



A STUDY ON KNOWLEDGE, ATTITUDE, AND PRACTICE OF SHARED DECISION-MAKING AMONG PHYSICIANS IN PRIMARY HEALTH CARE IN SAUDI ARABIA

Medicine

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ABSTRACT

Background: Shared decision making is a valuable core for patient centered care, and has become universal in clinical practice. One of the potential challenges is to bring shared decision-making into reality and make physicians handle it in their routine practice.

Objectives: To determine the knowledge, attitude and practice of shared decision making among primary care physicians in Dammam city, eastern province of Saudi Arabia.

Methods: Descriptive cross-sectional study through self-administrated questionnaire with the use of SDM-DOC9. Modification was done to the knowledge part of the questionnaire and that underwent a pilot study.

Setting: 30 primary care clinics in Dammam city, Eastern Province, Saudi Arabia.

Participants: Our sample consists of 136 subjects as follow: 103 general practitioners, 30 family medicine specialists and 3 family medicine consultants.

Result: The sample size included 136 physicians. 89.7% were general practitioners. 76.5% of physicians knew the definition of SDM. Half of participants (50%) strongly agreed that SDM is well-known in practice setting. Only 35.3% of physicians were trained in shared decision making. About two-thirds (61.8%) of our studied physicians said that SDM provided patient safety, satisfaction and quality of care. 61% of physicians prefer to discuss options with their patient and then come to a decision together. 48.5% of physicians strongly agreed that lack of applicability of was due to the clinical situation and culture difference among attendees. More than half (51.5%) of our physicians thought that there was insufficient time with patients. Regarding the relationship between socio-demographic characteristics and knowledge, attitude and practice of SDM; our findings were statistically non-significant.

Conclusion: SDM improves clinician-patient relationships, helps in taking the best decision and the best outcome. So, continuous physician practice and increasing their knowledge and attitude towards SDM is an important concern nowadays.

KEYWORDS

INTRODUCTION:

Medical consultation is the meeting between a physician and a patient for a query to be answered. Health care service is delivered through patient-centered care, which is the core value of family practice. It means to provide care in an individualized fashion where preferences, needs and values all guide to clinical decision and that's all made in a stepwise approach.

Patient-centered care is unique because it builds a relationship, explores the reasons, solves the problems, address all considerations, management, and closure. This works through a solid platform of good communication skills, evidence-based information and shared decision making (1).

The term shared decision making was established in the early 1980s. Defined as the approach where both patient and physician exchange information, discuss the best available evidence and agree about the management plan (2). Soon afterward the term patient-centered care came (3). In 2001, the Institute of Medicine Crossing the Quality Chasm called for increased attention to patient-centered care that was defined as well as "providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions" (4).

Three model styles for decision-making are common in clinical practice. Paternalistic style in which the physician takes the role of a clinical decision, on the other hand, consumerism style where patients and family members decide the management plan. In between these two styles, shared decision-making takes place (5).

Shared decision-making principles were clearly stated in early 1982 (6). To apply shared decision-making certain characteristics must be provided as identified by Charles et al (1997). First to participate physician, patient, and their family members. Both parties take steps to build a consensus about the preferred treatment. The physician explains to the patient the treatment alternatives and their possible

consequences. Both physician and patient discuss information and value. Finally, the patient and physician together set up agreement on treatment plan (8).

In the last decade, shared decision-making has manifested its efficiency in controlled contexts and the policy disciplined globally. In USA, the Patient Protection and Affordable Care Act supports health organizations and healthcare professionals to advocate patient involvement in healthcare and promote evidence-based knowledge about the harmful, beneficial intervention and outcome possibilities. As reported by the Institute of Medicine, patient engagement in decision making should be provided to facilitate the quality of healthcare (9).

Shared decision-making is appropriate in any scenario when there is more than one acceptable plan and no one option is best for everyone. With this kind of engagement patient safety, satisfaction, and quality of care are provided (2).

Recently, many researches confirm the benefit of using Decision Aids (10). Decision aid tools help people to prepare information with measurable and careful choices about their management. A systematic review of decision aids shows that they improve patients' knowledge regarding treatment options and their condition (11).

Although numerous articles explored the principle and concept of shared decision-making, still there is gap to how physicians practice it and improve more patient-centered practices in primary care setting (6).

1.0 Aim and Objectives:

1.1 Aim of Study:

To determine the knowledge, attitude and practice of PHC physicians regarding shared decision making in Dammam city, Eastern Province of Saudi Arabia.

1.2 Objectives:

- To assess the knowledge of shared decision-making.

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- To determine the attitude of shared decision making.
- To explore the practice of physicians to practice shared decisionmaking.

To identify the factors that influence shared decision making.

2.0 METHODOLOGY:

2.1 Study Setting and Time:

Location: Dammam City, which is the capital of the Eastern Province of Saudi Arabia.

Setting: Primary health care centers in Dammam, with a total number of 30 PHCC. Year: 2018-2019

2.2 Study Design:

Descriptive cross-sectional study through self-administrated questionnaire.

2.3 Study population:

All physicians who work in primary health care setting in Dammam, Eastern Province, Saudi Arabia.

2.4 Inclusion Criteria:

General practitioners, family medicine specialists and consultants Who work for at least one year in primary health care centers in the eastern province in Saudi Arabia.

2.5 Exclusion Criteria:

Other healthcare providers: dentists, nurses, trainees, and physicians not performing full time practice (<5 sessions per week) such as working in administration.

2.6 Study variables:

2.6.1 Dependent variables:

Shared decision-making knowledge, attitude and practice.

2.6.2 Independent variables

Age, sex, nationality, certification degree, job title, years of work experience, clinical sessions per week and work load.

2.7 Sampling:

2.7.1 Sample Size:

All physicians working in all primary health care centers in Dammam city will be included in the study. They are estimated to be 145 physicians.

2.8 Data Collection Tool and Technique:

Data will be collected from all physicians working in primary health care centers through self-administrated questionnaire.

The questionnaire will consist of four main parts:

- Sociodemographic data: age, sex, nationality, certification degree, job title, years of work experience, clinical sessions per week and work load.
- Questions to assess the knowledge of: patient centered care, decision aid tools, steps to apply, styles of decision making and barriers.
- Questions to assess the attitude of: willing to apply share decision making, patient involvement and preference of decision style.

Questions to assess the practice of: sharing and explaining available options, check understanding of patient and treatment agreement.

2.9 Questionnaire Validation:

This questionnaire was extracted from shared decision-making questionnaire (SDM-Q-Doc 9)⁽¹³⁾ from a published article that covered both attitude and practice⁽¹⁴⁾. Modification was done to the knowledge part of the questionnaire and that underwent a pilot study^(1,2,5,10,15). The knowledge part was validated by Family Medicine expertise and reliability was calculated.

2.10 Pilot Study:

A pilot study was conducted on 10% of the real sample size of the same characteristic to test the understanding of the questionnaire.

2.11 Study Implication:

This study will help to measure knowledge, attitude and practice of shared decision making among primary health care physicians in order

to explore the decision model of everyday practice setting in primary health care. By identifying barriers and facilitators recommendations will be addressed further.

2.12 Study Reporting and Implementation:

A scientific paper will be written at the end of study for publication in national and international journals.

2.13 RESULTS:

After filling the questionnaire, data will be entered into personal computer and it will be analyzed using (SPSS) software version 25. All variables will be coded before entry and will be checked before analysis.

2.14 Data Analysis:

Descriptive: all continuous data will be presented in mean, median, and standard deviation. Categorical data will be presented in number and percentage. The multiple linear regression model (analysis) will be done for prediction between knowledge, attitude and practice and both socio-demographic and work-related characteristics. Correlation between knowledge, attitude and practice will be done.

2.14.1 The descriptive characteristics of the studied group (Descriptive statistics):

The total number of participants was 136, the mean age of them was 32.66 ± 4.87 (ranging from 26 to 52 years old). Most of the participants were females (64%) and were born in KSA (89.7%). Other socio-demographic and work experience related data of the study sample are presented in Tables 1 & 2 respectively.

Table (1): Socio-demographic characteristics of the studied group

Variable	Total= 136 participants	
	N	%
Age		
Mean ± SD	32.66 ± 4.87	
Median	32	
Range (min. - max.)	26 – 52 years	
Sex		
Male	49	36
Female	87	64
Place of birth		
KSA	122	89.7
Others	14	10.3

Table (2): Work experience related characteristics of the studied group

Variable	Total= 136 participants	
	N	%
Highest degree		
MBBS	103	75.7
Diploma	12	8.8
Master	8	5.9
Board	13	9.6
Job title		
General practitioners (GP)	103	75.7
Family medicine specialist	30	22.1
family medicine consultant	3	2.2
Number of years of experience		
<5 years	56	41.2
5-10 Years	59	43.4
> 10 Years	21	15.4
Number of clinical sessions per week		
less than 10	11	8.1
10	125	91.9
Average number of patients seen per day		
Mean ± SD	34.01 ± 13.621	
Median	35	
Range (min. - max.)	5 – 70	

2.14.2 Knowledge:

Table (3): Knowledge of primary health care (PHC) physicians to shared decision making

	Mean±SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
B1- Patient-centered care is providing care that is respectful and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions	4.66 ± .520			3 (2.2%)	40 (29.4%)	93 (68.4%)
B2- Shared decision making is well known in practice setting	4.19 ± .993	1 (0.7%)	11 (8.1%)	17 (12.5%)	39 (28.7%)	68 (50%)
B3- I know how to provide decision aid tools (e.g. brochures, education online site, video) for my patient	4.24 ± .775		3 (2.2%)	19 (14%)	56 (41.2%)	58 (42.6%)
B4- Shared decision making is appropriate in any scenario when there is more than one acceptable plan and no one option is best for everyone.	4.49 ± .730	1 (0.7%)		13 (9.6%)	40 (29.4%)	82 (60.3%)
B5- Shared decision making provides patient safety, satisfaction and quality of care	4.57 ± .579			6 (4.4%)	46 (33.8%)	84 (61.8%)
B6- Culture difference among PHC attendees is one of the barriers to practice shared decision making	4.25 ± .814		4 (2.9%)	20 (14.7%)	50 (36.8%)	62 (45.6%)
B7- limited or inadequate information for patients prevents them from participating meaningfully in decision-making	4.25 ± .805		2 (1.5%)	25 (18.4%)	46 (33.8%)	63 (46.3%)
B8- To provide shared decision-making treatment options must be present with their known benefit and risk to both physician and patient.	4.37 ± .787		4 (2.9%)	14 (10.4%)	46 (33.8%)	72 (52.9%)
B9- Assisting and facilitating the patient in the process of decision plan is an important step in shared decision making.	4.58 ± .565			5 (3.7%)	47 (34.5%)	84 (61.8%)
B10- Assist the patient in following through on the shared decision plan is a must.	4.48 ± .596			7 (5.2%)	57 (41.9%)	72 (52.9%)
B11- There are different styles of decision making in clinical setting.	4.43 ± .727		1 (0.7%)	16 (11.8%)	43 (31.6%)	76 (55.9%)
B12- Paternalism style of decision making is when the doctor gives information about the treatment and the patient accepts it.	4.81 ± 1.323	1 (0.7%)	3 (2.2%)	14 (10.3%)	35 (25.7%)	83 (61.1%)
B13- Consumerism style of decision making is when the doctor presents the available treatment options then asks the patient to decide on a treatment and states that he/she is the best person to make the decision.	4.42 ± .857	1 (0.7%)	5 (3.7%)	12 (8.8%)	36 (26.5%)	82 (60.3%)
B14- Shared decision making is when the doctor presents the available treatment options then invites the patient to ask any questions. Together, they decide on a suitable treatment to implement.	4.69 ± .627		2 (1.5%)	6 (4.4%)	24 (17.6%)	104 (76.5%)
B15- Diabetes mellitus type 2 best managed by shared decision making.	4.5 ± .798		3 (2.2%)	17 (12.5%)	25 (18.4%)	91 (66.9%)
B16- Emergency life threatening cases is best managed by shared decision making	1.8 ± 1.270	80 (58.8%)	33 (24.3%)	8 (5.9%)	15 (11%)	
B17- In a simple common cold case when a child mother insists on antibiotic prescription against the recommendations, shared decision making cannot be implemented	2.29 ± 1.295	51 (37.5%)	28 (20.6%)	37 (27.2%)	6 (4.4%)	14 (10.3%)
B18 - Do you know any tools that aid you in shared decision making?		NO = 25 (18.4%)		YES = 105 (77.2%)		DK (don't know) = 6 (4.4%)
B19- I was trained in shared decision making (e.g. courses, conference, workshops)		NO = 82 (60.3%)		YES = 48 (35.3%)		DK (don't know) = 6 (4.4%)

Table (4): The multiple linear regression model (analysis) for prediction between knowledge and both socio-demographic and work-related characteristics:

Multiple linear regression analysis is used to predict knowledge of PHC physicians to shared decision –making out of socio-demographic and work-related characteristics. The power of our regression model (R square) to predict knowledge was 11.6%. Our findings were statistically non-significant (p value >0.05).

Predictors	Unstandardized Coefficients B (b)	T	P value
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Constant (a)	64.986	7.643	.000
Age	-.177	-.879	.381
Sex	1.098	.714	.476
Place of birth	4.475	1.820	.071
Highest degree	.026	.025	.980
Job title	3.269	1.439	.153
Number of years of experience	-.827	-.653	.515
Number of clinical sessions weekly	.554	.811	.419
average number of patients seen per day	-.088	-1.482	.141

Knowledge score is the dependent variable.

2.14.3 Attitude:

Table (5): The attitude of primary health care (PHC) physicians to shared decision –making

	Mean±SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
C1- I am aware of the benefits of decision making	4.68 ± .543			5 (3.7%)	34 (25%)	97 (71.3%)
C2- I want to know exactly from my patient how he/she wants to be involved in making the decision?	4.34 ± .854		5 (3.7%)	19 (14%)	37 (27.2%)	75 (50.1%)
C3- In decision making I prefer to decide on what I think is the best (paternalism style)	3.1 ± 1.362	25 (18.4%)	19 (14%)	34 (25%)	33 (24.2%)	25 (18.4%)

C4-In decision making I prefer to tell my patients and their families the options and they decide (consumerism style)	3.16 ± 1.389	24 (17.7%)	20 (14.7%)	31 (22.8%)	32 (23.5%)	29 (21.3%)
C5-In decision making I prefer to discuss options with my patient and their families and then come to a decision together (shared decision-making style)	4.45 ± .787	3 (2.2%)		16 (11.8%)	34 (25%)	83 (61%)
C6- I am willing to apply shared decision making	4.43 ± .727			19 (13.9%)	39 (28.7%)	78 (57.4%)
C7-I think that there is insufficient time for detailed discussion with patients and that patients have difficulty understanding all that they need to know to make decisions?	4.08± 1.161	5 (3.7%)	12 (8.8%)	20 (14.7%)	29 (21.3%)	70 (51.5%)
C8-Lack of applicability due to the clinical situation, I think this is one barrier of share decision making	4.01± 1.164	2 (1.5%)	20 (14.7%)	19 (14%)	29 (21.3%)	66 (48.5%)

Table (6): The multiple linear regression model (analysis) for prediction between attitude and both socio-demographic and work-related characteristics:

Predictors	Unstandardized Coefficients B (b)	T	P value
Constant (a)	31.673	7.768	.000
Age	.063	.655	.514
Sex	.617	.836	.405
Place of birth	1.191	1.010	.314
Highest degree	-.072	-.147	.883
Job title	1.264	1.160	.248

Number of years of experience	-1.861	-3.066	.003*
Number of clinical sessions weekly	-.182	-.557	.579
average number of patients seen per day	-.005	-.171	.865

The multiple linear regression analysis is used to predict attitude of PHC physicians to shared decision –making out of socio-demographic and work-related characteristics. The power of our regression model (R square) to predict attitude was 9.9%. The number of years of experience was the only statistically significant predictor (p value <0.05).

Attitude score is the dependent variable.

2.14.4Practice:

Table (7): Practice of primary health care (PHC) physicians to shared decision –making

	Mean±SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
D1- I made clear to my patient that a decision needs to be made by both doctor and patient	4.42 ± .822		4 (2.9%)	17 (12.5%)	33 (24.3%)	82 (60.3%)
D2- I told my patient that there are different options for treating his/her medical Condition	4.35 ± .898		5 (3.7%)	24 (17.6%)	26 (19.1%)	81 (59.6%)
D3- I precisely explained the advantages and disadvantages of the treatment options to my patient	4.29 ± .894		7 (5.1%)	19 (14%)	38 (27.9%)	72 (53%)
D4- I helped my patient understand all the information	4.52 ± .677		1 (0.7%)	11 (8.1%)	40 (29.4%)	84 (61.8%)
D5- I asked my patient which treatment option he/she prefers	4.65 ± 4.453		6 (4.4%)	20 (14.7%)	39 (28.7%)	71 (52.2%)
D6- My patient and I thoroughly weighed the different treatment options	4.05 ± .905	1 (0.7%)	4 (2.9%)	34 (25%)	45 (33.1%)	52 (38.3%)
D7- My patient and I selected a treatment option together	4.16 ± .968		7 (5.1%)	33 (24.3%)	27 (19.9%)	69 (50.7%)
D8- My patient and I reached an agreement on how to proceed	4.43 ± .767		3 (2.2%)	14 (10.3%)	40 (29.4%)	79 (58.1)

Table (8): The multiple linear regression model (analysis) for prediction between practice and both socio-demographic and work-related characteristics:

The multiple linear regression analysis is used to predict practice of PHC physicians to shared decision –making out of socio-demographic and work-related characteristics. The power of our regression model (R square) to predict practice was 9.1%. Our findings were statistically non-significant (p value >0.05).

Predictors	Unstandardized Coefficients B (b)	T	P value
Constant (a)	42.973	5.840	.000
Age	-.129	-.742	.459
Sex	-1.044	-.783	.435
Place of birth	2.389	1.123	.264
Highest degree	.552	.621	.536
Job title	2.213	1.126	.262
Number of years of experience	-1.947	-1.774	.078
Number of clinical sessions weekly	-.399	-.674	.501
average number of patients seen per day	-.031	-.608	.545

Practice score is the dependent variable.

2.14.5 The correlation between knowledge, attitude and practice:

Table (9): The correlation between knowledge and attitude of studied group

There was a mild (weak) positive association between knowledge and attitude, which was statistically significant (P value <0.05).

	Knowledge	
	r	P value
Attitude	0.253	0.003*

r: Pearson correlation coefficient *P value <0.05: significant

Table (10): The correlation between knowledge and practice of studied group

There was a mild (weak) positive association between knowledge and practice, which was statistically highly significant (P value <0.001).

	Knowledge	
	r	P value
Practice	0.282	0.001**

SDM improves clinician-patient relationships, helps in taking the best decision and the best outcome. So, continuous physician training and increasing their knowledge towards SDM is an important concern nowadays.

Table (11): The correlation between attitude and practice of studied group

There was a moderate positive association between attitude and practice, which was statistically highly significant (P value <0.001).

	Attitude	
	r	P value
Practice	0.366	< 0.001**

2.15 Study Strength:

To our knowledge this is the first study in the Kingdom of Saudi Arabia about knowledge, attitude and practice of shared decision making among primary health care physicians.

2.16 Study Limitations:

This is a cross-sectional study, so it has limitation in evaluation temporality and causality of the observed assessment.

2.17 Ethical Consideration:

- Written permission from Joint Program of Family & Community Medicine will be obtained before conduction of the research.
- Approval of the study will be requested from ministry of health research committee prior to implementation of the study
- Attitude and practice part of questionnaire will be taken from valid questionnaire^(26,27).
- Validity of knowledge part of questionnaire will be optioned from 8 consultants.
- Individual consent is a prerequisite for data collection.
- It will be written on the front page of the questionnaire that (Answering questionnaire means agreement of participation in the study).
- All information will be kept confidential and will not be accessed except for the purpose of scientific research. The information will be used for research purpose only.
- Will explain the study purpose to the physician and to reassure them that there will be no negative impact on them.

3.0 DISCUSSION:

This study assessed the knowledge, the attitude and the practice of PHC physicians towards shared decision making (SDM). The factors that influence SDM were also identified. Most of our total participants (136) were females (64%) and general practitioners (GPs) (75.7%), this data isn't in line with Bieber et al.⁽²⁸⁾ who had almost equal gender distribution among participants (46% females).

76.5% of physicians defined SDM as when the doctor presents the available treatment options then invites the patient to ask any questions. Together, they decide on a suitable treatment to implement. Half of participants (50%) strongly agreed that SDM is well-known in practice setting. Pollard et al.⁽²⁹⁾ totally agree with us; he showed that 42% of physicians were using SDM and strongly supporting it.

Only 35.3% of physicians were trained in shared decision making (e.g. courses, conference, workshops). These findings are in contrast with Holmes-Rovner et al.⁽³⁰⁾ who reported that 75% of health care providers had training for SDM in the form of role modeling (between the trainer and a simulated patient), patient scenarios in pairs, and role-playing providers and patients. While in Sonntag et al.⁽³¹⁾ reports came with different results. The GPs in his study had no previous SDM training. Generally different rates of SDM training can be restored to the presence of many non-obligatory SDM training courses.

Physicians need different practical tools and strategies to help them to ascertain efficiently patient preferences regarding diagnosis of their medical condition, different modalities of treatment and identify appropriate decision to be shared⁽²⁵⁾. This is result is consistent with our findings that 77.2% of physicians know different tools that aid them in shared decision making.

Dobler et al.⁽³²⁾ and Gustin⁽³³⁾ reported that using different decision aids facilitate for SDM by improving patient knowledge and reducing patient anxiety. In addition, Stacey et al.⁽³⁴⁾ stated that decision aids reduced the frequency of undecided participants and seemed to have a positive effect on patient-clinician communication. Moreover, using decision aids increased patient satisfaction with their decision and with the whole decision-making process. About two-thirds (61.8%) of our studied physicians said that SDM provided patient safety, satisfaction and quality of care.

Based on our results; 61% of physicians prefer to discuss options with their patient and then come to a decision together (shared decision-making style). In a systematic review, Pollard et al. (2015) reported that 17 studies compared a SDM model to a paternalistic model in which the physician alone makes the treatment decision; 82% of papers reported a strong preference for SDM.

Regarding barriers for SDM; patients lack both health literacy and a

tradition of individuals making their own decisions because of their cultural backgrounds have problems through sharing in decision-making. Lack of resources is also an important barrier facing SDM⁽³⁵⁾. These barriers are in concordance with our results which proved that 48.5% of physicians strongly agreed that lack of applicability of SDM was due to the clinical situation and 45.6% of them strongly agreed that culture difference among PHC attendees was one of the barriers to practice SDM.

Furthermore; time commitment is considered as a perceived clinician barrier to SDM⁽³³⁾. More than half (51.5%) of our physicians thought that there was insufficient time for detailed discussion with patients and that patients had difficulty understanding all that they needed to know to make decisions. Despite that, Stacey et al.⁽³⁴⁾ made Cochrane systematic review which included 105 studies involving 31,043 participants and found that SDM increased time by only 3 minutes per patient was encountered. While other studies showed no increase in time⁽³⁶⁾.

Finally, regarding prediction of the relationship between socio-demographic characteristics and knowledge, attitude and practice of SDM; our findings were statistically non-significant, while Cuevas et al.⁽³⁷⁾ reported that socio-demographic variables (more agreement as age is increased) play a significant role in the initial SDM steps, these results explain the presence of different models in SDM. On the other hand, Hajjaj et al.⁽³⁸⁾ proved that the patient's gender play an apparently inappropriate role in clinical decision-making, he mentioned that women receive more blood pressure checks, physical examinations, laboratory tests, drug prescriptions and have more physician visits per year and more services per visit than men. Their complaints are more influenced by emotional factors, so women make excessive demands on physician's time and thus affect SDM.

4.0 Recommendation

To the best of author's knowledge, this pilot study is the first quantitative research about shared decision-making among physicians in Saudi Arabia. Further studies are needed with larger sample size to have a true picture of physician's characteristics and attitude about shared decision-making. In addition, further research is needed to find the most effective interventions to implement shared decision-making into practice and to provide training program to increase their knowledge is an important concern nowadays.

Further qualitative studies are recommended to obtain a better understanding of patients' preferences and their involvement in the process of shared clinical decision.

So, this study is to shed new light on physicians that must actively involve in shared decision-making in their daily clinical practice.

REFERENCES

1. Alden DL, Friend J, & Chun MJB. Shared decision making and patient decision aids: knowledge, attitudes, and practices among Hawai'i physicians. *Hawaii J Med Public Health* [Internet]. 2013;72(11):396-400. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3831568>
2. AlHaqwi AI, AlDrees TM, AlRumayyan A, AlFarhan AI, Alotaibi SS, Alkhashan HI, et al. Shared clinical decision making: A Saudi Arabian perspective. *Saudi Med J*. 2015;36(12):1472-6.
3. 20. Allaire AS, Labrecque M, Giguere A, Gagnon & MP, Légaré F. What motivates family physicians to participate in training programs in shared decision making?. *Journal of Continuing Education in the Health Professions*. 2012 Mar; 32(2): 98-107.
4. Ambigapathy R, Chia YC, & Ng CJ. Patient involvement in decisionmaking: a cross-sectional study in a Malaysian primary care clinic. *BMJ Open* [Internet]. 2016;6(1):e010063. Available from: <http://bmjopen.bmj.com/lookup/doi/10.1136/bmjopen-2015-010063>
5. 36. Armstrong MJ, Shulman LM, Vandigo J, & Mullins CD. Patient engagement and shared decision-making: What do they look like in neurology practice?. *Neurology: Clinical Practice*. 2016 Apr 1, 6(2):190-197.
6. 14. Barry MJ, & Edgman-Levitan S. Shared decision making—the pinnacle of patient-centered care. *New England Journal of Medicine*. 2012 Mar 1; 366(9): 780-781.
7. 28. Bieber C, Nicolai J, Hartmann M, Blumenstiel K, Ringel N, Schneider A, Härter M, Eich W, & Loh A. Training physicians in shared decision-making—Who can be reached and what is achieved?. *Patient education and counseling*. 2009 Oct 1, 77(1): 48-54.
8. 27. Calderon, C., Ferrando, P.J., Carmona-Bayonas, A. et al... (2017). Validation of SDM-Q-Doc Questionnaire to measure shared decision-making physician's perspective in oncology practice. *Clin Transl Oncol*. (2017) 19: 1312. Available from: <https://doi.org/10.1007/s12094-017-1671-9>.
9. Charles C, Gafni A, & Whelan T. Shared decision-making in the medical encounter: what does it mean? (or it takes at least two to tango). *Soc Sci Med* 1997;44:681-92. Available from: [https://doi.org/10.1016/S0277-9536\(96\)00221-3](https://doi.org/10.1016/S0277-9536(96)00221-3)
10. Cuevas De las C, Peñate W, Perestelo-Pérez L, & Serrano-Aguilar P. Shared Decision making in psychiatric practice and the primary care setting is unique, as measured using a 9-item Shared Decision Making Questionnaire (SDM-Q-9). *Neuropsychiatric disease and treatment*. 2013, 9:1045.
11. Durand M, Yen R, Barr PJ, et al... Assessing medical student knowledge and attitudes about shared decision making across the curriculum: protocol for an international online survey and stakeholder analysis *BMJ Open* 2017;7:e015945. doi:10.1136/bmjopen-2017-015945.
12. 19. Elwyn G, & Charles C. Shared decision-making: From conceptual models to

- implementation in clinical practice. Shared decision-making in health care: Achieving evidence-based patient choice. 2009 Apr 2; 117.
13. 16. Elwyn G, Edwards A, Kinnersley P, & Grol R. (2000). Shared decision making and the concept of equipoise: the competences of involving patients in healthcare choices. *Br J Gen Pract.* 2000 Nov 1; 50(460): 892-899.
 14. 35. Elwyn G, Frosch D, Thomson R, et al.... Shared decision making: a model for clinical practice. *J Gen Intern Med.*, 2012;27(10):1361-7. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3445676/>
 15. 25. Fisher KA, Tan AS, Matlock DD, Saver B, Mazor KM, & Pieterse AH. Keeping the patient in the center: Common challenges in the practice of shared decision making. *Patient education and counseling.* 2018 Dec 1; 101(12): 2195-2201.
 16. 33. Gustin Jr AN. Shared Decision-Making. Elsevier, article in press. 2019:1-8 Available at: <https://doi.org/10.1016/j.anclin.2019.05.001>.
 17. 38. Hajjaj FM, Salek MS, Basra MK, & Finlay AY. Non-clinical influences on clinical decision-making: a major challenge to evidence-based practice. *Journal of the Royal Society of Medicine.* 2010 May 1, 103(5):178-87.
 18. Hillyer GC, Hershman DL, Kushi LH, Lamerato L, Ambrosone CB, Bovbjerg DH, ... & Neugut AI. A survey of breast cancer physicians regarding patient involvement in breast cancer treatment decisions. *The Breast.* 2013 Aug 1; 22(4): 548-554.
 19. 30. Holmes-Rovner M, Kelly-Blake K, Dwamena F, Dontje K, Henry RC, Olomu A, ... & Rothert ML. Shared decision making guidance reminders in practice (SDM-GRIP). *Patient education and counseling.* 2011 Nov 1, 85(2): 219-24.
 20. Hudon C, & Fortin M. Measuring patients' perceptions of patient-centered care: a systematic review of tools for family medicine. ... *Fam Med [Internet].* 2011;155-64. Available from: <http://www.annfammed.org/content/9/2/155.short>
 21. Joosten EAG, DeFuentes-Merillas L, de Weert GH, Sensky T, van der Staak CPF, & de Jong CAJ. Systematic Review of the Effects of Shared Decision-Making on Patient Satisfaction, Treatment Adherence and Health Status. *Psychother Psychosom [Internet].* 2008;77(4):219-26. Available from <http://www.karger.com/doi/10.1159/000126073>
 22. Joseph-Williams N, Elwyn G, & Edwards A. Knowledge is not power for patients: a systematic review and thematic synthesis of patient-reported barriers and facilitators to shared decision making. *Patient education and counseling.* 2014 Mar 1; 94(3): 291-309.
 23. Joseph-Williams N, Lloyd A, Edwards A, Stobbart L, Tomson D, Macphail S, ... & Thomson R. Implementing shared decision making in the NHS: lessons from the MAGIC programme. *Bmj.* 2017 Apr 18; 357: 1744.
 24. King, V. J., Davis, M. M., Gorman, P. N., Rugee, J. B., & Fagnan, L. J. (2012). Perceptions of Shared Decision Making and Decision Aids Among Rural Primary Care Clinicians. *Medical Decision Making: An International Journal of the Society for Medical Decision Making*, 32(4), 636-644. Available from: <http://doi.org/10.1177/0272989X11431961>
 25. 18. Makoul G, & Clayman ML. An integrative model of shared decision making in medical encounters. *Patient education and counseling.* 2006 Mar 1; 60(3): 301-312.
 26. Meneer M, Garvelink MM, Adekpedjou R, Perez MMB, Robitaille H, Turcotte S, et al. (2017). Factors associated with shared decision making among primary care physicians: Findings from a multicentre cross-sectional study. *Heal Expect .* 2017;(June):1-10. Available from: <https://doi.org/10.1111/hex.12603>
 27. Murray E, Pollack L, White M, & Lo B. Clinical decision-making: physicians' preferences and experiences. *BMC Fam Pract [Internet].* 2007;8(1):10. Available from: <http://bmcfampract.biomedcentral.com/articles/10.1186/1471-2296-8-10>
 28. Ortiz VE, Abrams J, & Pian-Smith MCM. Shared decision making and communication. In: *Chestnut's obstetrics anesthesia: principles and practice.* Elsevier Health Sciences, 6th Edition, 2019, Ch32, p777-796.
 29. Pollard S, Bansback N, & Bryan S. Physician attitudes toward shared decision making: A systematic review. *Patient Educ Couns [Internet].* 2015;98(9):1046-57. Available from: <http://dx.doi.org/10.1016/j.pec.2015.05.004>
 30. 26. Patient Als Partner [Internet]. Germany: Patient Als Partner;2014[2016 September 8]. Available from: http://www.patient-als-partner.de/index.php?article_id=20&clang=2/.
 31. Sonntag U, Wiesner J, Fahrenkrog S, Renneberg B, Braun V, & Heintze C. Motivational interviewing and shared decision making in primary care. *Patient education and counseling.* 2012 Apr 1, 87(1):62-6.
 32. 34. Stacey D, Légaré F, Lewis K, Barry MJ, Bennett CL, Eden KB..., et al. Decision aids for people facing health treatment or screening decisions. *Cochrane database of systematic reviews.* 2017(4).
 33. 15. Stiggelbout AM, Pieterse AH, & De Haes JC. Shared decision making: concepts, evidence, and practice. *Patient education and counseling.* 2015 Oct 1; 98(10): 1172-9.
 34. 13. Veatch R. Models for ethical medicine in a revolutionary age: what physician-patient roles foster the most ethical relationship? *Hast Cent Rep* 1972, 2: 5-7.
 35. Wilkerson, LuAnn et al. "Assessing Patient-Centered Care: One Approach to Health Disparities Education." *Journal of General Internal Medicine* 25.Suppl 2 (2010): 86-90. PMC. Web. 18 Nov. 2017.
 36. 22. Zeuner R, Frosch DL, Kuzemchak MD, & Politi MC. Physicians' perceptions of shared decision-making behaviors: a qualitative study demonstrating the continued chasm between aspirations and clinical practice. *Health Expectations.* 2015 Dec; 18(6): 2465-76.