

PERCEPTIONS OF PHYSICIANS, MEDICAL AND NURSING STUDENTS CONCERNING SHARED DECISION- MAKING

A CROSS-SECTIONAL STUDY

Aantal woorden: 6.253

Gabriël Cantaert

Stamnummer: 01500217

Promotor: Prof. dr. Ann Van Hecke

Copromotor: Prof. dr. Kim Smolderen

Masterproef voorgelegd voor het behalen van de graad master in de richting Master in de Verpleegkunde en de Vroedkunde

Academiejaar: 2017 - 2018



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Preface

The end of the sixth-year education of my nursing career is nearing. Anno 2018, I can be proud of many things such as my practical training in Finland, my studies abroad in Dublin, the postgraduate diploma of oncology, and my acceptance for an additional Erasmus study exchange coming year in Rome. The submission of this masters' thesis is perhaps one of the greatest achievements which I will remember due to various reasons. It greatly stimulated my personal growth and confronted me with my shortcomings as an academic trained nurse. More specifically, valuable time was wasted due to my attitude of wanting to know everything as it was difficult for me to focus on one thing. Because of this the scope of my research had to be narrowed down several times. Nonetheless, two years after been assigned the subject, I am satisfied with the result and the support I have received in these difficult but fulfilling years.

Therefore, I would like to express my gratitude to my parents who back me in the hardest of choices that I make. Furthermore, many thanks to colleagues and the head nurse Kathleen Vandamme at the Radiotherapy ward in the OLV Aalst Hospital for providing me wisdom and realistic life lessons. In addition, I am grateful to prof. dr. Ann Van Hecke and prof. dr. Dimitri Beeckman for providing me with the unique experience of travelling abroad in Dublin for four months last year, as this has significantly improved my academic writing skills. Furthermore, words of appreciation to the contact persons and the research assistants from the participating organisations. Moreover, a sign of gratitude to my copromotor prof. dr. Kim Smolderen for the guidance and constructive feedback during these two years. It was not always easy to communicate due to the approximately 7.250 km separating us. Despite this, I greatly value the unique experience this has brought me. It is thanks to you that I became familiar with shared decision-making and conscious of the lack of progress in Belgium. Last but not least, a word of thanks to prof. dr. Ann Van Hecke for adopting the role of promotor when prof. Smolderen moved out. Your expertise and advice has helped me greatly in limiting the scope of this thesis and in focussing on that what really matters.

I sincerely hope that this dissertation will prove beneficial in helping policy members, academic staff, health care providers and students in Flanders to realise the true meaning and benefits of shared decision making and the need for a patient-centred health care.

Abstract

Gezamenlijke besluitvorming (GB) wordt gezien als een vereiste voor een patiëntgerichte gezondheidszorg. De attitudes van zorgverleners zijn echter onvoldoende gekend in verschillende landen, waaronder België.

Daarom werd er een cross-sectioneel onderzoek uitgevoerd gedurende juni tot september 2017 waarin de attitudes omtrent GB bevraagd werd bij Vlaamse artsen, derde jaar postgraduaat studenten geneeskunde, en postgraduaatstudenten verpleegkunde. De Patient-Practitioner Orientation Scale werd gebruikt, waarbij een hogere score op de zes puntenschaal patiëntgerichtheid bij de respondent weerspiegeld. Informatie over het geslacht, leeftijd, rang, beroep en specialiteit werd opgevraagd om mogelijke verschillen tussen de groepen aan te tonen. Independent t-testen, One en Two-Way ANOVA, en multivariabele regressie met de variabelen geslacht, leeftijd, beroep en specialiteit werden uitgevoerd.

In totaal werden 266 antwoorden weerhouden, waarvan 93 artsen, 147 geneeskunde en 26 verpleegkunde studenten. De gemiddelde score van deze groepen was $4,24 \pm 0,64$; $4,30 \pm 0,61$; en $4,30 \pm 0,67$, respectievelijk. In vergelijking met vorige studies zijn de attitudes van Vlaamse zorgverleners en studenten voornamelijk ziekte-georiënteerd. In het multivariabele model is het vrouwelijke geslacht ($p < 0,10$) en tewerkstelling in huisartsen- of interne geneeskunde ($p < 0,05$) voorspellend voor hogere GB. Univariate verschillen ($p < 0,05$) tussen specialismen werd aangetoond waarbij pediaters ($4,79 \pm 0,69$), psychiaters ($4,74 \pm 0,47$), huisartsen ($4,31 \pm 0,59$) en gynaecologen ($4,40 \pm 0,38$) hoger scoren dan chirurgen ($3,84 \pm 0,58$).

Dit is de eerste studie die de attitudes van zorgverleners en medische/verpleegkundige studenten in Vlaanderen in kaart gebracht heeft. Hierbij is er nood aan gezondheidszorgbeleid en educatieve instellingen die een omgeving creëren waarin GB aangemoedigd wordt.

Abstract

Shared decision making (SDM) is promoted as a facilitator for a patient-centered health care. However, the attitudes of care providers pertaining SDM in various countries such as Belgium remains unknown.

Therefore, a cross-sectional study was conducted between June and September 2017 in which sharing attitudes of Flemish physicians, third year postgraduate medical, and postgraduate nursing students were measured with the Patient-Practitioner Orientation Scale. Higher scores on the six-point scale indicate a patient-centered respondent. In addition, sex, age, rank, occupation and specialty was surveyed to compare sharing attitudes between the groups. Independent t-tests, One and Two-way ANOVA and multivariable regression with the variables sex, age, occupation and specialty were calculated.

A total of 266 responses, of which 93 physicians, 147 medical and 26 nursing students were analyzed. Mean scores for the different groups were $4,24 \pm 0,64$; $4,30 \pm 0,61$; and $4,30 \pm 0,67$, respectively. Compared with prior studies, Flemish caregivers' and trainees' perceptions were disease-orientated. In the multivariable model, female sex ($p < 0,10$) and employment ($p < 0,05$) in general practice or internal medicine is predictive for higher sharing among physicians. Univariate differences ($p < 0,05$) between specialisms have been found in which pediatricians ($4,79 \pm 0,69$), psychiatrists ($4,74 \pm 0,47$), GPs ($4,31 \pm 0,59$) and Obs/Gyn ($4,40 \pm 0,38$) score higher than surgeons ($3,84 \pm 0,58$).

This is the first study that examined these attitudes from the providers' and medical/nursing trainees' perspective in Flanders. There is an urgent need for health policy and educational institutions to facilitate an environment in which SDM is supported.

DE MASTERPROEF IS IN ARTIKELVORM GESCHREVEN. DE UITGEBREIDE RAPPORTAGE VAN DE SYSTEMATISCHE LITERATUURSTUDIE MAAKT GEEN DEEL UIT VAN HET GESCHREVEN ARTIKEL. DE LITERATUURSTUDIE WERD EERDER BEOORDEELD IN HET GELIJKGENOEMDE OPLEIDINGSONDERDEEL.

Introduction

In 2001, The Institute of Medicine in America has advocated patient-centered care (PCC) as an essential factor in improving the quality of care (Baker 2001). Patient-centered care is part of the broader moral philosophical concept of patient-centeredness and comprises the interventions which are aimed to facilitate patient-centeredness in the health care system (Epstein et al. 2005, Gulbrandsen et al. 2016). Patient-centered communication is one of the aspects of PCC, wherein the model of shared decision making (SDM) plays a critical role (Beers et al. 2017, Levit et al. 2013).

Couët et al. (2015) define SDM as the process by which the patient and the health-care provider make health-related decisions together based on the best available evidence. Both parties are willing to exchange their knowledge, preferences and values (Hess et al. 2014, Legare and Witteman 2013). Stiggelbout et al. (2015) explain that following four steps are essential in SDM: (1) informing the patient that a decision needs to be made and that the patient's opinion is important; (2) explaining the treatment options and the pros and cons of each option; (3) identifying the patient's preferences and supporting the patient deliberation, and lastly (4) discussing the preferred role of the patient in the decision-making, making or deferring the decision, and arranging the follow-up. Shared decision-making is useful in a variety of clinical settings which pose significant strain on both parties and are accompanied with uncertain outcomes (Wilson et al. 2017). It is especially suitable in situations when the treatment decisions are elective and where one treatment option can be chosen while there are various others available which are equally effective, the so called "preference-sensitive" outcomes (Boss et al. 2016, Woodhouse et al. 2017).

There are various historical trends which have led to the rise of the patient-centered care paradigm and SDM. First, the upsurge of consumerism, in which the patients act more like customers who want information regarding the possible options, price and quality of care (Gray 2008, Lin and Fagerlin 2014, Mulvany 2014, Rider et al. 2014). Second, governmental and ethical policies which demand that patients are fully

informed and consent to the chosen decision (Charles et al. 1997, Mulvany 2014, Towle and Godolphin 1999). Third, the increasing complexity and the swift away from acute to chronic care with a rising need of long term relationships with care providers (Charles et al. 1997, Wilson et al. 2017). Lastly, the model of SDM can be seen as a mechanism to reduce the power and information asymmetry between physicians and patients and is a trade-off between the paternalistic approach, in which patients had to comply to what the physician had prescribed, and informed decision making, which implied that the physician informed the patient of all possible decisions (Beers et al. 2017, Stiggelbout et al. 2015).

Shared decision-making has the potential to improve the quality of medical decision-making as well as outcomes in clinical care. The main advantages are found at the individual patient level: improved satisfaction, less decisional conflict, better knowledge, feeling more secure about the treatment decisions at stake and less decisional regret (Boss et al. 2016, Shay and Lafata 2015, Stacey et al. 2014). This effect seems to be stronger among disadvantaged groups, reducing health inequality (Durand et al. 2014). Ting et al. (2014) add that SDM might improve therapy concordance and safety. Furthermore, future health care costs can be reduced, for instance because patients chose less often for invasive surgery (Boss et al. 2016, Oshima Lee and Emanuel 2013). Overall, it is recommended to implement in practice due to its ethical nature in empowering patients in their autonomy and self-determination, and by greating trust between clinicians and patients (Gulbrandsen et al. 2016, Pollard et al. 2015, Shay and Lafata 2015).

Several examples of leading initiatives that have originated in Anglo-Saxon countries, exist. In the USA for instance, integrating SDM in clinical practice is linked with reimbursements. Similarly, studies which aim to expand the knowledge base concerning the implementation of SDM are progressively being funded. Furthermore, a trend can be seen in the UK, Germany and the Netherlands among policy makers, professional and patient organizations which are devoted to make SDM the new norm in contemporary health care. These commitments have resulted in, among others, the development and dissemination of decision aids and training programs (Gulbrandsen et al. 2016, Harter et al. 2017).

Despite these advancements, the uptake of the SDM paradigm at the level of the providers has lagged (Couët et al. 2015, Gulbrandsen et al. 2016). Various articles

have examined physicians' attitudes towards the adoption of SDM. As such, physicians are less likely to involve patients in the decision making when a guideline favors one treatment. Additionally, the degree of SDM varies according to the patient population. Physicians, for instance, are reluctant to relinquish their absolute responsibility in situations where the patient is deemed intellectually impaired and unable or unwilling to participate. Decisions in context of hospital care, especially the emergency setting, are more often less shared than those taken in general practice. Lastly, the definition of SDM is regularly misunderstood in practice, consequently physicians think they are working according to the principles of SDM, while they are not (Pollard et al. 2015). Légaré et al. (2008) have identified the perceptions of time constraints, the characteristics of the patient and the clinical context as the three most critical barriers that may hamper the uptake of SDM. Other frequently mentioned barriers are a bias towards authoritarian norms (Beers et al. 2017), a lack of opportunities to stimulate patient involvement (Couet et al. 2015), and a misconception that patients do not want to participate in the decision making (Chewning et al. 2012, Joseph-Williams et al. 2014).

Research related to SDM in Flanders (*Belgium*) is very limited. An environmental scan carried out by Diouf et al. (2016) and Legare et al. (2012) showed not a single educational program for the training of health care professionals in SDM. In addition, the only retrieved articles with SDM as topic of interest focused either on psychiatric emergency services (De Fruyt et al. 2010), physical therapy (Devisch et al. 2015, Dierckx et al. 2013), end of life decisions (Pardon et al. 2012), renal replacement therapy (Peeters et al. 2016), assistive device use in home care (Roelands et al. 2004), the measurement of a patient participation culture on general wards (Malfait et al. 2016), or adherence to oral anticancer agents (Verbrugghe et al. 2016). As of such, it remains unclear to what extent some of the previously mentioned barriers are perceived by the providers in the Flemish care context.

Therefore, the overall objective of this study was to examine the perceptions towards SDM across care providers. More specifically, the aims were to (1) evaluate and compare the attitudes of the physicians and medical students, (2) explore the perceptions of the advanced practice nurses (APN) and Master of Science (MSc) students in Nursing, due to their increasing role in the decision-making process (Clark et al. 2009, George 2013) and, (3) test the hypotheses that a difference in SDM-related

attitudes exist on basis of occupation, age, rank and specialism. The hypotheses are that;

1. Nurses are more sharing than physicians and medical students.
2. Younger physicians and medical students are more sharing than older physicians.
3. And significant differences exist between the various (desired) specialisms of the medical students and the physicians.

Realizing these aims would allow to make a first attempt to shed light on the current situation and progress in the realization of SDM in Belgium. Furthermore, specific shortcomings can be identified and recommendations for practice, education and policy formulated.

Methods

Study design and setting

A cross-sectional study was conducted in which a convenience sampling method was used to select the participants and data were collected by use of an electronic self-report questionnaire. Participants were eligible if they were (1) third year student MSc in medicine, (2) student MSc in nursing and midwifery with their major in nursing, (3) physician or advanced practice nurse (APN).

Gatekeepers from the cooperating organizations were contacted throughout the months December 2016 until April 2017 by mail to acquire consent to collaborate and to ensure anonymity, as the electronic questionnaire was dispersed by them. The association of the nursing specialists and the general practitioners placed the questionnaire in their monthly newsletter and as an advertisement on their website. Additionally, both medical directors of each hospital agreed to forward the email to their physicians. Consent to recruit the MSc students in nursing and midwifery, and the third-year students in MSc in medicine was obtained by both study program committees of the respective faculty. However, only a written version of the questionnaire could be disseminated to the medical students. Approval to commence the study was granted by the Hospital Ethics Committee of each participating hospital in June 2017 with Belgian registration number B670201732380.

Consequently, data were collected during the months June until September 2017. The medical students were recruited right after they had finished their Objective Structured Clinical Examination (OSCE) on June 20th, 22d, 23th, 27th 2017. Assisting staff guided the students to an office where the researcher was seated. Consequently, the researcher informed the students of the study and inquired in their will to participate. Informed consent was obtained by agreeing on the statement that the acquired data may be analyzed in function of this study.

Measurement

Instrument: Patient-Practitioner Orientation Scale (PPOS)

Data were collected by use of the PPOS, a standardized survey that has been used around 60 times since it's development in 1999. It has a moderate to high reliability (Cronbach's α 0.75 to 0.88) and confirmed validity (Krupat 2016). The PPOS consists of 18 statements regarding the doctor-patient relationship and measures whether the

respondent prefers a disease-oriented or a patient-centered approach in the clinical encounter. The statements can further be categorized in the dimensions, sharing and caring. The subscale sharing reflects the respondent's assumptions to what extent patients want information and whether they should play a role in the decision-making process. The subscale caring, on the other hand, measures the amount of importance the respondent assigns to the expectations, emotions, and life circumstances of the patient (Krupat et al. 2000). One of the benefits of the PPOS is that across-population comparisons can be made (Lee et al. 2008).

The respondent has to rate the 18 different statements on a 6-point Likert scale in which, from left to right, strongly disagree is scored as 6, while strongly agree represents 1. Based on the mean scores, the respondent is either patient-centered (>5.00), medium patient-centered ($4.57 - 5.00$) or doctor-centered (<4.57). Items 9, 13 and 17 are reverse worded and coded (Krupat et al. 2000, Haidet et al. 2001). The original questionnaire can be consulted in appendix A.

Translation and validation

Permission was granted from the author, Professor Edward Krupat, to translate and adapt the questionnaire to the Flemish context. The review of guidelines of Epstein et al. (2015) was adhered in which the process of reconciliation was used by forward translating the original scale by both the author, a postgraduate student fluent in English and Dutch, and the supervising professor, who is bilingual and bicultural. Subsequently, some of the items were modified in consensus to improve readability and warrant semantic, conceptual and content equivalence. Furthermore, the statements were generally expressed with a paternalistic orientation to avoid acquiescence bias (Krupat et al. 2000). The translated questionnaire has been added to Appendix C.

The Cronbach's α of the translated PPOS scale was high (0,76), as well as the dimension caring (0,69), indicating a strong correlation. The subscale sharing was adequate (0,60). Item-scale correlations were over 0,30 for all items except item 9 (0,29), 13 (0,13), and 17 (-0,003), which were the reverse worded items (Cronbach 1951).

Meta-analysis have indicated that females are more likely in involving the patient in the discussion (Hall and Roter 1998, Mann et al. 2013, Roter et al. 2002). Therefore the

known groups method was used to determine construct validity (Hattie and Cooksey 1984). Separate independent T-tests within the samples confirm that female physicians (in training) are more sharing ($p < 0,05$). The mean scores have been categorically presented in table one in appendix C.

Variables of interest

Considering the focus of this study only the subscale sharing, which comprises of items 1, 4, 5, 8, 9, 10, 12, 15, & 18, has been reported as the dependent variable (continuous). The demographic variables which have been measured were age (ordinal), sex (nominal), (preferred future) specialty (categorical), and part-time or fulltime student (nominal).

Data analysis

Statistical methods

SPSS version 25 (*IBM®, New York*) was used to perform the statistical tests. Descriptive statistics were calculated in which the mean and standard deviation of the sharing subscale, and the frequencies of the demographic variables have been reported. The author of the PPOS states that a valid result can be calculated with up to two missing values of the outcome variable (Krupat 2016). Respondents with more than two missing values, or who did not fill in the demographic section of the survey, were excluded from the study. Furthermore, values which lie outside of the interval of the mean by ± 2 standard deviations (outlier) or ± 3 SD (extreme value), were exempted from analysis (George and Mallery 2016).

The data were normally distributed, consequently parametric tests were used (Kandane-Rathnayake et al. 2013, Ruxton et al. 2015). More specifically, a One-Way ANOVA was conducted to compare the differences in mean sharing scores between the factors of age, specialty and occupation. A Two-Way ANOVA was calculated to determine an interaction effect between sex and age (Vetter and Mascha 2017). In conjunction, the student t-test was used when comparisons between the two groups of sexes were made. Equal variances were assumed when the Levene's test for equality was insignificant. In addition, one sided testing was carried out when the hypothesis was directional, which was the case in every hypothesis except the exploratory subgroup analysis regarding differences on basis of specialisms. In this case the Tukey correction was executed to account for the multiple-testing problem. There were no

comparisons made between the groups of nurses in function of their (desired) specialization due to the small subgroups. The test values, mean differences, standard deviations, confidence intervals and p values have been reported.

Lastly, a predictive multivariable linear regression enter model was constructed in which the independent variables were tested for multicollinearity and dummy coded beforehand. The variable age*sex was calculated to verify the existence of interaction effect, and in case of significance, was retained in the model to adjust for further confounding (Pourhoseingholi et al. 2012). In addition, separate models were established for the medical students and the physicians, respectively. The use of linear regression for the nursing students was deemed unsuitable due to the small sample size and high risk for type II error (Polit 2012, Vetter and Mascha 2017). Apart from the process of dummy coding, the adjusted R Square, standardized Beta, confidence interval and p value were noted. The cutoff point for significance was set at $<0,10$ (Twisk 2014).

Results

Participants and demographics

A total of 276 surveys were retrieved, of which 94 physicians and 154 out of 230 medical students (66.95%) had partaken. Out of the approximately 125 MSc Nursing students, 26 (20.8%) responded, whereas only ten general practitioners participated. For convenience, the responses of the GP's were added to the sample of the physician specialists enlarging the sample to 94 participants. Similarly, the response from the association of nursing specialists consisted of only two completed questionnaires, which have been exempted from analysis. The characteristics of the sample have been summarized in Table 1 below.

Table 1: Demographics of the samples (n= 274)			
	Physicians (in training)	MSc in Medicine	MSc in Nursing
Total	94 (34,3%)	154 (56,2%)	26 (9,5%)
Sex			
Male	43 (45,7%)	66 (42,9%)	6 (23,1%)
Female	51 (54,3%)	87 (56,5%)	20 (76,9%)
Missing		1 (0,6%)	
Age (students)			
20 – 29		150 (97,4%)	21 (80,8%)
30 – 39		2 (1,3%)	5 (19,2%)
40 +		1 (0,6%)	0 (0,0%)
Missing		1 (0,6%)	0 (0,0%)
Age (non -students)			
20 – 34	18 (19,1%)		
35 – 49	52 (55,3%)		
50 +	24 (25,5%)		
Rank			
Physician in training	10 (10,6%)		
Physician	84 (89,4%)		

Occupation			
Fulltime student		153 (99,4%)	17 (65,4%)
Part-time student (>50%)		0 (0,0%)	3 (11,5%)
Part-time student (<50%)		0 (0,0%)	6 (23,1%)
Missing		1 (0,6%)	
Specialty			
Surgery	18 (19,1%)	24 (15,6%)	2 (7,7%)
Internal Medicine	27 (28,7%)	29 (18,8%)	1 (3,8%)
Pediatrics	11 (11,7%)	8 (5,2%)	3 (11,5%)
Geriatrics	2 (2,1%)	0 (0,0%)	0 (0,0%)
Intensive Care	2 (2,1%)	7 (4,5%)	5 (19,2%)
Maternity	5 (5,3%)	3 (1,9%)	2 (7,7%)
Revalidation Medicine	6 (6,4%)	4 (2,6%)	0 (0,0%)
Neuro-Psychiatry	6 (6,4%)	13 (8,4%)	4 (15,4%)
General Practice	10 (10,6%)	46 (29,9%)	0 (0,0%)
Not Specified	7 (7,4%)	18 (11,7%)	9 (34,6%)
Missing		2 (1,3%)	

One outlier was discarded from the sample of physicians due to the exceptional low score. Of the sample of medical students, one individual did not fill in the demographic section of the survey and another student failed to answer four statements, thus excluding these two from further analysis. Additionally, two individuals were aged 30-39, while one was aged 40+, whereas the remaining students (n=150) were all between 20 and 29 years of age. Since the subgroup of the first two mentioned age categories were too small, they were not considered for data-analysis. Furthermore, one extreme value and one outlier was exempted from analysis. The definitive sample size for analysis, after excluding missing and extreme values, consists of 266 participants of which 93 physicians, 147 medical students and 26 nursing students.

Main results

In general, the physicians ($4,24 \pm 0,64$; CI95 $4,11 - 4,37$) as well as medical ($4,30 \pm 0,61$; CI95% $4,20 - 4,40$) and nursing students ($4,30 \pm 0,67$; CI95% $4,03 - 4,57$) are disease-orientated (mean score lower than 4,57). The physicians scored lowest, and thus doctor-centered, on the statements "Patients should rely on their doctors' knowledge and not try to find out about their conditions on their own" (item 5; $3,57 \pm 1,40$), "The doctor is the one who should decide what gets talked about during a visit" (item 1; $4,00 \pm 1,44$) and "When patients look up medical information on their own, this usually confuses more than it helps." (item 18; $3,44 \pm 1,24$). The same phenomenon can be seen among the medical students regarding item 5 ($3,68 \pm 1,34$) and item 18 ($3,34 \pm 1,14$). In addition to the scores on item 5 ($3,96 \pm 1,37$) and item 18 ($3,27 \pm 1,28$), the nursing students scored lowest on item 1 ($3,39 \pm 1,40$). The individual mean scores of each item, sorted by the occupation, can be consulted in table 3 in appendix C.

Hypothesis 1: Nurses are more sharing than physicians and medical students

An ANOVA with the variable occupation as factor, showed no significant differences between the sharing scores of the nurses, the medical students and physicians. The mean scores of the subscale are presented in table 2 in appendix C.

Hypothesis 2: Younger physicians and medical students are more sharing than older physicians

The hypothesis that older physicians score lower than the medical students and physicians who are younger was not replicated in a ANOVA model with age as factor. Furthermore, an Independent T-test between the assistants/residents and the physicians of a higher rank did not show any difference.

Hypothesis 3: Significant differences exist between the various (desired) specialisms of the medical students and the physicians

The hypotheses concerning differences among specialisms was mostly replicated in this study with a One-Way ANOVA, confirming that physicians specialized in obstetrics/gynecology (Obs/Gyn) and general practice (GP) are characterized with higher sharing ($t=2,47$; $df=83$; $p<0,01$) scores than surgery. A separate Independent T-test for both GP and Obs/Gyn shows that GP score significantly higher ($t=1,99$; $df=25$; $p<0,05$; $MD=0,47 \pm 0,23$; CI95% $-0,01 - 0,95$) while the same ($t=1,99$; $df=20$;

$p < 0,05$; $MD = 0,56 \pm 0,28$; $CI_{95\%} -0,27 - 1,14$;) can be seen among the Obs/Gyn. Similar results were not seen among the medical student.

In addition, an exploratory post-hoc testing was carried out, revealing a significant difference in scores ($t = 3,92$; $df = 9$; $p < 0,001$) between the groups. More specifically, between surgeons and pediatricians ($p < 0,01$), in which the pediatricians on average score ($MD = 0,94 \pm 0,22$; $CI_{95\%} 0,23 - 1,66$) higher. Similarly, psychiatrist score higher than surgeons ($p < 0,05$; $MD = 0,89 \pm 0,27$; $CI_{95\%} 0,02 - 1,77$). Internists also score significantly lower ($p < 0,05$) than pediatricians ($MD = -0,73 \pm 0,20$; $CI_{95\%} -1,39 - -0,07$). Lastly, pediatricians score significantly higher ($p < 0,05$) than intensivists ($MD = 1,45 \pm 0,43$; $CI_{95\%} 0,03 - 2,87$), whereas psychiatrists show a trend towards significance ($p < 0,10$) in higher scores ($MD = 1,40 \pm 0,46$; $CI_{95\%} -0,10 - 2,91$). The same tests were executed for the medical students, but revealed no statistical difference between any of the groups.

In summary, as can be seen in table four in appendix C, pediatricians ($4,79 \pm 0,69$), psychiatrists ($4,74 \pm 0,47$), GPs ($4,31 \pm 0,59$) and Obs/Gyn ($4,40 \pm 0,38$) score higher than surgeons ($3,84 \pm 0,58$) on sharing. Additionally, pediatricians and psychiatrists have more sharing attitudes than intensivists ($3,33 \pm 0,94$), and pediatricians score higher in sharing than internists ($4,05 \pm 0,55$).

Multivariable linear regression model

There was a trend in significance ($p < 0,10$) in the multiple regression linear model ($F = 2,244$; $df = 231$). As the interaction term sex*age was not significant, it was exempted from the model. Only sex ($p < 0,05$; $t = 2,5$; $Beta = 0,17$) was a significant covariate, in which being female is predictive for having sharing attitudes. Around 2,6% (Adjusted R Square) of the variance in sharing is explained by the included predictors.

Table 1: Multivariable Linear Regression Model							
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	4,215	,233		18,079	,000	3,756	4,675
Sex	,214	,087	,171	2,460	,015	,043	,385
Agedummy1	-,099	,183	-,073	-,538	,591	-,460	,263
Agedummy2	,050	,246	,023	,205	,838	-,434	,535
Specialty	-,152	,111	-,094	-1,367	,173	-,370	,067
Occupation	-,049	,194	-,037	-,250	,803	-,431	,334

- a. Dependent Variable: Sharing Mean
- b. Sex: 0=Male; 1=Female
- c. Agedummy1: 0= 20-34 and 50+; 1= 35-49
- d. Agedummy2: 0= 20-34 and 35-49; 1= 50+
- e. Specialty: 0= General practice and Internal Medicine; 1= Surgery
- f. Occupation: 0= Not in training; 1= In training

In addition, separate models were constructed for the physicians and the medical students in which exclusively the physician model remained significant ($p < 0,05$; $F = 3,62$; $df = 85$). In combination with sex ($p < 0,10$; $t = 1,855$; $Beta = 0,22$), the predictor specialty ($p < 0,10$; $t = -2,23$; $Beta = -0,25$) was significant. Around 9,6% of the variances in sharing attitudes can be explained by the incorporated predictors in Table 2 below. In conclusion, being female and working in the general practice or internal medicine setting is indicative for higher sharing attitudes than being male and surgeon.

Table 2: Multivariable Linear Regression Model Physicians							
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3,998	,253		15,782	,000	3,494	4,503
Sex	,292	,157	,222	1,855	,067	-,021	,605
Agedummy1	,138	,178	,105	,773	,442	-,217	,493
Agedummy2	,358	,223	,232	1,606	,112	-,086	,801
Specialty	-,412	,185	-,251	-2,230	,028	-,779	-,044

Discussion

Interpretation of the key results

The aim of this study was to examine the perceptions of physicians, MSc students in Medicine and MSc students in Nursing regarding SDM in Flanders and position this in an international context. In general, Flemish physicians, medical- and nursing students are disease-orientated. Furthermore, the scores differ significantly on basis of sex and specialism, and not of future preferred specialism, occupation, rank or age. Lastly, sex and specialism is predictive in higher or lower sharing attitudes among the physicians.

When comparing with equivalent studies conducted in the USA, the Flemish medical students and physicians scored rather modest on sharing attitudes (Krupat et al. 2001, Krupat et al. 2004, Trotter et al. 2010). Nonetheless, the level of sharing among physicians was higher in comparison with Greece, Malaysia and Nigeria, while the medical students were more sharing than those from Greece, Singapore and Pakistan (Abiola et al. 2014, Ahmad et al. 2015, Athanasiadis et al. 2006, Chan and Ahmad 2012, Lee et al. 2008, Tsimtsiou et al. 2012, Tsimtsiou et al. 2006, Tsimtsiou et al. 2007). The scores from the individual studies can be consulted in Appendix D.

Ahmad et al. (2015) and Shankar et al. (2006) hypothesize that culture may largely account for the variation in scores between the studies (Alden et al. 2014). Meyer (2017) sheds light on this variation in attitudes towards hierarchy and respect towards authority which differs from culture to culture. As of such eastern countries such as China, India and Russia are more hierarchical whereas the USA is a typical example of an egalitarian society. However, this does not necessarily imply that every decision is made consensually. The boss is still the one who makes the final decision. Western countries such as Germany and the Netherlands, in combination with Japan and the Nordic countries, have decision making processes which lasts longer and are agreed upon by the group. Consequently, these decisions often are more durable than those made by one person. Meyer (2017) adds that the Belgian culture is rather modest in consensual decision-making and that a distinct hierarchy is present. As a result, it is typical that an individual will adhere to the decision of a superior in rank, even though he wants to be part of the decision-making process. It is apparent that this phenomenon holds true in the medical context (Elliott 2001).

In addition to the cross-cultural comparison, no difference regarding age or rank were found, in contrast with the systematic review of Pollard et al. (2015) in which, although not measured with the PPOS, resident physicians were less in favor for SDM than their teachers.

Previous research of Chan and Ahmad (2012) and Pollard et al. (2015) which have determined that GP's and Obs/Gyn are more sharing than surgeons, was replicated in this study. Moreover, similar results can be seen among the pediatricians and psychiatrist from the Flemish sample. Additionally, pediatricians and psychiatrists scored higher than intensivists while pediatricians were more sharing than internists. In general, being a female general practitioner or internal medical doctor was predictive for higher sharing attitudes than being a male surgeon. Noteworthy, particular differences based on the preferred future specialization of students could not be found. In previous research, Chan and Ahmad (2012) presumed that personality types may have an important influence in the decision of which specialty the student wishes to pursue. Fang and Lii (2015) and Lydon et al. (2015) add that these personalities can be slightly altered through interaction with the environment. Although it seems that there is no specific personality profile that relates to a specific specialty (Lydon et al. 2015). This may indicate that the patient-centered attitudes generally take shape during and after the vocational training, rather than before, as a result of the encounter with the type of patients and the long-term exposure of the particular working environment (Lydon et al. 2015, Bexelius et al. 2016). This could clear up the uncertainty expressed by Tsimtsiou et al. (2007) and can be linked to the systematic review of Légaré et al. (2008) in which patients' characteristics and the clinical context is deemed two of the three most important barriers in adopting SDM.

Limitations

Even though this study was rigorously performed and reported by use of the STROBE checklist, several limitations to this study are present. Regarding the translation process bias could be introduced due to differences in equivalence or difficult worded items. Although the guideline of Epstein et al. (2015) was adhered in which a backwards translation is not deemed necessary, the advice to choose an extra validation method was inadequately followed due to practical issues. More specifically, while the scale was face validated by the supervising professor and the ethics committee, a handful of medical students found item two difficult to interpret owing to sentential miscomprehension (Hardy and Ford 2014). Other possibilities for bias is due to the impact of emotions and stress as the students were presented with the survey soon after finishing their examination which may have resulted in random error (Polit 2012). Additionally, as the students were required to know about SDM and patient-centered communication, their answer could introduce social desirability bias instead of their own attitudes (Van de Mortel 2008, Krosnick and Presser 2010).

Selection bias may be present considering the low response rate (10% to 20%) of the electronic version of the questionnaire. This was mostly due to the high demand of participation through the used medium. Because of this, individuals who are more inclined to be patient-centered may have been more willing to respond to the invitation, resulting in an overestimation of the attitudes (Fluss et al. 2014). Additionally, recruitment of the samples was limited to two hospitals, one region (East-Flanders) and one University, impairing the external validity (Vetter and Mascha 2017).

Lastly, even though a correction was used for the multiple testing problem, the power could still be weak to detect any significance in the small subgroups based on specialty and rank of the physicians and medical students. For instance, around one of the ten general practitioners were male, one was aged 35-49 and another one 50+, while the other eight were 20-34 years. As sex was indicated as a significant variable, it remains unclear if the general practitioners score higher in sharing because of their specialization or because of the overrepresentation of females. Same goes for the Obs/Gyn and pediatricians which comprised of almost solely females. The male physicians on the other hand were predominantly specialized in surgery, which concurrently had lower scores.

Implications and recommendations

Implications and recommendations for research

To date, rigorously conducted randomized clinical trials (RCTs) concerning patient-centered curricula are sparse (Gaufberg et al. 2014, Haidet et al. 2005, Shay and Lafata 2015). The main challenge is that SDM is a complex intervention of which different conceptualizations are used throughout the literature. Moreover, a multitude of factors contribute to actually performing SDM, factors which have not yet been adequately delineated and tested (Gionfriddo et al. 2013, Kitson et al. 2013, Zandstra et al. 2017). This explains why only a small to moderate effect (2,6% and 9,6%) could be determined in predicting sharing attitudes with the measured variables in this research (Cohen 1992, Warner 2012). Furthermore, even less studies exist which have integrated the views of patients or the congruence between physician and patient (Choi et al. 2015, Ting et al. 2014, Van Den Assem and Dulewicz 2014). This data is valuable as the concordance between physician characteristics and patients' personality and preferences is more useful than the attitudes of a single party (Krupat et al. 2004, Epstein et al. 2005, Cvengros et al. 2007). Various tools have been developed and can be used to measure this interaction (Bouniols et al. 2016, Légaré et al. 2007, Scholl et al. 2011). In addition, RCTs are mainly focused on proximal outcomes, while validated distal and long-term patient-reported outcomes (PRO) are needed (Brundage et al. 2013, Lavalley et al. 2016). Lastly, the focus on nursing and other health care professionals have been limited (Laplante-Lévesque et al. 2014, Manchaiah et al. 2014).

Implications and recommendations for practice and education

Firstly, Flemish physicians and the medical and nursing students share the belief that the patient should rely on the knowledge of their physician, rather than their own or by consulting external information sources. However, the internet is increasingly being used by patients to search for health-related information, especially because of insufficient information provision by the care professional and a lack of trust (Rider et al. 2014, Trefflich et al. 2015). It is the role of the care professional to evaluate online information and provide the patient with evidence-based internet sources (McNeil and Arena 2017). Performing internet based interventions is worthwhile as it empowers the patient to become more informed, confident and active (Elbert et al. 2014, Rider et al. 2014, Sahin et al. 2014).

Secondly, physicians act predominantly paternalistic as they perceive themselves as the one who decides what gets talked about. Noteworthy, nurses were even more in favor of this statement. Concurrently with the required shift of culture among the physicians, is the rising need to change the role of the nurse to one that emphasizes coaching of the patient in partaking in the decision-making process and in self-managing their, often chronic, condition (Madsen and Fraser 2015, Clark et al. 2009). Nurses most often play an important role in the interdisciplinary team since they act as the patient's advocate and can more readily provide information and aid patients in making their decisions (Jo and An 2015, Friesen-Storms et al. 2015). However, it seems that nurses' attitudes and skills concerning SDM and communication are not always adequate despite the increasing attention towards the implementation of advanced practice nurses internationally and in Belgium (Berckmans et al. 2008, Crevits 2016, Friesen-Storms et al. 2015, Maier and Aiken 2016, Maier et al. 2016, Martínez-González et al. 2014, Paulus et al. 2012, Swan et al. 2015). As such, it may be valuable to focus on these perceptions along with the list of barriers and facilitators identified by Beers et al. (2017), Chewning et al. (2012), Couet et al. (2015), Joseph-Williams et al. (2014), Légaré et al. (2008) and Pollard et al. (2015) when developing a SDM-based curriculum or training program.

Légaré et al. (2013) have tried to establish a list of core competencies which is recommended to include in curricula and trainings. These comprise the need to respect the patient and their perspective, take account of their health literacy, facilitate involvement, listen to the patient, and establish trust and partnership regardless of the patient's background. Furthermore, health care professionals need to be able to discuss uncertainty, communicate about the risks, benefits and options of treatments. To improve these skills, the training should consist of (1) interactive sessions; (2) various teaching techniques; (3) useful teaching material such as decision aids, checklists and video- and audio tapes; and (4) reminders and reinforcers (Légaré et al. 2013, Towle and Godolphin 1999). The three-talk model developed by Elwyn et al. (2017) is a practical tool for practitioners comprising the necessary step to facilitate SDM in the clinical encounter. Moreover, the cooperation between physicians, nurses and other health care professionals can be improved by sharing more classes together so they can learn from each other and so that students are more prepared to actively collaborate in the work setting (Legare et al. 2014, House and Havens 2017). Particular

classes could alter the perception that the physician is the one who should decide in the consultation (House and Havens 2017). Lastly, the curriculum should comprise of longitudinal contact with patients and faculty mentors in order to reduce a decrease in students' empathy, ethical skills and attunement to patients with special needs. This is due to the informal curriculum in which the students adopt behavior seen from health care professionals in higher positions and the presence of the biomedical model in practice (Krupat et al. 2009, Trotter et al. 2010).

Implications and recommendations for policy

Despite the attention of SDM internationally, policies remain rather indifferent towards SDM (Elwyn et al. 2016). The same can be seen in Belgium where SDM has not yet been formulated as a target in the federal Belgian Health Care system, despite the recommendations from the Belgian Health Care Knowledge Centre (KCE) (Christiaens et al. 2013). Moreover, most of the Belgian health care system still consist of disease-orientated programs (Paulus et al. 2012).

The government plays an important role in handling barriers and facilitating a shift in attitudes (Elwyn et al. 2016, Oostendorp et al. 2015). In order to implement SDM in clinical practice, minimal three conditions need to be met: (1) accessibility to evidence based diagnostic and treatment information and options; (2) the availability of guidelines with the pros and cons of each possible option in combination with an individualized approach; and (3) a clinical environment which supports patient participation (Harter et al. 2017, Härter et al. 2011, Legare and Witteman 2013, Politi et al. 2013).

Some progress can be seen since the publication of the position paper concerning the reorganization of care for chronic ill patients by the KCE in which the use of e-health, training of health care professionals and implementation of decision aids is mentioned (Paulus et al. 2012). As such, the revision of the Royal Decree 78 and the Law of 10 May 2015, which is estimated to be implemented during 2018, consist of three pillars of which one is striving to a multidisciplinary and integrated health care for and with the patient (Crevits 2016). Another initiative towards patient-centered care are the plans of reforming the current payment methods to value-based methods such as prospective pathology-based financing, bundled payment and pay for performance (Van de Voorde et al. 2014). This, in combination with the increasing functional differentiation among

nurses, the recent possibility of direct access to the electronic medical file by patients, and the use of other e-health applications could prove beneficial for the integration of SDM in the health care system (Berckmans et al. 2008, Crevits 2016, Durand et al. 2015, Elwyn et al. 2016).

Conclusion

Shared decision making can be seen as the pinnacle of patient-centered care and is associated with the principle of autonomy which has been interpreted differently throughout the ages. This revolution in advocating patient autonomy has its origin in the US due to the discourse of Charles et al. in 1975. Despite countless research articles and initiatives worldwide, health care providers remain reluctant to accept SDM. Furthermore, numerous countries have failed to actively integrate SDM in their policy, including Belgium.

Therefore, the purpose of this research article was to present pivotal information in the current attitudes of health care providers and students and to evaluate the current progress in realizing SDM. This was accomplished by disseminating a translated version of the Patient-Practitioner Orientation Scale to Flemish physicians, third year postgraduate students in Medicine and Master of Science students in nursing. It is apparent that the respondents are moderately doctor-centered and that they believe that the physician is the one who decides in the clinical encounter and that the patient should rely on their knowledge instead of searching for information on their own. Particular mindset is typical for a paternalistic health care, meaning that the revolution in favor of patient-centeredness has far from reached its peak in Flanders (*Belgium*).

In addition to the identification of these barriers, other gaps in the literature were addressed. As of such, this research suggests that medical students possess equal sharing attitudes before graduating and that these attitudes ameliorate or decrease after prolonged exposure to the working environment and the characteristics of the patient population. More specifically, general practitioners, Obs/Gyn, psychiatrist and psychologists tend to be more sharing than surgeons. Thus, it is advised to further improve the current curricula of medical and nursing students to account for these differences among patients, and in handling not only the barriers identified in this thesis, but likewise those identified by other studies. The construction of an innovative curriculum and training programs is highly necessary to move closer to a patient-centered health care. Nonetheless, severe gaps in the literature regarding the structure, content and outcomes are still present, and further research is warranted in which patients are actively engaged in the developmental and educational phase.

This study is characterized with limitations such as a moderate sample of physicians and medical students, a very small number of nursing students, the failed recruitment of advanced practice nurses, and the use of a cross-sectional design. Nonetheless, the main strength of this study is that it is the first to shed light on the current views of providers, including the understudied nursing profession, with respect to SDM, and in proposing specific implications and recommendations for stakeholders to advance the field of SDM in Flanders, Belgium.

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Appendix A: The Patient Practitioner Orientation Scale (PPOS)

The statements below refer to beliefs that people might have concerning doctors, patients, and medical care. Read each item and then blacken in the circle to indicate how much you agree or disagree with each.

		<i>Strong- ly disagree</i>	<i>Moder- ately disagree</i>	<i>Slight- ly disagree</i>	<i>Slight- ly agree</i>	<i>Moder-Strong- ately agree</i>	<i>Strong- ly agree</i>
1.	The doctor is the one who should decide what gets talked about during a visit.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	Although health care is less personal these days, this is a small price to pay for medical advances.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	The most important part of the standard medical visit is the physical exam.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	It is often best for patients if they do not have a full explanation of their medical condition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	Patients should rely on their doctors' knowledge and not try to find out about their conditions on their own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	When doctors ask a lot of questions about a patient's background, they are prying too much into personal matters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	If doctors are truly good at diagnosis and treatment, the way they relate to patients is not that important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	Many patients continue asking questions even though they are not learning anything new.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	Patients should be treated as if they were partners with the doctor, equal in power and status.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	Patients generally want reassurance rather than information about their health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	If a doctor's primary tools are being open and warm, the doctor will not have a lot of success.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	When patients disagree with their doctor, this is a sign that the doctor does not have the patient's respect and trust.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	A treatment plan cannot succeed if it is in conflict with a patient's lifestyle or values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	Most patients want to get in and out of the doctor's office as quickly as possible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	The patient must always be aware that the doctor is in charge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	It is not that important to know a patient's culture and background in order to treat the person's illness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	Humor is a major ingredient in the doctor's treatment of the patient.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	When patients look up medical information on their own, this usually confuses more than it helps.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix B: Translated Patient Practitioner Orientation Scale (PPOS)



Onderzoek naar de percepties van Belgische zorgverleners en studenten met betrekking tot gedeelde besluitvorming

Geachte mevrouw/meneer,
Beste collega student,

In het kader van een masterproef verpleegkunde aan de Universiteit Gent voer ik een onderzoek uit naar de attitudes van zorgverleners met betrekking tot het al dan niet toepassen van het zorgmodel van gedeelde besluitvorming in hun klinische praktijk. Hierbij worden huisartsen (in opleiding), arts-specialisten (in opleiding), verpleegkundig consultants en specialisten, en laatstejaars masterstudenten Geneeskunde en Verpleegkunde bevraagd.

Shared Decision-Making (SDM), of gedeelde besluitvorming, is het proces waarin de patiënt en de zorgverlener samen gezondheidsgerelateerde beslissingen nemen, gebaseerd op de best aanwezige evidentie. Zowel de zorgverlener als de patiënt zijn bereid om hun kennis, voorkeuren en waarden te delen. Het wordt gezien als een mechanisme om een paternalistische houding, waarin de arts beslist voor de patiënt, tegen te gaan. De voornaamste voordelen vinden we terug op niveau van de patiënt; meer kennis over de mogelijke risico's en voordelen, groter gevoel van veiligheid en minder spijt aangaande de behandelingsbeslissingen. SDM leidt mogelijks tot een betere zorgverlener-patiënt verhouding en hogere kwaliteit van beslissingen.

Graag willen wij uw gewaardeerde medewerking vragen aan ons project door het invullen van de bijgevoegde vragenlijst. Dit zal ongeveer tien minuten van uw tijd in beslag nemen. Alhoewel uw deelname niet verplicht is, is ze van onschatbare waarde voor de dataverzameling van dit onderzoek. Uw deelname aan deze studie vindt plaats op vrijwillige basis. U kan weigeren om deel te nemen aan de studie, en u kunt zich op elk ogenblik terugtrekken uit de studie zonder dat u hiervoor een reden moet opgeven en zonder dat dit op enigerlei wijze een invloed zal hebben op uw verdere relatie met de onderzoeker. Deze studie werd goedgekeurd door een onafhankelijke Commissie voor Medische Ethiek verbonden aan het UZ Gent en wordt uitgevoerd volgens de richtlijnen voor de goede klinische praktijk (ICH/GCP) en de verklaring van Helsinki opgesteld ter bescherming van mensen deelnemend aan klinische studies. In geen geval dient u de goedkeuring door de Commissie voor Medische Ethiek te

beschouwen als een aanzet tot deelname aan deze studie. Wij zouden u uiterst dankbaar zijn voor uw medewerking.

De resultaten van dit project zullen aangewend worden om een beter zicht te krijgen op de percepties van enerzijds de artsen en de verpleegkundig specialisten/consulenten met betrekking tot Shared Decision-Making. Dit biedt de mogelijkheid tot het evalueren van het huidige academische programma en medische zorgverlening en vormt de basis voor verder onderzoek naar de voordelen van implementatie van dit concept in de gezondheidszorg in België.

Vanzelfsprekend is uw anonimiteit strikt gewaarborgd. In overeenstemming met de Belgische wet van 8 december 1992 zal uw persoonlijke levenssfeer worden gerespecteerd.

Alhoewel de kans zeer klein is dat u door het invullen van deze vragenlijst enige schade oploopt, verplicht de wet van 7 mei 2004 (inzake experimenten op de menselijke persoon) ons een foutloze aansprakelijkheidsverzekering af te sluiten. Ook voor deze eenvoudige gegevensverzameling werd deze plicht vervuld.

Van harte hopen op uw positieve respons, dank ik u alvast oprecht voor uw interesse. Door de vragenlijst in te vullen, geeft u toestemming dat uw resultaten gebruikt mogen worden in kader van dit onderzoek.

Met hoogachting,

De Hoofdonderzoeker
Prof. Dr. Kim Smolderen

Promotor van de scriptie
Prof. Dr. Ann Van Hecke

De Vakgroepvoorzitter
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Masterstudent
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De Patient-Practitioner Orientation Scale

Gelieve de mate dat u het eens bent met volgende stellingen aan te duiden op de zes-punt schaal door het bijhorende cijfer te omcirkelen, waarin:

- 1= helemaal mee oneens
- 2= redelijk mee oneens
- 3= beetje mee oneens
- 4= beetje mee eens
- 5= redelijk mee eens
- 6= helemaal mee eens

	Helemaal mee oneens	Redelijk mee oneens	Beetje mee oneens	Beetje mee eens	Redelijk mee eens	Helemaal mee eens
1. De arts is diegene die beslist wat er besproken wordt tijdens een consultatie.	1	2	3	4	5	6
2. Hoewel de gezondheidszorg tegenwoordig minder persoonlijk is, is dit maar een kleine kost in ruil voor de vooruitgang van de geneeskunde.	1	2	3	4	5	6
3. Het belangrijkste onderdeel van een consultatie is het lichamelijk onderzoek.	1	2	3	4	5	6
4. Het is vaak het beste voor patiënten dat ze geen volledige uitleg over hun medische aandoening krijgen.	1	2	3	4	5	6
5. Patiënten zouden op de kennis van hun arts moeten vertrouwen, in plaats van zelf proberen uit te zoeken welke medische aandoeningen ze hebben.	1	2	3	4	5	6
6. Wanneer artsen veel vragen stellen over de achtergrond van de patiënt, mengen ze zich teveel in de persoonlijke levenssfeer van de patiënt.	1	2	3	4	5	6
7. Als artsen werkelijk goed zijn in het opstellen van een diagnose en behandelplan, maakt het op zich niet zoveel uit hoe ze de arts-patiënt relatie bewerkstelligen.	1	2	3	4	5	6

8. Veel patiënten blijven vragen stellen hoewel ze niets nieuws te weten komen.	1	2	3	4	5	6
9. Patiënten zouden als gelijkwaardige partners ten aanzien van hun arts benaderd moeten worden, gelijkwaardig in macht en status.	1	2	3	4	5	6
10. Patiënten willen doorgaans liever gerustgesteld worden, dan informatie te ontvangen over hun gezondheid.	1	2	3	4	5	6
11. Wanneer een arts openheid en een warme opstelling als zijn belangrijkste instrumentarium beschouwt, zal deze niet veel succesboeken.	1	2	3	4	5	6
12. Wanneer patiënten het niet eens zijn met hun arts, is dit een teken dat de arts niet het respect en vertrouwen van de patiënt heeft.	1	2	3	4	5	6
13. Een behandelingsplan kan niet slagen als het in strijd is met de levensstijl of waarden van een patiënt.	1	2	3	4	5	6
14. De meeste patiënten willen liefst dat de consultatie zo snel mogelijk achter de rug is.	1	2	3	4	5	6
15. De patiënt moet er zich altijd van bewust zijn dat de arts de leiding heeft.	1	2	3	4	5	6
16. Het is niet belangrijk om de cultuur en de achtergrond van de patiënt te begrijpen om de ziekte van die persoon te behandelen.	1	2	3	4	5	6
17. Humor is een belangrijk element dat de arts kan gebruiken bij het behandelen van patiënten.	1	2	3	4	5	6
18. Wanneer de patiënt zelf medische informatie opzoekt, veroorzaakt dit doorgaans meer verwarring dan dat het helpt.	1	2	3	4	5	6

Gelieve aan te duiden wat voor u het meeste van toepassing is door het bolletje in te kleuren.

Wat is uw geslacht?

- ☐ Man
- ☐ Vrouw

Wat is uw leeftijd?

- ☐ 20 – 29
- ☐ 30 – 39
- ☐ 40+

Ik ben een:

- ☐ Voltijds student
- ☐ Deeltijds student (>50%)
- ☐ Deeltijds student (<50%)

In welke discipline wilt u zich verder specialiseren?

- ☐ Huisartsgeneeskunde
- ☐ Heelkunde (C-Dienst)
- ☐ Interne (D-Dienst)
- ☐ Pediatrie (E-Dienst)
- ☐ Geriatrie (G-Dienst)
- ☐ Intensieve Zorgen (I-Dienst)
- ☐ Materniteit (M-Dienst)
- ☐ Gespecialiseerde dienst behandeling en revalidatie (SP-Dienst)
- ☐ Neuro-psiatrie (volwassenen en kind) (A-Dienst + K-Dienst)
- ☐ Ik weet het niet/overige

Hartelijk dank voor uw deelname aan dit onderzoek!

Appendix C: Tables of the results

Table 1: Difference between female and males					
Population	Sex	N	Mean	Std. Deviation	Std. Error Mean
Physician (In training)	Female	51	4,3791	,62309	,08725
	Male	42	4,0741	,63553	,09806
MSc Medicine (Year 3)	Female	85	4,3858	,59547	,06459
	Male	62	4,1922	,61190	,07771
MSc Nursing	Female	20	4,3444	,64778	,14485
	Male	6	4,1667	,77539	,31655

Table 2: Difference between occupations						
95% Confidence Interval for Mean						
Population	N	Mean	Std. Dev.	Std. Error	Lower Bound	Upper Bound
Physician (In training)	93	4,2413	,64365	,06674	4,1088	4,3739
MSc Medicine (Year 3)	147	4,3041	,60798	,05015	4,2050	4,4032
MSc Nursing	26	4,3034	,66708	,13083	4,0340	4,5729

Table 3: Difference scores per item										
Population		Item 1	Item 4	Item 5	Item 8	Item 9	Item 10	Item 12	Item 15	Item 18
Physician (In training)	Mean	4,0000	5,4468	3,5638	4,0957	4,2340	4,2340	4,6809	4,3298	3,4362
	Median	4,0000	6,0000	3,0000	4,0000	5,0000	4,0000	5,0000	4,5000	3,0000
	Std. Dev.	1,43684	,75658	1,40321	1,09808	1,36331	1,21306	1,04945	1,18583	1,24052
MSc Medicine (Year 3)	Mean	4,5584	5,3636	3,6797	4,2792	4,3224	4,1948	4,4675	4,4091	3,3377
	Median	5,0000	6,0000	4,0000	4,0000	5,0000	4,0000	5,0000	4,5000	3,0000
	Std. Dev.	1,19906	1,02146	1,33601	,98017	1,33522	1,04836	1,23229	1,10029	1,14459
MSc Nursing	Mean	3,3846	5,3077	3,9615	4,1923	4,5000	4,3846	4,9615	4,7692	3,2692
	Median	3,0000	6,0000	4,0000	4,0000	5,0000	5,0000	5,0000	5,0000	3,0000
	Std. Dev.	1,38786	,88405	1,37057	1,20064	1,24097	1,20256	1,11286	1,14220	1,28243

Table 4: Differences between chosen specialty											
Physicians						Students					
		N	Mean	Std. Dev.	95% Confidence Interval for Mean		N	Mean	Std. Dev.	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound				Lower Bound	Upper Bound
Sharing	Surgery	17	3,8431	,58407	3,5428	4,1434	22	4,2178	,52829	3,9836	4,4520
	Internal Medicine	27	4,0535	,54813	3,8367	4,2703	29	4,3142	,62436	4,0767	4,5517
	Pediatrics	11	4,7879	,68755	4,3260	5,2498	7	4,4286	,79201	3,6961	5,1611
	Geriatrics	2	4,7778	,78567	-2,2812	11,8368	/	/	/	/	/
	Intensive Care	2	3,3333	,94281	-5,1375	11,8041	7	4,2222	,68192	3,5915	4,8529
	Maternity	5	4,4000	,38968	3,9161	4,8839	3	3,8148	,39021	2,8455	4,7841
	Revalidation Medicine	6	4,5370	,41226	4,1044	4,9697	4	4,0833	,41944	3,4159	4,7507
	Neuro-Psychiatrie	6	4,7407	,46966	4,2479	5,2336	13	4,2991	,78749	3,8233	4,7750
	General Practice	10	4,3111	,59674	3,8842	4,7380	44	4,3207	,52512	4,1611	4,4804
	Not Specified	7	4,2857	,49631	3,8267	4,7447	17	4,4395	,72729	4,0656	4,8135
	Total	93	4,2413	,64365	4,1088	4,3739	146	4,2994	,60732	4,2000	4,3987

Appendix D: Data extraction tables

Table 1: Overview of studies reporting the PPOS scores of medical students

Study/Country	Design	Participants	Year of study	Overall PPOS	Sharing subscale	Caring subscale
(Haidet et al. 2001) USA	Cross-sectional	293 Graduate Medical students	Year 3	4.58	/	/
(Haidet et al. 2002) USA	Cross-sectional	263 Graduate Medical students	Year 1	4.61	/	/
		158 Graduate Medical students	Year 3	4.59	/	/
		89 Medical students	Year 4	4.46	/	/
(Haidet et al. 2005) USA	Cross-sectional	890 Graduate Medical students, 10 medical schools	Year 3 and 4	4.8	?	?
(Krupat et al. 2009, Bell et al. 2008) USA	Longitudinal	32 Graduate Medical students (innovative curriculum)	Year 3 beginning	5.00	?	?
			Year 3 end	5.00	?	?
		17 Graduate Medical students (regular curriculum)	Year 3 beginning	4.90	?	?
			Year 3 end	4.57	?	?
(Balentine et al. 2010) USA	Longitudinal	236 Graduate Surgical students	Year 1	4.5	?	?
			Year 3	4.54	?	?
(Trotter et al. 2010) USA	Cross-sectional	47 Graduate Medical (innovative curriculum)	Year 3 before course	4.47	4.41	4.54
			Year 3 after course	4.46	4.35	4.58

			Year 4 end	2.78	2.96	2.59
(Ribeiro et al. 2007) Brazil	Cross-sectional	738 Medical students	Semester 1	4.57	?	?
			Semester 5	4.60	?	?
			Semester 7	4.67	?	?
			Semester 9	4.76	?	?
			Semester 10	4.61	?	?
			Semester 12	4.77	?	?
(Tsimtsiou et al. 2007) Greece	Longitudinal	240 Medical students	Year 4	3.96	3.5	4.41
		243 Medical students	Year 6	3.81	3.24	4.38
(Wahlqvist et al. 2010) Sweden	Longitudinal	593 Undergraduate Medical students	Semester 1	4.23	/	/
			Semester 11	4.35	/	/
(Lee et al. 2008) Singapore	Cross-sectional	226 Medical students	Year 3	4.1	3.8	4.4
(Rasha et al. 2009) Saudi Arabia	Cross-sectional	122 Medical students	Year 6	4.0	?	?
(Moore 2009) Nepal	Cross-sectional	45 Medical students	Year 4	4.26	4.62	3.98
(Ahmad et al. 2015) Pakistan	Cross-sectional	783 Medical students	Year 1 - 5	3.40	3.18	3.63

Table 2: Overview of studies reporting the PPOS scores of physicians

Study/Country	Design/Intervention	Participants	Specialization	Overall PPOS	Sharing subscale	Caring subscale
(Krupat et al. 2001) USA	Cross-sectional	45	General Practice	4.5	4.5	/
(Krupat et al. 2004) USA	Randomized Controlled Trial (predictor variable)	52	General Practice	4.63	4.63	/
(Mann et al. 2013) USA	Pretest-posttest (Patient-Centered Communication Curriculum)	Precurriculum 23	Pediatric First Year Residents	4.64	4.57	4.68
		Post curriculum		4.55	4.38	4.71
(Athanasiadis et al. 2006) Greece	Pretest-posttest (7h Erectile Dysfunction workshop)	Pre participation 101	General Practice, Internists, Cardiologists, Endocrinologists and Urologists	3.85	3.24	/
		Post participation		4.01	3.46	/
(Tsimtsiou et al. 2006) Greece	Cross-sectional (after attendance of Erectile Dysfunction workshop)	222	General Practice, Internists, Cardiologists, and Urologists	3.90	3.33	4.47
(Tsimtsiou et al. 2012) Greece	Cross-sectional (after attendance of Erectile Dysfunction workshop)	400	General Practice, Internists, Cardiologists, and Urologists	3.3	3.3	/
(Carlsen et al. 2008) Norway	Cross-sectional	41	General Practice	4.31	4.31	/
(Chan and Ahmad 2012) Malaysia	Cross-sectional	67	25 General Practice	4.33 ± 0.57	3.62	5.03
			12 Oncology	5.02 ± 0,28	4.64	5.38

			16 Surgery	2.88 ± 0,78	2.55	3.13
			14 Obstetrics & Gynecology	4.19 ± 0,76	3.49	4.89
(Chan and Azman 2012) Malaysia	Cross-sectional	12	Oncology	4.97	4.65	5.26
(Abiola et al. 2014) Nigeria	Cross-sectional	214	Unspecified	3.98	4.25	3.71
(Ishikawa et al. 2014) Japan	Cross-sectional (start of residency program)	67	Unspecified	4.55	4.35	4.76
(Chan et al. 2015) Malaysia	Cross-Sectional	43	Oncology	4.01	/	/

Table 3: Overview of studies reporting the PPOS scores of other health care professionals

Study/Country	Design	Participants	Year of study	Overall PPOS	Sharing subscale	Caring subscale
(Madhan et al. 2011) India	Cross-sectional	202 Orthodontic students	Year 1, 2 and 3	3.38	3.11	3.65
(Ross and Haidet 2011) USA	Pre-post design with 32h psychosocial course	49 Doctor of Physical Therapy students before course	/	4.52	4.37	4.6
		After course	/	4.76	4.9	4.51
(Beattie et al. 2012) USA	Pre-post design with a behavioral science lecture and first clinical experience over three months	66 undergraduate dental students pre-course	Year 1	3.43	3.33	3.55
		Post-course		3.37	3.22	3.5
(Laplane-Lévesque et al. 2014) Australia	Cross-sectional	663 Audiologists	/	4.66	?	?
(Grilo et al. 2014) Portugal	Cross-sectional	238 Nursing students	Year 1	4.31	4.11	4.51
		156	Year 2	4.70	4.62	4.80
		130	Year 4	4.96	4.94	4.98
		108 Hospital nurses	/	4.48	4.25	4.71
(Manchaiah et al. 2014) Portugal, India and Iran	Cross-sectional	55 Audiologists from Portugal	/	4.2	4.2	4.1
		78 India	/	3.5	3.4	3.5
		58 Iran	/	3.4	3.2	3.6
(Chan et al. 2015) Malaysia	Cross-Sectional	24 Oncology Nurses	/	3.38	/	/

