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# Physicians' response to sexual dysfunction presented by a younger vs. An older adult

Ateret Gewirtz-Meydan[1,2] and Liat Ayalon[1]

[1]The Louis and Gaby Weisfeld school of Social Work, Bar-Ilan University, Ramat Gan, Israel
[2]Sex and Couple Therapy Unit, Meir medical Center, Kfar Saba, Israel
*Correspondence to*: A. Gewirtz-Meydan, E-mail: ateret.meydan@gmail.com

**Aim:** The aim of this study is to determine whether physicians have an age bias regarding sexual dysfunction presented by older vs. younger patients in terms of attributed diagnosis, etiology, proposed treatment and perceived prognosis.

**Method:** An on-line survey consisting of one of two, randomly administered, case vignettes, which differed only by the age of the patient (28 or 78). In both cases, the patient was described as suffering from occasional erectile dysfunction with a clear psychosocial indication. A total of 236 physicians responded to the survey. Overall, 110 physicians received an "old" vignette and 126 physicians received a "young" vignette.

**Results:** Even though both cases presented with a clear psychosocial etiology, the "older" vignette was more likely to be diagnosed with erectile dysfunction whereas the "younger" vignette was more likely to be diagnosed with performance anxiety. The "older" vignette's dysfunction was more likely to be attributed to hormonal changes, health problems and decreased sexual desire. Physicians were more likely to recommend testosterone replacement therapy (TRT) and PDE5 inhibitors (PDE5i; such as Sildenafil; Vardenafil; Tadalafil) as well as a referral to urology to the "older" vignette. In contrast, the "younger" vignette was more often referred to a sexologist and received a more positive prognosis than the older patient.

**Conclusions:** This study demonstrates an age bias among physicians regarding sexuality in later life. Of particular note is the tendency to prescribe PDE5i to the older patient, despite the clear psychosocial indication presented in the case vignette. Copyright © 2016 John Wiley & Sons, Ltd.

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## Introduction

Sexual interest and activity continue to play a role in people's lives as they age (American Association of Retierd Persons, 2010; DeLamater, 2012; Waite *et al.*, 2009). Research has reported that older adults continue to engage in various sexual activities, such as vaginal intercourse, oral sex and masturbation even in the eighth and ninth decades of life (Lindau *et al.*, 2007). Maintaining sexual activity is a significant component of well-being and relationship satisfaction in later life (Brody, 2010). Moreover, surveys conducted in several countries have consistently found that older adults indicated the importance of remaining sexually active (Beutel *et al.*, 2008; Kontula and Haavio-Mannila, 2009; Mercer *et al.*, 2013).

Nonetheless, age related changes in general and sexual health in middle-aged and older men are evident. According to data obtained by eight European centers, erectile dysfunction (ED; moderate or severe) was reported by 30% of the sample. It was higher in the older age groups, with a peak in men over the age of 70 years (Corona *et al.*, 2010). Araujo *et al.* (2004) examined 1085 older men (aged 40–70) regarding

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individual changes in sexual functioning over a 9-year period. They have found a decline in all domains of sexual functioning except to the frequency of ejaculation with masturbation. The number of erections per month declined by 3, 9, and 13 in men in their 40s, 50s, and 60s, respectively. In a cross-national study, the overall age-specific prevalence of moderate or complete erectile dysfunction in men increased with age (from 9% among 40 to 44 year-olds to 54% among those between the ages of 65 and 70) (Nicolosi *et al.*, 2003). Sexual dysfunctions are commonly associated with medical comorbidities, which also are more prevalent in old age (Corona *et al.*, 2010; Nicolosi *et al.*, 2003). For example, in a sample of 12,815 men over the age of 50, the presence and severity of lower urinary tract symptoms was an independent risk factor for sexual dysfunction (Rosen *et al.*, 2003).

Nonetheless, although, erectile dysfunction often co-occurs with physical risk factors, it has a substantial impact on one's self-esteem, partner satisfaction and the couple's intimate relationship. Yet, physicians rarely address bio-psycho-social factors (Gambescia *et al.*, 2009). Studies call physicians who treat older adults with sexual problems, to take into account not only the older adults' physical health, but also their psychosocial health and satisfaction with their intimate relationship (Laumann *et al.*, 2008).

Despite the growing recognition that sex represents an important aspect of quality of life (Gott and Hinchliff, 2003; Gott *et al.*, 2004), studies have found a lack of knowledge and a low level of awareness regarding sexual health issues in later life among physicians (Dogan *et al.*, 2008; Gott and Hinchliff, 2003; Gott *et al.*, 2004). Physicians report having inadequate knowledge about late life sexuality (Dogan *et al.*, 2008) and identify their training in this area as insufficient (Gott *et al.*, 2004). The reluctance of physicians to discuss sexuality with older people has also been attributed to limited time, a lack of communication skills or simply a wish to avoid an inconvenient situation or embarrassment (Bouman *et al.*, 2006; Dogan *et al.*, 2008). Other studies have suggested that the main barrier to providing sexual healthcare to older adults is ageist attitudes held by physicians with regard to asexuality in old age (Gott *et al.*, 2004). Studies have found that physicians are significantly more likely to discuss sexual matters with younger patients than with older adults, as they consider sexuality a 'private' topic which should not be discussed with older persons. Physicians do not proactively discuss sexual health issues with older patients as they do not see it as a legitimate topic of discussion (Gott *et al.*, 2004). A different study conducted in the UK revealed age bias among psychiatrists, who are more likely to take sexual history from middle-aged patients than from older patients (Bouman and Arcelus, 2001).

It is important to determine not only whether physicians hold ageist beliefs, but also how this might impact practice patterns and treatment decisions. Although these studies indicate the existence of age bias among physicians regarding discussing sexual matters with older adults, they do not reveal whether this bias influences the assigned diagnosis, attributed etiological factors, proposed treatment and perceived prognosis of sexual dysfunction of older adults compared with younger adults.

The present study is particularly important given the popularity of PDE5i (phosphodiesterase type 5 inhibitor such as Sildenafil; Vardenafil; Tadalafil) and its introduction as a safe, and well-tolerated medication for the treatment of erectile dysfunction (Buvat *et al.*, 2011; Morelli *et al.*, 2004) since its FDA approval in 1998. There are a number of PDE5i medication, all are considered a first-line of treatment, either administered on demand or on a daily basis to treat sexual dysfunction (Smith *et al.*, 2013). According to the Global Better Sex Survey, which included 12,563 individuals worldwide, only 7% of respondents with erectile dysfunction reported using prescription erectile dysfunction medication, but 74% were willing to use prescription erectile dysfunction medication (Mulhall *et al.*, 2008). Even in the absence of erectile dysfunction, 68% of healthy men reported being willing to use prescription erectile dysfunction medication if they thought it would make sex better, and 64% of their partners supported such a decision (Eardley *et al.*, 2004; Mulhall *et al.*, 2008).

Although proven to be an effective oral treatment for erectile dysfunction (Petrone *et al.*, 2003), it has some limitations. Adverse reactions most commonly observed are flushing, headache, nasal congestion and heartburn (Moreira *et al.*, 2000). This might be particularly problematic in the case of older adults, who already take a large number of medication and suffer from multiple chronic conditions (Kaufman *et al.*, 2002; Zadak *et al.*, 2013). Treatment failures might be due to the severity of the underlying pathophysiology, improper use of the medication, unrealistic patient expectations, difficult relationship dynamics, severe performance anxiety, and other relationship difficulties and psychological problems (Park *et al.*, 2013). PDE5i addresses one aspect of a complex problem. Hence, proper patient counseling and follow-up is necessary to overcome psychological and partner issues. Psychosexual counseling is an important component which determines the eventual

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success of treatment for the patient and his partner (Rosen, 2001).

In light of current research on the spread of PDE5i and the limited use of psychosexual counseling (Fagan, 2007), on the one hand, and the medicalization of sexuality among older adults (Marshall, 2012), on the other hand, the present study was designed to examine physicians' response to sexual dysfunction in older vs. younger patients with regard to attributed diagnosis, etiology, proposed treatment and perceived prognosis. Taking into consideration the evidence of increased sexual dysfunctions in later life (Johannes *et al.*, 2000), an identical vignette indicating a clear psychological impact was used to test age bias.

## Method

### Sample, procedure and measures

The study was approved by the ethics committee of Bar-Ilan University. The sample consisted of 236 Israeli physicians. Physicians were approached via email with a link to the online survey, using Qualtrics software. The questionnaire was sent to mailing lists of physicians obtained by colleagues and a marketing company which advertises to physicians.

Contrastive Vignette Technique (CVT) is an indirect-structured methodology designed to overcome many of the shortcomings inherent in self-report techniques (Burstin *et al.*, 1980), such as consciously biasing one's response for the purpose of impression-management (e.g. social approval) (Soydan and Stal, 1994). The vignette technique is a well-known and recommended research method in the study of potentially difficult topics (Hughes and Huby, 2002) and in the measurement of social attitudes (Burstin *et al.*, 1980). Vignettes were suggested as an appropriate method to examine professional decision making, as the randomized factors within the vignettes, combined with the randomization of the selection of vignettes for each decision maker, give the factorial survey a unique capability to investigate the effect of vignette type on one's decisions (Taylor, 2006). The vignette and questionnaires were developed by the researchers (a specialist in sexology and a geropsychologist) and validated in two steps: First, vignettes and subsequent questions were reviewed by five physicians holding double-specialties: a specialty in medicine (e.g. general practitioner, genecology and rehabilitation) and a specialization in sexology. Following their review, corrections and improvements were made. Secondly, the vignette was distributed as a small pilot study to five physicians in order to receive additional feedback and further improve the vignette and subsequent questions regarding the vignette.

Participants randomly received one of two vignettes. Both vignettes presented a patient with sexual problems of a clear psychosocial nature. Vignettes were identical with the exception of patient's age ("old": 78 years old, n = 110; or "young": 28 years old, n = 126). See Appendix 1 for details. After reading the vignette, physicians were asked to answer questions concerning the attributed diagnosis, etiology, recommended treatment, and expected prognosis of the patient.

*Diagnosis*. Respondents were asked to rank the likelihood that they would diagnose this case as erectile dysfunction (ED) or performance anxiety (PA) on a Likert scale between 1 (very unlikely) and 5 (very likely). Respondents were also given an open answer (Other), which they could specify using their own words.

*Attributed etiology.* The questionnaire contained eleven choices regarding the possible etiology of the presented complaint (e.g. hormonal changes, psychological factors, environmental factors, etc.). Physicians were asked to rate each item on a scale of 1 (very unlikely) to 5 (very likely).

*Intervention/treatment.* Physicians were presented with four possible treatments: Medication (PDE5i; such as Viagra/ Levitra/ Cialis); testosterone replacement therapy (TRT); referral to a urologist; or referral to a sexologist. Respondents were asked to rank the likelihood they would treat the patient with the suggested treatments on a Likert scale from 1 (very unlikely) to 5 (very likely).

*Prognosis.* Respondents were asked to indicate the likelihood that the treatment would be successful from 1 (very low probability) to 5 (very high probability).

Physicians' characteristics including, age, sex, specialization (general practitioner vs. other) and training in sexual therapy (yes/no) were collected based on self-report.

### Statistical analysis

First, we conducted descriptive statistics. Because our purpose was to randomly assign the two vignettes, we compared the characteristics of physicians who responded to the "young" vs. "old" vignettes. Given the categorical nature of all physicians characteristics

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examined, three chi-square analyses were conducted. Next, we examined whether physicians' responses regarding proposed diagnosis, etiology, treatment and prognosis vary across vignette type ("young" vs. "old"). Given the continuous nature of all outcome variables, t-test analyses were conducted. Finally, we examined whether differences in responses to the questions regarding proposed diagnosis, etiology, treatment and prognosis vary across vignette type ("young" vs. "old"), when physicians characteristics are accounted for. Using regression analyses, we controlled for physicians' characteristics (gender, expertise and sexual training) to obtain the adjusted effects of vignette's age. In an additional sensitivity analysis, interactions between physician characteristics and vignette type were examined. This was conducted in order to test whether the vignette's effects are stronger among physicians of certain characteristics.

## Results

A total of 236 physicians responded to the survey. Their characteristics are described in Table 1. Half were men (N = 121, 51.3%). Most (N = 182, 77.1%) were general practitioners (GP) and the remaining (N = 54, 22.9%) were specialists in other areas (such as psychiatry, genecology and urology). Only 23 physicians (9.7%) reported receiving sexual training. Despite randomization, there were significant differences among physicians in the two groups divided by vignette's age. Those who received the "old" vignette were significantly more likely to be men and general practitioners, and were less likely to have received sexual training.

In the unadjusted analysis, there were significant differences in the diagnosis, treatment and prognosis assigned to the two vignettes. As can be seen in Table 2, physicians were more likely to assign a diagnosis of erectile dysfunction and less likely to assign a diagnosis of performance anxiety to the "old" vignette compared with the "young" vignette. Physicians were also more likely to recommend PDE5i and TRT and refer the "old" patient to a urologist. In contrast, they were less likely to recommend a referral to a sexologist to the "old" patient compared with the "young" patient.

With regard to etiology, physicians were more likely to assign male hormonal changes (a decrease in testosterone), health problems (e.g., heart disease, diabetes, thyroid problems, vascular changes, weakness of the pelvic floor, etc.) and a normal decrease in the desire for sex to the "old" patient compared with the "young" patient, but there were no significant differences with regard to etiological explanations concerning psychological factors, environmental factors and marital difficulties between the two vignettes. Lastly, physicians assigned a more positive prognosis to the "young" patient compared with the "old" one.

Table 3 presents the regression analyses, with proposed diagnosis, etiology, treatment and prognosis as outcome variables, vignette type as an independent variable, and physician characteristics (gender, specialty and sexuality training) as controls. Differences between responses to the two vignettes remained significant and in the same direction even after adjusting for physicians' characteristics. In addition, significant differences were found with regard to physicians' gender and specialty as potential predictors of physicians' responses. However, these differences were not consistent across all comparisons and do not provide a clear picture regarding a potential role of these characteristics in determining physicians' responses. Finally, of the 39 possible interactions examined, four were significant. However, these interactions did not reveal a clear pattern. Hence, they are not discussed further in the text.

## Discussion

The goal of this study was to determine if an age bias exists among physicians regarding sexual dysfunction presented by an older vs. younger patient regarding attributed diagnosis, etiological factors, proposed treatment and perceived prognosis. Results indicate that although the sexual dysfunction presented in the

Table 1 Sample characteristics

| Characteristic[a] | Total (N = 236) | Young vignette (N = 126) | Old vignette (110) | P-value |
|---|---|---|---|---|
| Woman | 115 (48.8%) | 67 (53.2%) | 48 (43.6%) | .15 |
| Expertise GP | 182 (77.1%) | 104 (82.5%) | 78 (70.9%) | .04 |
| Received sexual training | 23 (9.7%) | 17 (13.5%) | 6 (5.5%) | .04 |

[a]Chi-square analyses were conducted in order to identify whether physicians characteristics varied by vignette type (young vs. old).

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Table 2 Bivariate analyses to identify the relationship between vignette type ("young" vs. "old") and diagnosis, etiological factors, treatment and prognosis

| | Total (N = 236) Mean (SD)[a] | Young vignette (N = 126) Mean (SD) | Old vignette (N = 110) Mean (SD) | t (df) | P |
|---|---|---|---|---|---|
| **Diagnosis** (1-5) | | | | | |
| Erectile dysfunction | 2.19 (1.34) | 1.87 (1.14) | 2.57 (1.46) | -4.18 (234) | < .001 |
| Performance Anxiety | 4.50 (.88) | 4.67 (.61) | 4.29 (1.08) | 3.43 (234) | .001 |
| **Etiologic factors** (1-5) | | | | | |
| Male hormonal changes | 2.03 (1.17) | 1.37 (.63) | 2.80 (1.19) | -11.81 (234) | < .001 |
| Psychological factors | 4.44 (.86) | 4.51 (.81) | 4.36 (.91) | 1.29 (234) | .197 |
| Environmental | 3.50 (1.19) | 3.63 (1.12) | 3.35 (1.25) | 1.87 (234) | .062 |
| Different health problems | 2.15 (1.19) | 1.69 (.96) | 2.68 (1.21) | -7.01 (234) | < .001 |
| Difficulties in the marriage | 2.99 (1.30) | 3.10 (1.27) | 2.87 (1.32) | 1.32 (234) | .19 |
| A normal decrease in the desire for sex | 1.98 (1.15) | 1.69 (.98) | 2.32 (1.23) | -4.34 (234) | < .001 |
| **Treatment** (1-5) | | | | | |
| PDE5i | 3.28 (1.51) | 2.73 (1.49) | 3.90 (1.26) | -6.44 (234) | < .001 |
| TRT | 1.56 (.94) | 1.18 (.54) | 2.00 (1.09) | -7.42 (234) | < .001 |
| Referral to a urologist | 1.99 (1.16) | 1.73 (.95) | 2.29 (1.29) | -3.82 (234) | < .001 |
| Referral to a sexologist | 3.72 (1.36) | 3.96 (1.24) | 3.45 (1.44) | 2.95 (234) | .003 |
| **Prognosis**: success of treatment (1-5) | 4.04 (.66) | 4.14 (.68) | 3.93 (.62) | 2.54 (234) | .012 |

[a]A series of t-test analyses were conducted with vignette type as the independent variable and diagnosis, etiological factors, treatment and prognosis as the outcome variables.

Table 3 Predicting diagnosis, etiological factors, treatment and prognosis across the two vignettes ("young" vs. "old"), while controlling for physician characteristics (gender, physician specialty and sexuality training)

| | Independent variable | | | Controls | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vignette type (0 = old; 1 = young) | | | Gender (1 = men; 2 = women) | | | Physician specialty (GP = 1/not GP = 2) | | | Sexuality training (1 = yes, 2 = no) | | | |
| | B | SE | β | B | SE | β | B | SE | β | B | SE | β | $R^2$ |
| **Diagnosis** (1-5) | | | | | | | | | | | | | |
| Erectile dysfunction | -.71 | .17 | -.27*** | -.28 | .17 | -.10 | -.41 | .20 | -.13* | .21 | .29 | .05 | .10 |
| Performance Anxiety | .42 | .11 | .24*** | .31 | .11 | .17** | .35 | .13 | .17** | .35 | .19 | .11 | .09 |
| **Etiologic factors** (1-5) | | | | | | | | | | | | | |
| Male hormonal changes | -1.47 | .12 | -.63*** | -.11 | .12 | -.05 | -.37 | .15 | -.13* | -.09 | .21 | .005 | .38 |
| Psychological factors | .17 | .11 | .10 | .24 | .11 | .14* | .21 | .13 | .10 | .33 | .19 | .12 | .03 |
| Environmental | .25 | .16 | .11 | .27 | .15 | .11 | -2.66 | .19 | -.09 | .26 | .26 | .07 | .03 |
| Different health problems | -1.03 | .14 | -.43*** | -.05 | .14 | -.21 | -.48 | .17 | -.17** | .21 | .24 | .05 | .19 |
| Difficulties in the marriage | .18 | .17 | .07 | -.15 | .17 | -.06 | -.55 | .20 | -.18** | .09 | .29 | .02 | .02 |
| A normal decrease in the desire for sex | -.67 | .15 | -.29*** | -.23 | .14 | -.10 | -.42 | 17 | -.15* | -.20 | .24 | -.05 | .09 |
| **Treatment** (1-5) | | | | | | | | | | | | | |
| PDE5i | -1.13 | .18 | -.38*** | -.55 | .18 | -.18** | -.35 | .22 | -.10 | .29 | .30 | .06 | .18 |
| TRT | -.84 | .11 | -.45*** | -.25 | .11 | -.14* | -.31 | .13 | -.14* | -.16 | .19 | .05 | .21 |
| Referral to a urologist | -.52 | .15 | -.22** | -.08 | .15 | -.03 | -.16 | .18 | -.06 | .66 | .25 | .17 | .08 |
| Referral to a sexologist | .51 | .18 | .19** | .28 | .17 | .10 | .28 | .21 | ,09 | -.19 | .28 | -.04 | .04 |
| **Prognosis**: success of treatment (1-5) | .23 | .09 | .18** | -.03 | .09 | -.02 | .10 | .10 | .06 | .01 | .15 | .01 | .01 |

***p < .001; **p < .01; *p < .05. Based on a series of regression analyses, with vignette type as an independent predictor.

vignettes was occasional (erectile dysfunction appears only with the lover), which implies performance anxiety issues, physicians were more likely to assign a diagnosis of erectile dysfunction to the "old" vignette.

Diagnosing the complaint as erectile dysfunction, which is defined as a persistent inability to achieve or maintain an erection sufficient for satisfactory sexual performance (NIH Consensus Conference Impotence,

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1993), contains major implications for treatment. Whereas physicians were more likely to refer the younger patient diagnosed with performance anxiety to a sexologist, the older patient was more likely to be prescribed PDE5i and TRT and to be referred to a urologist. The high prevalence of physicians' recommendation for PDE5i and TRT for various sexual dysfunctions in later life, may be based on comprehensive studies indicating an increase in erectile dysfunction and other sexual difficulties in this age period (Laumann *et al.,* 2005; Panser *et al.,* 1995). Yet, it may also imply the possession of inaccurate assumptions that suggest that individual sexual functioning necessarily declines in later life (Laumann *et al.,* 2008).

Consistent with the diagnosis and treatment suggested, sexual dysfunction in the "old" vignette was attributed to hormonal changes, health problems and a normal decrease in sexual desire. It is important to note that an American Association of Retired Persons (AARP) study (American Association of Retired Persons, 1999) found that 43% of the men aged 60-74 and 17% of the men aged over 75 reported sexual desire a few times a week. In addition, no variations by age were found among men aged 40-80 who reported a lack of sexual interest (Moreira *et al.,* 2008). Lindau and Gavrilova (2010) analyzed data from 3,032 respondents aged 25-74 and concluded that among men, sexual interest was stable across age groups in contrast to women. Hence, the literature suggests that desire does not always decline as men and women age. It is a complex component which is influenced by many variables (Kontula and Haavio-Mannila, 2009).

The success of any intervention at least partially depends on the accuracy of diagnosis and expected prognosis assigned by the physician. This study suggests that in addition to diagnosing the "old" vignette with erectile dysfunction rather than performance anxiety, physicians were likely to assign a lower prognosis to the "old" vignette. The findings presented here are consistent with other studies that have indicated a lack of knowledge among physicians regarding sexuality among older adults (Hughes and Wittmann, 2015) and with studies that identified ageism among physicians (Bouman and Arcelus, 2001; Uncapher and Areán, 2000). Hence, the present findings might be attributable to specific biases held by physicians regarding sexuality in later life.

Despite its strengths, it is important to acknowledge several limitations of the present study. First, we relied on readily available email lists and do not have an accurate account of non-response rate or the representativeness of the sample. Second, it is important to acknowledge that attitudes and beliefs are not synonymous with actual behaviors. Hence, it is unclear whether the present findings reflect real-life differences in physicians' behaviors. Finally, it is possible that while reading the vignette, participating physicians relied on their former knowledge of age-related changes in ED and on previous studies which demonstrated robust increases in ED prevalence and incidence with age (Araujo *et al.,* 2004; Corona *et al.,* 2010; Nicolosi *et al.,* 2003). Nonetheless, the findings point to a potential over-prescription of PDE5i medication and TRT in the case of older adults. Given the potential side-effect profile of these medication and the already high number of medication taken by the average older patient (Kaufman *et al.,* 2002; Zadak *et al.,* 2013), it is important to acknowledge age-bias as a potential mechanism responsible for over-prescription of PDE5i medication and TRT and to address it in future trainings of physicians. It is also important to note that physician characteristics had no consistent associations with the outcome variables assessed. This further strengthens the potential presence of an age bias in the diagnosis and treatment of sexual dysfunction, unrelated to physicians' characteristics or prior training.

## Conflicts of interest

None

### Key points

- Using two identical vignettes with the exception of the patient's age, we found differences in physicians' assigned diagnosis, etiology, preferred treatment, and prognosis based on vignette's age.
- The "older" vignette was more likely to be diagnosed with erectile dysfunction, whereas the "younger" vignette was more likely to be diagnosed with performance anxiety.
- The "older" vignette's difficulties were more likely to be attributed to hormonal changes, health problems, and decreased sexual desire.
- Physicians were more likely to recommend TRT and PDE5 inhibitors as well as a referral to urology to the "older" vignette.

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## References

American Association of Retierd Persons. 2010. *Sex, romance and relationships: AARP survey of mid-life and older adults*. Washington, DC: AARP.

American Association of Retired Persons. 1999. *AARP/modern maturity sexuality study*. Washington, DC: AARP.

Araujo AB, Mohr BA, Mckinlay JB. 2004. Changes in sexual function in middle-aged and older men: Longitudinal data from the Massachusetts male aging study. *Journal of the American Geriatrics Society* **52**: 1502–1509.

Beutel, M. E., Stöbel-Richter, Y., & Brähler, E. (2008). Sexual desire and sexual activity of men and women across their lifespans: Results from a representative German community survey. *British Journal of Uorolgy International*, **101**(1), 76–82. http://doi.org/10.1111/j.1464-410X.2007.07204.x

Bouman, W. P., & Arcelus, J. (2001). Are psychiatrists guilty of "ageism" when it comes to taking a sexual history? *International Journal of Geriatric Psychiatry*, **16**(1), 27–31. http://doi.org/10.1002/1099-1166(200101)16:1<27::AID-GPS267>3.0.CO;2-S

Bouman, W. P., Arcelus, J., & Benbow, S. M. (2006). Nottingham study of sexuality & ageing (NoSSA I). Attitudes regarding sexuality and older people: a review of the literature. *Sexual and Relationship Therapy*, **21**(2), 149–161. http://doi.org/10.1080/14681990600618879

Brody, S. (2010). The relative health benefits of different sexual activities. *The Journal of Sexual Medicine*, **7**(4 Pt 1), 1336–1361. http://doi.org/10.1111/j.1743-6109.2009.01677.x

Burstin K, Dougutie EB, Raphaeli A. 1980. Contrastive Vignette Technique: An indirect methodology designed to address Rreactive social attitude measureme. *Journal of Applied Social Psychology* **10**(2): 147–165.

Buvat, J., Montorsi, F., Maggi, M., Porst, H., Kaipia, A., Colson, M. H., … Shabsigh, R. (2011). Hypogonadal men nonresponders to the PDE5 inhibitor Tadalafil benefit from normalization of testosterone levels with a 1% Hydroalcoholic testosterone gel in the treatment of erectile dysfunction (TADTEST Study). *Journal of Sexual Medicine*, **8**, 284–293. http://doi.org/10.1111/j.1743-6109.2010.01956.x

Corona, G., Lee, D. M., Forti, G., Connor, D. B. O., Maggi, M., Neill, T. W. O., … Finn, J. D. (2010). Age-related changes in general and sexual health in middle-aged and older men: Results from the European male. *Journal of Sexual Medicine*, **7**, 1362–1380. http://doi.org/10.1111/j.1743-6109.2009.01601.x

DeLamater, J. (2012). Sexual expression in later life: A review and synthesis. *Journal of Sex Research*, **49**(2–3), 125–141. http://doi.org/10.1080/00224499.2011.603168

Dogan, S., Demir, B., Eker, E., & Karim, S. (2008). Knowledge and attitudes of doctors toward the sexuality of older people in Turkey. *International Psychogeriatrics / IPA*, **20**(5), 1019–1027. http://doi.org/10.1017/S1041610208007229

Eardley, I., Dean, J., Barnes, T., Kirby, M., Glasser, D., & Solanki, J. (2004). The sexual habits of British men and women over 40 years old. *British Journal of Urology International*, **93**, 563–567. http://doi.org/10.1111/j.1464-410X.2004.04684.x

Fagan, P. (2007). Sex therapy and research: a view from health services research. *Journal of Sex & Marital Therapy*, **33**(5), 427–32. http://doi.org/10.1080/00926230701477139

Gambescia, N., Sendak, S. K., Weeks, G., Sendak, S. K., & Weeks, G. (2009). The treatment of erectile dysfunction. *Journal of Family Psychotherapy ISSN*, **20**(2–3), 221–240. http://doi.org/10.1080/08975350902970154

Gott, M., & Hinchliff, S. (2003). How important is sex in later life? The views of older people. *Social Science and Medicine*, **56**(8), 1617–1628. http://doi.org/10.1016/S0277-9536(02)00180-6

Gott, M., Hinchliff, S., & Galena, E. (2004). General practitioner attitudes to discussing sexual health issues with older people. *Social Science and Medicine*, **58**(11), 2093–2103. http://doi.org/10.1016/j.socscimed.2003.08.025

Hughes, A. K., & Wittmann, D. (2015). Aging Sexuality: Knowledge and Perceptions of Preparation Among U.S. Primary Care Providers. *Journal of Sex & Marital Therapy*, **41**(3), 304–313. http://doi.org/10.1080/0092623X.2014.889056

Hughes R, Huby M. 2002. The application of vignettes in social and nursing research. *Methodological Issues in Nursing Research* **37**(4): 382–386.

Johannes CB, Araujo AB, Feldman HA, *et al.* 2000. Incidence of erectile dysfunctionin men 40 to 69 years old: Longitudinal results from the Massachusetts male aging study. *The Journal of Urology* **163**(2): 460–463.

Kaufman, D. W., Kelly, J. P., Rosenberg, L., Anderson, T. E., & Mitchell, A. a. (2002). Recent patterns of medication use in the ambulatory adult population of the United States: the Slone survey. *JAMA : The Journal of the American Medical Association*, **287**(3), 337–344. http://doi.org/10.1001/jama.287.3.337

Kontula, O., & Haavio-Mannila, E. (2009). The impact of aging on human sexual activity and sexual desire. *Journal of Sex Research*, **46**(1), 46–56. http://doi.org/10.1080/00224490802624414

Laumann, E. O., Das, A., & Waite, L. J. (2008). Sexual dysfunction among older adults: Prevalence and risk factors from a nationally representative U.S. probability sample of men and women 57-85 years of age. *Journal of Sexual Medicine*, **5**, 2300–2311. http://doi.org/10.1111/j.1743-6109.2008.00974.x

Laumann, E. O., Nicolosi, A., Glasser, D. B., Paik, A., Gingell, C., Moreira, E., & Wang, T. (2005). Sexual problems among women and men aged 40-80 y: prevalence and correlates identified in the Global Study of Sexual Attitudes and Behaviors. *International Journal of Impotence Research*, **17**(1), 39–57. http://doi.org/10.1038/sj.ijir.3901250

Lindau, S. T., & Gavrilova, N. (2010). Sex, health, and years of sexually active life gained due to good health: evidence from two US population based cross sectional surveys of ageing. *British Journal of Medicine*, **340**(mar09 2), c810. http://doi.org/10.1136/bmj.c810

Lindau, S. T., Schumm, L. P., Laumann, E. O., Levinson, W., O'Muircheartaigh, C. A., & Waite, L. J. (2007). A study of sexuality and health among older adults in the United States. *New England Journal of Medicine*, **357**(8), 762–774. http://doi.org/10.1056/NEJMoa067423

Marshall, B. L. (2012). Medicalization and the refashioning of age-related limits on sexuality. *Journal of Sex Research*, **49**(4), 337–343. http://doi.org/10.1080/00224499.2011.644597

Mercer, C. H., Tanton, C., Prah, P., Erens, B., Sonnenberg, P., Clifton, S., … Johnson, A. M. (2013). Changes in sexual attitudes and lifestyles in Britain through the life course and over time: findings from the National Surveys of Sexual Attitudes and Lifestyles (Natsal). *The Lancet*, **382**(9907), 1781–1794. http://doi.org/10.1016/S0140-6736(13)62035-8

Moreira, E. D., Glasser, D. B., Nicolosi, A., Duarte, F. G., & Gingell, C. (2008). Sexual problems and help-seeking behaviour in adults in the United Kingdom and continental Europe. *British Journal of Uorolgy International*, **101**(8), 1005–1011. http://doi.org/10.1111/j.1464-410X.2008.07453.x

Moreira, S. G., Brannigan, R. E., Spitz, A., Orejuela, F. J., Lipshultz, L. I., & Kim, E. D. (2000). Side-effect profile of sildenafil citrate (Viagra) in clinical practice. *Urology*, **56**(3), 474–6. http://doi.org/10.1016/S0090-4295(00)00649-X

Morelli, A., Filippi, S., Mancina, R., Luconi, M., Vignozzi, L., Marini, M., … Maggi, M. (2004). Androgens regulate phosphodiesterase type 5 expression and functional activity in corpora cavernosa. *Endocrinology*, **145**(5), 2253–2263. http://doi.org/10.1210/en.2003-1699

Mulhall, J., King, R., Glina, S., & Hvidsten, K. (2008). Importance of and satisfaction with sex among men and women worldwide: Results of the global better sex survey. *Journal of Sexual Medicine*, **5**(4), 788–795. http://doi.org/10.1111/j.1743-6109.2007.00765.x

Nicolosi A, Moreira ED, Shirai M, *et al.* 2003. Epidemiology of erectile dysfunction in four countries: Cross-national study of the prevalence and correlates of erectile dysfunction. *Urology* **61**(1): 201–206.

NIH Consensus Conference Impotence. (1993). NIH Panel on Impotence. *Journal of the American Medical Association*, **270**, 83–90.

Panser, L. A., Rhodes, T., Girman, C. J. & et al. (1995). Sexual function of men ages 40 to 79 years: The olmsted county study of urinary symptoms and health status among men. *Journal of American Geriatric Society*, **43**, 1107–1111.

Park, N. C., Kim, T. N., & Park, H. J. (2013). Treatment strategy for non-responders to PDE5 inhibitors. *The World Journal of Men's Health*, **31**(1), 31–5. http://doi.org/10.5534/wjmh.2013.31.1.31

Petrone, L., Mannucci, E., Corona, G., Bartolini, M., Forti, G., Giommi, R., & Maggi, M. (2003). Structured interview on erectile dysfunction (SIEDY): a new, multidimensional instrument for quantification of pathogenetic issues on erectile dysfunction. *International Journal of Impotence Research*, **15**(3), 210–20. http://doi.org/10.1038/sj.ijir.3901006

Rosen R, Altwein J, Boyle P, *et al.* 2003. Lower urinary tract symptoms and male sexual dysfunction: the multinational survey of the aging male (MSAM-7). *European Urology* **44**: 637–649.

Rosen, R. C. (2001). Psychogenic erectile dysfunction. *Urologic Clinics of North America*, **28**(2), 269–278. http://doi.org/10.1016/S0094-0143(05)70137-3

Smith, W. B., McCaslin, I. R., Gokce, A., Mandava, S. H., Trost, L., & Hellstrom, W. J. (2013). PDE5 inhibitors: considerations for preference and long-term adherence. *International Journal of Clinical Practice*, **67**(8), 768–780. http://doi.org/10.1111/ijcp.12074

Soydan H, Stal R. 1994. How to use the vignette technique in cross-cultural social work research. *Scandinavian Journal of Social Welfare* **3**: 75–80.

Taylor, B. J. (2006). Factorial surveys: Using vignettes to study professional judgement. *British Journal of Social Work*, **36**, 1187–1207. http://doi.org/10.1093/bjsw/bch345

Uncapher H, Areán P a. 2000. Physicians are less willing to treat suicidal ideation in older patients. *Journal of the American Geriatrics Society* **48**(2): 188–192.

Waite, L. J., Laumann, E. O., Das, A., & Schumm, L. P. (2009). Sexuality: Measures of partnerships, practices, attitudes, and problems in the National Social Life, Health,

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and Aging Study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, **64** Suppl 1, i56-66. http://doi.org/10.1093/geronb/gbp038
Zadak, Z., Hyspler, R., Ticha, A., & Vlcek, J. (2013). Polypharmacy and malnutrition. *Current Opinion in Clinical Nutrition and Metabolic Care*, **16**(1), 50–5. http://doi.org/10.1097/MCO.0b013e32835b612e

## Appendix 1

Vignette of sexual dysfunction complaint by elder vs. young man

Arnold is (28/78 years old), married to Barbara. They have two children. Arnold is a software engineer in his professional life. He is usually healthy, does not take any medication or have any diseases. Arnold smokes or drinks on special occasions only or in specific social circumstances and maintains a healthy lifestyle.

For two years, Arnold has been having an affair with Amy, who he met at the gym. Amy is 8 years younger than Arnold and is a very energetic, and attractive woman.

Arnold turned to his family doctor and complained of having difficulties maintaining an erection in the last three months. During foreplay, he loses his erection and may not be able to penetrate. According to him, the loss of the erection appears **only** with Amy (his lover) and **not** with his wife.

After Arnold's lover expressed her dissatisfaction from the situation, Arnold turned to his family doctor to get help and return to normal sexual functioning with her.

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