factors may have had influence in the results. Further studies in distinct cultural settings are required to explore this issue. In addition, the current study is limited by a cross-sectional design. Because of this, we could not make causal inferences about the impact of infertility on the congruence or incongruence of QOL.

In summary, our findings suggest that spouses are not able to perceive adequately the partner's quality of life, and tend to underrate it. This discrepancy is highest among more abstract constructs, such as Psychological Domain and the Overall score. Psychosocial interventions that foster spouse's accurate perceptions of each other may facilitate couples' well-being, when these discrepancies result in significant distress.

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Table 1. Socio-demographic and clinical characteristics of the sample (n=162 couples)

Variables and Domains	Men Mean (SD) or n (%)	Women Mean (SD) or n (%)	P
Age (years)	36.1 (±7.6)	32.1 (±5.8)	**<0.001**†
BDI	4.7 (±5.1)	6.2 (±6.6)	**0.01**†
Having children	38 (23.5)	27 (16.7)	.165††
Educational Level			
<9 years	47 (29)	44 (27.1)	.908††
9-11 years	68 (42)	72 (44.5)	
>11 years	47 (29)	46 (28.4)	
Socio-Economic Status			-
Class A	11 (6.8)		
Class B	88 (54.3)		
Class C	63 (38.9)		
Duration of infertility (years)	5.7 (±3.6)		-
Previous attempts of Assisted Reproduction			
None	136 (84)		-
Once	14 (8.6)		
Twice or more	12 (7.4)		
Duration of relationship (years)	9.1 (±4.7)		-

† Paired t-tests; ††Chi-square test

Table 2. Paired T-tests and effect size between self and proxy-based QOL (within-couple) (n=162 couples).

Domains	Subject Mean (SD)	Spouse Mean (SD)	Subject-Spouse Mean (SD)	P†	*d*
Subject: men Spouse: women					
Physical Domain	78.39 (12.3)	68.45 (10.6)	9.94 (13.2)	**<.001**	.862
Psychological Domain	74.71 (12.1)	60.39 (15.5)	14.32 (17.6)	**<.001**	1.035
Environment Domain	61.83 (13.5)	66.11 (10.4)	-4.27 (11.9)	**<.001**	-.398
Social Relations Domain	72.50 (16.0)	66.51 (17.3)	5.99 (18.7)	**<.001**	.363
Overall Score	73.99 (14.3)	53.08 (18.2)	20.91 (22.0)	**<.001**	1.302
Subject: women Spouse: men					
Physical Domain	76.46 (14.6)	70.66 (9.6)	5.80 (13.2)	**<.001**	.483
Psychological Domain	71.06 (12.4)	59.13 (12.2)	11.93 (14.6)	**<.001**	1.002
Environment Domain	63.47 (12.3)	66.93 (9.3)	-3.57 (10.7)	**<.001**	-.320
Social Relations Domain	76.35 (15.5)	67.23 (15.7)	9.11 (20.4)	**<.001**	.576
Overall Score	73.99 (14.3)	51.31 (16.5)	22.68 (19.1)	**<.001**	1.463

† Paired t-tests *; d* = Cohen's effect size coefficient

Table 3. Linear Multiple Regressions of the WHOQOL-BREF domains between self

MODEL[a]	R^2	t	Standardized-β	p	PET[b]
Subject: men					
Spouse : women					
Physical Domain	.231				
BDI men		-4.904	-.352	**<.001**	.016
BDI women		-3.514	-.252	**.001**	.014
Psychological Domain	.071				
BDI men		-2.981	-.235	**.003**	.006
BDI women		-.999	-.079	.320	.001
Social Relations Domain	.129				
BDI men		-.3998	-.305	**<.001**	.001
BDI women		-1.670	-.128	.097	.001
Environment Domain	.183				
BDI men		-3.831	-.284	**<.001**	.024
BDI women		-3.469	-.257	**.001**	.003
Overall Score	.012				
BDI men		-.889	-.072	.375	.034
BDI women		-.796	-.065	.427	.001
Subject: women					
Spouse : men					
Physical Domain	.262				
BDI men		-3.531	-.250	**.001**	.007
BDI women		-5.483	-.368	**<.001**	.098
Psychological Domain	.191				
BDI men		-3.621	-.268	**<.001**	.034
BDI women		-3.837	-.284	**<.001**	.068
Social Relations Domain	.088				
BDI men		-2.761	-.217	**.006**	.014
BDI women		-1.961	-.154	.052	.019
Environment Domain	.159				
BDI men		-2.549	-.193	**.012**	.000
BDI women		-4.026	-.304	**<.001**	.008
Overall Score	.058				
BDI men		-1.151	-.091	.251	.001
BDI women		-2.529	-.201	**.012**	.003

and proxy-based (within-couples), controlling for depression levels (n=162 couples)
a) Dependent variables are QOL deltas (paired QOL self-reported – QOL proxy-reported)
b) Partial Eta Square, calculated by Repeated-Measures ANCOVA

Considerações Finais

O prejuízo provocado pela infertilidade transcende o sentimento humano de ineficácia e baixa auto-realização pessoal. Variadas repercussões negativas, tais como culpa, estigma e isolamento social, desesperança, violência doméstica e problemas econômicos têm sido descritos nas áreas psicológicas, sociais e no campo da ética (WHO, 2002).

Embora a infertilidade já tenha se configurado como assunto na agenda da Conferência das Nações Unidas sobre População e Desenvolvimento, são quase inexistentes os guias que traduzem de que modo fazer a adequada prevenção e o seu devido tratamento. Mesmo a Organização Mundial de Saúde, através das suas diretrizes técnicas, não consegue diminuir o impacto global da infertilidade, pois as estratégias de prevenção e o tratamento de fato não são capazes de promover mudanças significativas (Inhorn, 2003).

No Brasil, a infertilidade está contemplada dentro das políticas de Atenção a Saúde Reprodutiva de maneira bastante discreta. Este panorama não se diferencia de muitos países da America Latina, como a Argentina por exemplo (WHO, 2002). Tal limitação fica evidente na medida em que o acesso ao diagnóstico e às técnicas reprodutivas é garantido, mas o custo alto do tratamento medicamentoso precisa ser arcado pelos pacientes. Esta realidade vigente tende a fortalecer a percepção da sociedade em geral de que as técnicas de reprodução assistida são restritas aos casais heterossexuais abastados (WHO, 2002).

No que diz respeito às pesquisas sobre os aspectos psicossociais da infertilidade, duas importantes considerações merecem ser feitas.

Primeiramente, a abordagem do sujeito infértil sob o ponto de vista medicalizado, ou seja, em contextos clínicos, pode oferecer informações mais restritas sobre a experiência da infertilidade. Devido ao fato de a procura pelo tratamento ser influenciada por fatores sociais como etnia, classe econômica e região demográfica, o que se sabe até o presente sobre as repercussões da infertilidade diz respeito fundamentalmente à classe média, aos sujeitos de áreas urbanas e àqueles que conseguiram ter acesso aos serviços de saúde em níveis secundários e terciários. Ainda, dentro deste grupo, o conhecimento se concentra sobre os sujeitos submetidos às técnicas de reprodução assistida. Deste modo, os estudos acabam por incluir uma minoria, não raras vezes selecionadas, entre outros, por razões econômicas (ou seja, capacidade de custear tratamentos onerosos). Faz–se necessário investir esforços em investigar a população dentro do seu universo social, com o intuito de poder acessar sujeitos que não alcançam o sistema mais complexo de saúde e que, economicamente, não terão chance de fazê-lo. Assim, poder-se-ia compreender a experiência de ser infértil durante o seu curso completo, no âmbito dos valores culturais dos indivíduos.

O segundo aspecto se refere aos escassos estudos explorando as experiências masculina e do casal quanto à infertilidade. Parece haver uma cronologia no desenvolvimento de estudos acerca da percepção subjetiva da infertilidade. Iniciadas na década de 1980, as investigações privilegiaram especialmente as mulheres inférteis. Nos últimos dez anos, o reconhecimento do papel masculino no contexto biológico (no que diz respeito a etiologia da infertilidade) despertou o interesse sobre a sua experiência de ser infértil. Ainda mais recentemente, autores passaram a estudar as experiências do casal infértil, de modo a entender como as relações interferem na percepção

de tal condição de saúde. Como demonstrado no corpo da presente Tese, ainda há marcadas carências de estudos explorando o casal e o homem infértil.

A presente tese de doutorado visa a contribuir para o entendimento mais amplo dos sujeitos inférteis e as conseqüências psicossociais derivadas dessa experiência. Partiu-se da observação de que o conhecimento da Qualidade de Vida em infertilidade apresenta tais carências, e de que inovações recentes no campo de Qualidade de Vida ainda não foram sistematicamente incorporadas às investigações em infertilidade. Entre estas, destaca-se especialmente a adoção de estratégias estatísticas mais refinadas, e o reconhecimento de que estados mentais (particularmente depressão em variados níveis) guardam relação direta com Qualidade de Vida. Deste modo, pretendeu-se propor questões de pesquisa inovadoras e, conseqüentemente, gerar resultados ainda inéditos na literatura especializada.

Resumidamente, os presentes achados indicaram que a infertilidade apresenta reflexos negativos na Qualidade de Vida de mulheres e homens. Apontaram também que níveis subclínicos de depressão e ansiedade têm papel fundamental na Qualidade de Vida de homens inférteis. Por fim, demonstraram que o casal apresenta Qualidade de Vida predominantemente comparáveis entre seus membros, mas que a capacidade de percepção da Qualidade de Vida do outro encontra-se significativamente prejudicada.

A partir de tais achados, é possível identificar algumas futuras áreas de pesquisa no campo da infertilidade e Qualidade de Vida. A identificação dos fatores que determinam uma maior congruência na percepção de Qualidade de Vida entre o casal (preditores de congruência) torna-se

importante para o desenvolvimento de intervenções capazes de alterar este panorama. A implementação de estudos transculturais também pode ser destacada como uma área a ser futuramente desenvolvida com o objetivo de explorar, com um desenho adequado, o papel dos fatores culturais na determinação da percepção de Qualidade de Vida em sujeitos inférteis. Por fim, outro fator de potencial interesse científico é a investigação do papel de intervenções psicológicas como fator de melhora de Qualidade de Vida em sujeitos com sintomas de depressão e ansiedade.

Estudos de Qualidade de Vida em infertilidade têm se constituído progressivamente em uma linha de pesquisa consolidada. A agregação de novos resultados tem paulatinamente construído uma base sólida de conhecimento. Futuramente, a possibilidade de aferir adequadamente o impacto de diversas condições de saúde e de intervenções poderá ser extremamente útil no direcionamento de políticas de saúde na área da infertilidade.

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CONVITE À PARTICIPAÇÃO DE UM ESTUDO SOBRE A PERCEPÇÃO DA QUALIDADE DE VIDA EM CASAIS EM CONSULTA POR INFERTILIDADE

Estamos realizando um trabalho de pesquisa sobre como é que os casais que procuram consulta médica por infertilidade avaliam a sua Qualidade de Vida. Para isto, gostaríamos de contar com a sua colaboração durante alguns minutos para responder a uns questionários. Serão feitas perguntas sobre diferentes aspectos de sua vida: saúde física, vida emocional, relação com amigos e familiares, meio-ambiente. Também perguntaremos algumas informações sócio-demográficas e sobre o tema da infertilidade.

Esta pesquisa faz parte da Tese de Doutorado de Juliana Chachamovich (contato pelos telefones: 91954653 ou 32644152). Em Porto Alegre, o grupo coordenador pertence ao Hospital de Clínicas de Porto Alegre e tem como responsável o Dr. Eduardo Pandolfi Passos (telefones: 99810169 ou 33168117).

Gostaríamos de deixar claro que o(a) senhor(a) tem toda a liberdade para interromper o questionário se desejar ou negar-se a responder a alguma pergunta do mesmo. Asseguramos que todas as informações prestadas pelo senhor (a) são sigilosas e serão utilizadas somente para esta pesquisa. A divulgação das informações será anônima e em conjunto com as respostas de todas as pessoas que procurarem atendimento neste ambulatório durante o período da pesquisa.

A sua opção de responder ou não a esses questionários não terá influência nenhuma sobre o tratamento que vier a receber neste hospital.

Serão aplicados dois instrumentos de sintomas depressivos e de ansiedade. Asseguramos que, caso algum deles apresente escores mais elevados do que o esperado, avisaremos a(o) senhor(a) e ao seu médico verbalmente. Sugerimos que isso seja discutido na sua consulta para adequados investigação e tratamento, se necessários.

Se você tiver alguma pergunta a fazer antes de decidir, sinta-se a vontade para fazê-la.

Data: ____/____/____

Assinatura: _____

OBRIGADO POR SUA COLABORAÇÃO

Local da coleta **1) SEGIR** ☐

2) HCPA ☐

Nome:
_____

Número do prontuário:
_____

Data da primeira vez que consultou neste serviço:
_____

1) Sexo **1) Homem** ☐

2) Mulher ☐

2) Idade **_____ anos**

3) Cidade onde mora_____

4) Estado civil **1) casado legalmente** ☐

2) vivendo como casado ☐

5) Tempo de relacionamento com parceiro atual _____anos

6) Escolaridade **1) Primeiro grau completo** ☐

2) Primeiro grau incompleto ☐

3) Segundo grau completo ☐

4) Segundo grau incompleto ☐

5) Terceiro grau completo ☐

6) Terceiro grau incompleto ☐

7) Pós-graduação ☐

7) Quantas vezes você já consultou no ambulatório de infertilidade?

1) esta é a primeira consulta □

2) esta é a segunda consulta □

3) esta é a terceira consulta □

4) mais que três consultas □

8) Quantas vezes você já procurou ajuda em serviço de saúde devido a infertilidade?

1) esta é a primeira vez □

2) esta é a segunda vez □

3) esta a terceira vez □

4) mais do que três vezes □

9) Há quanto tempo está tentando engravidar?

Exatamente há quanto tempo? _____ anos e _____ meses

1) Menos de 2 anos □

2) 2-5 anos □

3) mais de 5 anos □

Você já tens filhos?

□ **Não** □ **Sim. Seu filho é do seu parceiro (a) atual?**

□ **Sim** □ **Não**

10) Dentro do casal, quem possui o problema médico da infertilidade:

1) Homem □

2) Mulher □

3) causa é desconhecida □

4) Os dois □

5) Ainda não sabemos □

11) A partir do momento em que soube da infertilidade:

11.1) O diálogo com o seu (sua) parceiro(a) é

1) igual ☐

2) melhor ☐

3) pior ☐

11.2) A vida sexual com seu (sua) parceiro(a) é

1) igual ☐

2) melhor ☐

3) pior ☐

12) Você já realizou alguma Técnica de Fertilização Assistida?

1) não ☐

2) uma vez ☐

3) duas ou três vezes ☐

4) mais de três vezes ☐

13) Já se submeteu a alguma cirurgia no aparelho reprodutor e/ou genital?

1) Não ☐

2) uma vez ☐

3) duas ou mais ☐

Saberia informar o nome da cirurgia que realizou?_____

14) Qual a terapia de reprodução assistida a que foi submetido:

1) Inseminação Artificial ☐

2) Indução de Ovulação ☐

3) FIV ☐

4) ICSI ☐

5) Nenhuma ☐

15) A respeito da adoção de uma criança: (somente uma resposta)

1) Não considerei esta possibilidade ☐

2) Sou absolutamente contrário(a) ☐

3) Poderia fazer uma adoção no futuro □

4) Já fiz solicitação para adoção □

16) É favorável ao congelamento de embriões?

1) Sim □

2) Não □

3) Não sei □

17) É favorável, em caso de uma gravidez com mais de um embrião, à retirada de embriões do útero?

1) Sim □

2) Não □

3) Não sei □

18) É favorável à inseminação artificial com sêmen de um doador?

1) Sim □

2) Não □

3) Não sei □

19) Havendo a disposição de mais de um embrião, você arriscaria uma gravidez múltipla?

1) Não □

2) Sim, Gemelar □

3) Sim, Trigemelar □

ESCALA PARA NÍVEL SOCIOECONÔMICO

Item	Não tem	1	2	3	4	5	6 ou mais
TV							
Rádio							
Banheiro							
Carro							
Empregada							
Telefone							
Geladeira							

Instrução do chefe da família	Pontos
Analfabeto/Primário incompleto	
Primário completo/Ginasial incompleto	
Ginasial completo/Colegial incompleto	
Colegial completo/Superior incompleto	
Superior completo	

Classe	Pontos
A	35 ou mais
B	21 a 34
C	10 a 20
D	5 a 9
E	0 a 4

Obrigado(a)!

WHOQOL-BREF

Por favor, leia cada questão, veja o que você acha e circule no número e lhe parece a melhor resposta.

		muito ruim	Ruim	nem ruim nem boa	boa	muito boa
1(G1)	Como você avaliaria sua Qualidade de Vida?	1	2	3	4	5

		muito insatisfeito	Insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
2(G4)	Quão satisfeito(a) você está com a sua saúde?	1	2	3	4	5

As questões seguintes são sobre **o quanto** você tem sentido algumas coisas nas últimas duas semanas.

		nada	muito pouco	mais ou menos	bastante	extremamente
3(F1.4)	Em que medida você acha que sua dor (física) impede você de fazer o que você precisa?	1	2	3	4	5
4(F11.3)	O quanto você precisa de algum tratamento médico para levar sua vida diária?	1	2	3	4	5
5(F4.1)	O quanto você aproveita a vida?	1	2	3	4	5
6(F24.2)	Em que medida você acha que a sua vida tem sentido?	1	2	3	4	5
7(F5.3)	O quanto você consegue se concentrar?	1	2	3	4	5
8(F16.1)	Quão seguro(a) você se sente em sua vida diária?	1	2	3	4	5
9(F22.1)	Quão saudável é o seu ambiente físico (clima, barulho, poluição, atrativos)?	1	2	3	4	5

As questões seguintes perguntam sobre **Quão completamente** você tem sentido ou J capaz de fazer certas coisas nestas últimas duas semanas.

		nada	muito pouco	médio	muito	completamente
10(F2.1)	Você tem energia suficiente para seu dia-a-dia?	1	2	3	4	5
11(F7.1)	Você é capaz de aceitar sua aparência física?	1	2	3	4	5
12(F18.1)	Você tem dinheiro suficiente para satisfazer suas necessidades?	1	2	3	4	5
13(F20.1)	Quão disponíveis para você estão as informações que precisa no seu dia-a-dia?	1	2	3	4	5
14(F21.1)	Em que medida você tem oportunidades de atividade de lazer?	1	2	3	4	5

As questões seguintes perguntam sobre **Quão bem ou satisfeito** você se sentiu a respeito de v<rios aspectos de sua vida nas últimas duas semanas.

		muito ruim	ruim	nem ruim	bom	muito bom
15(F9.1)	Quão bem você é capaz de se locomover?	1	2	3	4	5

		muito insatisfeito	Insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
16(F3.3)	Quão satisfeito(a) você está com o seu sono?	1	2	3	4	5
17(F10.3)	Quão satisfeito(a) você está com sua capacidade de desempenhar as atividades do seu dia-a-dia?	1	2	3	4	5
18(F12.4)	Quão satisfeito(a) você está com sua capacidade para o trabalho?	1	2	3	4	5
19(F6.3)	Quão satisfeito(a) você está consigo mesmo?	1	2	3	4	5
20(F13.3)	Quão satisfeito(a) você está com suas relações pessoais (amigos, parentes, conhecidos, colegas)?	1	2	3	4	5
21(F15.3)	Quão satisfeito(a) você está com sua vida sexual?	1	2	3	4	5
22(F14.4)	Quão satisfeito(a) você está com o apoio que você recebe de seus amigos?	1	2	3	4	5
23(F17.3)	Quão satisfeito(a) você está com as condições do local onde mora?	1	2	3	4	5
24(F19.3)	Quão satisfeito(a) você está com o seu acesso aos serviços de saúde?	1	2	3	4	5
25(F23.3)	Quão satisfeito(a) você está com o seu meio de transporte?	1	2	3	4	5

As questões seguintes referem-se a **com que freqüência** você sentiu ou experimentou certas coisas nas últimas duas semanas.

		nunca	Algumas vezes	freqüentemente	muito freqüentemente	sempre
26(F8.1)	Com que freqüência você tem sentimentos negativos tais como mau humor, desespero, ansiedade, depressão?	1	2	3	4	5

Versão brasileira do questionário
de Qualidade de Vida relacionada à saúde SF-36

Instruções: Esta pesquisa questiona você sobre sua saúde. Estas informações nos manterão informados de como você se sente e quão bem você é capaz de fazer suas atividades de vida diária. Responda cada questão marcando a resposta como indicado. Caso você esteja inseguro ou em dúvida em como responder, por favor **tente responder o melhor que puder.**

1. Em geral, você diria que sua saúde é :

(circule uma)

Excelente	Muito boa	Boa	Ruim	Muito Ruim
1	2	3	4	5

2. **Comparada a um ano atrás**, como você classificaria sua saúde em geral, **agora** ?

(**circule uma)**

Muito melhor	Um pouco melhor	Quase a mesma	Um pouco pior	Muito pior
1	2	3	4	5

3. Os seguintes itens são sobre atividades que você poderia fazer atualmente durante um dia comum. **Devido a sua saúde,** você teria dificuldade para fazer essas atividades? Neste caso, quanto?

(circule um número em cada linha)

Atividades	Sim. Dificulta muito	Sim. Dificulta um pouco	Não.Não dificulta de modo algum
a. Atividades vigorosas, que exigem muito esforço, tais como correr, levantar objetos pesados, participar em esportes árduos	1	2	3
b. **Atividades moderadas,** tais como mover uma mesa , passar aspirador de pó, jogar bola, varrer a casa	1	2	3
c. Levantar ou carregar mantimentos	1	2	3
d. Subir **vários** lances de escada	1	2	3
e. Subir **um lance** de escada	1	2	3

f. Curvar-se , ajoelhar-se ou dobrar-se	1	2	3
g. Andar **mais de 1 quilômetro**	1	2	3
h. Andar **vários quarteirões**	1	2	3
i. Andar **um** quarteirão	1	2	3
j. Tomar banho ou vestir-se	1	2	3

4. Durante as **últimas 4 semanas**, você teve algum dos seguintes problemas com o seu trabalho ou com alguma atividade diária regular, **como consequência de sua saúde física?**

(**circule uma em cada linha)**

	Sim	Não
a.Você diminuiu **a quantidade de tempo** que dedicava-se ao seu trabalho ou a outras atividades?	1	2
b. Realizou **menos tarefas do** que você gostaria ?	1	2
c. Esteve **limitado n**o seu tipo de trabalho ou em outras atividades?	1	2
d. Teve **dificuldade** de fazer seu trabalho ou outras atividades (p.ex: necessitou de um esforço extra) ?	1	2

5. Durante as **últimas 4 semanas**, você teve algum dos seguintes problemas com o seu trabalho ou outra atividade regular diária**, como consequência de algum problema emocional** (como sentir-se deprimido ou ansioso) ?

(circule uma em cada linha)

	Sim	Não
a.Você diminuiu **a quantidade de tempo** que dedicava-se ao seu trabalho ou a outras atividades?	1	2
b. Realizou **menos tarefas** do que você gostaria ?	1	2

c. Não trabalhou ou não fez qualquer das atividades com tanto **cuidado** como geralmente faz ?	1	2

6. Durante as **últimas 4 semanas**, de que maneira sua saúde física ou problemas emocionais interferiram nas suas atividades sociais normais, em relação a família, vizinhos , amigos ou em grupo?

(circule uma)

De forma nenhuma	Ligeiramente	Moderadamente	Bastante	Extremamente
1	2	3	4	5

7. Quanta dor **no corpo** você teve durante as **últimas 4 semanas?**

(circule uma)

Nenhuma	Muito leve	Leve	Moderada	Grave	Muito Grave
1	2	3	4	5	6

8. Durante as **últimas 4 semanas**, quanto a dor interferiu com o seu trabalho normal (incluindo tanto o trabalho, fora de casa e dentro de casa)? **(circule uma)**

De maneira alguma	Um pouco	Moderadamente	Bastante	Extremamente
1	2	3	4	5

9. Estas questões são sobre como você se sente e como tudo tem acontecido com você durante as **últimas 4 semanas**. Para cada questão, por favor dê uma resposta que mais se aproxime da maneira como você se sente. Em relação **as últimas 4 semanas.**

(circule um número para cada linha)

	Todo tempo	A maior parte do tempo	Uma boa parte do tempo	Alguma parte do tempo	Uma pequena parte do tempo	Nunca
a. Quanto tempo você tem se sentido cheio de vigor, cheio de vontade, cheio de força?	1	2	3	4	5	6
b. Quanto tempo você tem se sentido uma pessoa muito nervosa?	1	2	3	4	5	6
c. Quanto tempo você tem se sentido tão deprimido que nada pode animá-lo?	1	2	3	4	5	6
d. Quanto tempo você tem se sentido calmo ou tranqüilo?	1	2	3	4	5	6
e. Quanto tempo você tem se sentido com muita energia?	1	2	3	4	5	6
f. Quanto tempo você tem se sentido desanimado e abatido?	1	2	3	4	5	6
g.Quanto tempo você tem se sentido esgotado?	1	2	3	4	5	6
h. Quanto tempo você tem se sentido uma pessoa feliz?	1	2	3	4	5	6

i.Quanto tempo você tem se sentido cansado?	1	2	3	4	5	6

10. Durante as últimas **4 semanas**, quanto do seu tempo a sua **saúde física ou problemas emocionais** interferiram com as suas atividade sociais (como visitar amigos, parentes, etc.)?

(circule uma)

Todo o tempo	A maior parte do tempo	Alguma parte do tempo	Uma pequena parte do tempo	Nenhuma parte do tempo
1	2	3	4	5

11. O quanto **verdadeiro** ou **falso** é **cada** uma das afirmações para você?
(**circule um número em cada linha)**

	Definiti-vamente verdadeiro	A maioria das vezes verdadeiro	Não sei	A maioria das vezes falsa	Definitiva-mente falsa
a. Eu costumo adoecer um pouco mais facilmente que as outras pessoas	1	2	3	4	5
b. Eu sou tão saudável quanto qualquer pessoa que eu conheço	1	2	3	4	5
c. Eu acho que a minha saúde vai piorar	1	2	3	4	5
d. Minha saúde é excelente	1	2	3	4	5

BDI

Data: _____

Nome: _____ Estado Civil: _____ Idade: _____ Sexo: _____

Ocupação: _____ Escolaridade: _____

Este questionário consiste em 21 grupos de afirmações. Depois de ler cuidadosamente cada grupo, faça um círculo em torno do número (0, 1, 2, ou 3) próximo à afirmação, em cada grupo, que descreve melhor a maneira que você tem se sentido na última semana, incluindo hoje. Se várias afirmações num grupo parecerem se aplicar igualmente bem, faça um círculo em cada uma. Tome o cuidado de ler todas as afirmações, em cada grupo, antes de fazer a sua escolha.

1
0 Não me sinto triste.
1 Eu me sinto triste.
2 Estou sempre triste e não consigo sair disto.
3 Estou tão triste ou infeliz que não consigo suportar.

2
0 Não estou especialmente desanimado quanto ao futuro.
1 Eu me sinto desanimado quanto ao futuro.
2 Acho que nada tenho a esperar.
3 Acho o futuro sem esperança e tenho a impressão de que as coisas não podem melhorar.

3
0 Não me sinto um fracasso.
1 Acho que fracassei mais do que uma pessoa comum.
2 Quando olho para trás, na minha vida, tudo o que posso ver é um monte de fracassos.
3 Acho que, como pessoa, sou um completo fracasso.

4
0 Tenho tanto prazer em tudo como antes.
1 Não sinto mais prazer nas coisas como antes.
2 Não encontro um prazer real em mais nada.
3 Estou insatisfeito ou aborrecido com tudo.

5
0 Não me sinto especialmente culpado.
1 Eu me sinto culpado grande parte do tempo.
2 Eu me sinto culpado na maior parte do tempo.
3 Eu me sinto sempre culpado.

6
0 Não acho que esteja sendo punido.
1 Acho que posso ser punido.
2 Creio que vou ser punido.
3 Acho que estou sendo punido.

7
0 Não me sinto decepcionado comigo mesmo.
1 Estou decepcionado comigo mesmo.
2 Estou enojado de mim.
3 Eu me odeio.

8
0 Não me sinto de qualquer modo pior que os outros.
1 Sou crítico em relação a mim por minhas fraquezas ou erros.
2 Eu me culpo sempre por minhas falhas.
3 Eu me culpo por tudo de mal que acontece.

9
0 Não tenho quaisquer idéias de me matar.
1 Tenho idéias de me matar, mas não as executaria.
2 Gostaria de me matar.
3 Eu me mataria se tivesse oportunidade.

10
0 Não choro mais que o habitual.
1 Choro mais agora do que costumava.
2 Agora, choro o tempo todo.
3 Costumava ser capaz de chorar, mas agora não consigo, mesmo que o queira.

11
0 Não sou mais irritado agora do que já fui.
1 Fico aborrecido ou irritado mais facilmente do que costumava.
2 Agora, eu me sinto irritado o tempo todo.
3 Não me irrito mais com coisas que costumavam me irritar.

12
0 Não perdi o interesse pelas outras pessoas.
1 Estou menos interessado pelas outras pessoas do que costumava estar
2 Perdi a maior parte do meu interesse pelas outras pessoas.
3 Perdi todo o interesse pelas outras pessoas.

13
0 Tomo decisões tão bem quanto antes.
1 Adio as tomadas de decisões mais do que costumava.
2 Tenho mais dificuldade de tomar decisões do que antes.
3 Absolutamente não consigo mais tomar decisões.

_____Subtotal da Página 1 CONTINUAÇÃO NO VERSO

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Tradução e adaptação brasileira, 1994. Casa do Psicólogo Livraria e Editora Ltda.

14 0 Não acho que de qualquer modo pareço pior do que antes.
1 Estou preocupado em estar parecendo velho ou sem atrativo.
2 Acho que há mudanças permanentes na minha aparência, que me fazem parecer sem atrativo.
3 Acredito que pareço feio.

15 0 Posso trabalhar tão bem quanto antes.
1 É preciso algum esforço extra para fazer alguma coisa.
2 Tenho que me esforçar muito para fazer alguma coisa.
3 Não consigo mais fazer qualquer trabalho.

16 0 Consigo dormir tão bem como o habitual.
1 Não durmo tão bem como costumava.
2 Acordo 1 a 2 horas mais cedo do que habitualmente e acho difícil voltar a dormir.
3 Acordo várias horas mais cedo do que costumava e não consigo voltar a dormir.

17 0 Não fico mais cansado do que o habitual.
1 Fico cansado mais facilmente do que costumava.
2 Fico cansado em fazer qualquer coisa.
3 Estou cansado demais para fazer qualquer coisa.

18 0 O meu apetite não está pior do que o habitual.
1 Meu apetite não é tão bom como costumava ser.
2 Meu apetite é muito pior agora.
3 Absolutamente não tenho mais apetite.

19 0 Não tenho perdido muito peso se é que perdi algum recentemente.
1 Perdi mais do que 2 quilos e meio.
2 Perdi mais do que 5 quilos.
3 Perdi mais do que 7 quilos.

Estou tentando perder peso de propósito, comendo menos: Sim_____ Não _____

20 0 Não estou mais preocupado com a minha saúde do que o habitual.
1 Estou preocupado com problemas físicos, tais como dores, indisposição do estômago ou constipação.
2 Estou muito preocupado com problemas físicos e é difícil pensar em outra coisa.
3 Estou tão preocupado com meus problemas físicos que não consigo pensar em qualquer outra coisa.

21 0 Não notei qualquer mudança recente no meu interesse por sexo.
1 Estou menos interessado por sexo do que costumava.
2 Estou muito menos interessado por sexo agora.
3 Perdi completamente o interesse por sexo.

_____ Subtotal da Página 2

_____ Subtotal da Página 1

_____ Escore Total

Inventário Beck de Ansiedade

BAI_____

Nome:_____Estado Civil: _____ Idade: _____ Sexo: _____

Ocupação: _____ Escolaridade: _____

Abaixo está uma lista de sintomas comuns de ansiedade. Por favor, leia cuidadosamente cada item da lista. Identifique o quanto você tem sido incomodado por cada sintoma durante a última semana, incluindo hoje, colocando um "x" no espaço correspondente, na coluna próxima a cada sintoma.

	Absolutamente não	**Levemente** (Não me incomodou muito)	**Moderadamente** (Foi muito desagradável mas pude suportar)	**Gravemente** (Dificilmente pude suportar)
1. Dormência ou formigamento.				
2. Sensação de calor.				
3. Tremores nas pernas.				
4. Incapaz de relaxar.				
5. Medo que aconteça o pior.				
6. Atordoado ou tonto.				
7. Palpitação ou aceleração do coração.				

8. Sem equilíbrio.				
9. Aterrorizado.				
10. Nervoso.				
11. Sensação de sufocação.				
12. Tremores nas mãos.				
13. Trêmulo.				
14. Medo de perder o controle.				
15. Dificuldade de respirar.				
16. Medo de morrer.				
17. Assustado.				
18. Indigestão ou desconforto no abdômen.				
19. Sensação de desmaio.				
20. Rosto afogueado.				
21. Suor (não devido ao calor).				

MEDINDO
QUALIDADE DE VIDA
DE UMA OUTRA PESSOA

ORGANIZAÇÃO MUNDIAL DA SAÚDE
AVALIAÇÃO DE QUALIDADE DE VIDA
WHOQOL-BREF
versão em português

Instruções

Neste questionário você avaliará como o seu familiar ou a pessoa que você cuida se sente em relação à sua própria Qualidade de Vida, saúde e outras áreas da vida dela. Por favor, responda todas as questões. Se você não tem certeza sobre que resposta dar em uma questão, por favor, escolha entre as alternativas a que lhe parece mais apropriada. Esta, muitas vezes, poderá ser a sua primeira escolha.

Por favor, procure responder tendo em mente os valores, aspirações, prazeres e preocupações de seu familiar ou pessoa que você cuida. Nós estamos perguntando o que ele/ela acha de sua própria vida, tomando como referência **as duas últimas semanas**.

Por exemplo, pensando nas últimas duas semanas, uma questão poderia ser:

O quanto ele(a) se preocupa com sua própria saúde?				
nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

Você deve circular o número que melhor corresponde ao quanto ele(a) se preocupou com a saúde dele(a) nas últimas duas semanas. Portanto, você deve fazer um círculo no número 4 se ele(a) se preocupou "bastante" com a sua própria saúde, ou fazer um círculo no número 1 se ele(a) não se preocupou "nada" com a sua própria saúde. Por favor, leia cada questão, veja o que você acha, e faça um círculo no número que lhe parece a melhor resposta.

Muito obrigado por sua ajuda.

G1 Como ele(a) avaliaria a sua própria Qualidade de Vida?

muito ruim	ruim	nem ruim nem boa	boa	muito boa
1	2	3	4	5

G4 Quão satisfeito(a) ele(a) está com a sua própria saúde?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F1.4 Em que medida você acha que a dor (física) dele(a) o(a) impede de fazer o que ele(a) precisa?

nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

F11.3 Quanto ele(a) precisa de algum tratamento médico para levar sua vida diária?

nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

F4.1 O quanto ele(a) aproveita a vida?

nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

F24.2 Em que medida ele(a) acha que a sua própria vida tem sentido?

nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

F5.3 O quanto ele(a) consegue se concentrar?

nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

F16.1 Quão seguro(a) ele(a) se sente em sua vida diária?

nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

F22.1 Quão saudável é o ambiente físico dele(a) (clima, barulho, poluição, atrativos)?

nada	muito pouco	mais ou menos	bastante	extremamente
1	2	3	4	5

F2.1 Ele(a) tem energia suficiente para o seu dia-a-dia?

nada	muito pouco	médio	muito	completamente
1	2	3	4	5

F7.1 Ele(a) é capaz de aceitar a sua própria aparência física?

nada	muito pouco	médio	muito	completamente
1	2	3	4	5

F18.1 Ele(a) tem dinheiro suficiente para satisfazer as suas próprias necessidades?

nada	muito pouco	médio	muito	completamente
1	2	3	4	5

F20.1 Quão disponível para ele(a) estão as informações que precisa no seu dia-a-dia?

nada	muito pouco	médio	muito	completamente
1	2	3	4	5

F21.1 Em que medida ele(a) tem oportunidades de atividades de lazer?

nada	muito pouco	médio	muito	completamente
1	2	3	4	5

F9.1 Quão bem ele(a) é capaz de se locomover?

muito ruim	ruim	nem ruim nem bom	bom	muito bom
1	2	3	4	5

F3.3 Quão satisfeito(a) ele(a) está como o seu sono?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F10.3 Quão satisfeito(a) ele(a) está com a capacidade de desempenhar as atividades do seu dia-a-dia?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F12.4 Quão satisfeito(a) ele(a) está com a sua própria capacidade para o trabalho?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F6.3 Quão satisfeito(a) ele(a) está consigo mesmo(a)?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F13.3 Quão satisfeito(a) ele(a) está com as suas relações pessoais (amigos, parentes, conhecidos, colegas)?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F15.3 Quão satisfeito(a) ele(a) está com a sua vida sexual?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F14.4 Quão satisfeito(a) ele(a) está com o apoio que ele(a) recebe dos seus amigos?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F17.3 Quão satisfeito(a) ele(a) está com as condições do local onde mora?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F19.3 Quão satisfeito(a) ele(a) está com o seu acesso aos serviços de saúde?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F23.3 Quão satisfeito(a) ele(a) está com o seu meio de transporte?

muito insatisfeito	insatisfeito	nem satisfeito nem insatisfeito	satisfeito	muito satisfeito
1	2	3	4	5

F8.1 Com que freqüência ele(a) tem sentimentos negativos, tais como mau humor, desespero, ansiedade, depressão?

nunca	raramente	às vezes	repetidamente	sempre
1	2	3	4	5

Obrigado(a) pela sua atenção!